Covered Source Permit Review Summary (Renewal)

Application File No.: 0098-02

Permit No.: 0098-01-C

Applicant: Chevron Products Company

Facility: Chevron Marine Mooring Terminal
Located 1.5 mile off the coast of Campbell Industrial Park

Mailing Address: Chevron Products Company
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Responsible Official: Edward J. Wagner
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Application Date: July 31, 2003

Proposed Project:

SICC: 4612 (Crude Petroleum Pipelines)

Chevron submitted an application to renew the covered source permit for the marine mooring terminal. The terminal operations are unchanged since the original permit application.

The Chevron marine mooring terminal is located approximately 1.5 miles off the coast of Campbell Industrial Park. The mooring terminal transports petroleum liquids between tankers and the onshore facility via pipeline. Crude oils and intermediate products are off-loaded through a 30 inch pipeline. Gasoline and other intermediate products are on-loaded through a 20 inch pipeline. The mooring terminal is a seven point mooring terminal which has seven mooring buoys and can serve only one tanker or barge at a time.

During the off-loading, the tankers do not use ocean water to ballast the ship. As such, VOC vapors are not emitted during off-loading. During the on-loading operations, VOC vapors are displaced from the storage areas and are released to the atmosphere.

Typically, off-loading occurs once a week. A typical tanker delivers approximately 700,000 barrels of product. Throughput rates are dependent upon the pumping capacity of the tanker, which can range from 5,000 to 26,000 barrels per hour. On-loading occurs approximately every six weeks with a throughput rate of 1,000 to 8,000 barrels per hour.

The mooring terminal could theoretically operate 8,760 hours per year. Using the maximum flow rates, the facility has the potential to off-load 228 million barrels per year and on-load 70 million barrels per year. However, the applicant proposed an on-loading throughput limit of 2.8 million barrels per year for gasoline component products and 500,000 barrels per year for crude products. Since there are no emissions during off-loading, the no off-loading limits are incorporated into the permit.

Equipment Description:

1. Seven (7) mooring buoys
2. One (1) 20-inch diameter submerged pipeline
3. One (1) 30-inch diameter submerged pipeline

Air Pollution Controls:

There are no air pollution controls for this facility.

Applicable Requirements:

Hawaii Administrative Rules (HAR)

Title 11, Chapter 11-59	Ambient Air Quality Standards
Title 11, Chapter 11-60.1	Air Pollution Control
Subchapter 1	General Requirements
Subchapter 2	General Prohibitions
11-60.1-31	Applicability
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

Non-applicable Requirements:

Hawaii Administrative Rules (HAR)

Title 11, Chapter 60.1	Air Pollution Control
Subchapter 7	Prevention of Significant Deterioration
Subchapter 8	Standards of Performance for Stationary Sources
Subchapter 9	Hazardous Air Pollutants

Federal Requirements

40 CFR Part 52.21 – Prevention of Significant Deterioration of Air Quality
40 CFR Part 60 - Standards of Performance for New Stationary Sources (NSPS)
40 CFR Part 61 - National Emission Standards for Hazardous Air Pollutants (NESHAP)
40 CFR Part 63 - National Emission Standards for Hazardous Air Pollutants for Source Categories (Maximum Achievable Control Technologies (MACT) Standards)
The marine mooring terminal is not subject to 40 CFR 63 Subpart Y - National

Emission Standards for Marine Vessel Tank Loading Operations- because it is defined as an "existing offshore loading terminal" (40 CFR §63.560d.6).

Best Available Control Technology (BACT) Requirements:

A Best Available Control Technology (BACT) analysis is required for new covered sources and significant modifications to covered sources that have the potential to emit or a net emissions increase above significant levels as defined in HAR §11-60.1. This facility is an existing source, pre-1972. No modifications or additions are being proposed. As such, this facility does not need to undergo a BACT review.

Prevention of Significant Deterioration (PSD):

This facility is not a major stationary source nor are there modifications proposed that by itself constitute a major stationary source that is subject to PSD review. Therefore, PSD is not applicable.

Insignificant Activities:

The facility does not have any insignificant activities.

Alternate Operating Scenarios:

The applicant did not propose any alternate operating scenarios.

Synthetic Minor Source:

This facility is not a synthetic minor source, it is a major source.

Consolidated Emissions Reporting Rule (CERR):

40 CFR Part 51, Subpart A - Emission Inventory Reporting Requirements, determines CER based on the emissions of criteria air pollutants from Type B point sources (as defined in 40 CFR Part 51, Subpart A), that emit at the CER triggering levels as show in the table below.

Pollutant	Type B CER Triggering Levels [1] (tpy)	Pollutant	In-house Total Facility Triggering Levels [2] (tpy)	Total Facility Emissions [2] (tpy)
NO_x	≥ 100	NO_x	≥ 25	0
SO_x	≥ 100	SO_X	≥ 25	0
CO	≥ 1000	CO	≥ 250	0
$PM_{10}/PM_{2.5}$	≥ 100/100	PM/PM_{10}	≥ 25/25	0
VOC	≥ 100	VOC	≥ 25	165.80
		HAPs	≥ 5	24.74

[1] Based on actual emissions
[2] Based on potential emissions

This facility emits at the CER triggering level for VOC. Therefore, CER requirements are applicable.

The Clean Air Branch also requests annual emissions reporting for all covered sources and from those facilities that have facility-wide emissions of a single air pollutant exceeding in-house triggering levels. Annual emissions reporting is required for this facility for in-house recordkeeping purposes because it is a covered source and facility-wide emissions of VOC and HAPs exceed 25 and 5 tons per year, respectively.

Compliance Assurance Monitoring (CAM):

40 CFR Part 64

Applicability of the CAM Rule is determined on a pollutant specific basis for each affected emission unit. Each determination is based upon a series of evaluation criteria. In order for a source to be subject to CAM, each source must:

• Be located at a major source per Title V of the Clean Air Act Amendments of 1990;
• Be subject to federally enforceable applicable requirements;
• Have pre-control device potential emissions that exceed applicable major source thresholds;
• Be fitted with an “active” air pollution control device; and
• Not be subject to certain regulations that specifically exempt it from CAM.

Emission units are any part or activity of a stationary source that emits or has the potential to emit any air pollutant.

CAM is not applicable since this facility does not have equipment with an “active” air pollution control device.

Project Emissions:

Emissions were calculated using the equations and emission factors of the AP-42, Section 5.2, revised 1/95. On-loading emissions for gasoline products were calculated using whole straight run naphtha (WSR) properties since it has the highest reid vapor pressure and is the most volatile petroleum product on-loaded into the tankers and barges. A maximum loading rate of 8,000 bbl/hr was used. The storage areas were assumed to be uncleaned which resulted in an emission factor of 2.6 pounds of VOCs emitted per 1,000 gallons of product loaded (lb/1,000 gal), the most conservative of the emission factors listed in Table 5.2-2 of AP-42 Section 5.2. On-loading emissions for crude were calculated assuming the storage tank carried volatile cargo and was not cleaned. Based on these assumptions, the estimated emission factor was 1.23 lb/1,000 gallons.

The emissions from on-loading operations are from the VOC vapors being displaced into the atmosphere by the petroleum products being loaded into the storage areas. VOCs are the only pollutant emitted at the mooring terminal as there are no other emission sources.

Based on the on-loading throughput limit of 2.8 million barrels per year of gasoline products and 500,000 barrels per year of crude, the estimated annual emissions for the mooring terminal was 152.88 tons of VOCs per year. Total HAPs emissions were less than 25 tons per year, with individual HAPs contributing less than 10 tons per year.

Marine Mooring Terminal Emissions

Pollutant	Emissions [1] (lb/hr)	Emissions [1] (tpy)	Emissions [2] (lb/hr)	Emissions [2] (tpy)	Total Emissions (tpy)
VOC	873.6	152.88	73.83	12.92	165.80
Benzene	12.93	2.26			
o-Xylene	7.12	1.25			
m-Xylene	32.80	5.74			
p-Xylene	8.48	1.48			
Toluene	45.22	7.91			
Hexane	34.3	6.00			
2,2,4 Trimethyl pentane	0.157	0.03			
Cumene	0.419	0.07			
Total HAPs		24.74			

[1] Estimated maximum hourly emissions are based on WSR vessel on-loading at a rate of 8,000 bbl/hr. Annual emissions are estimated based on 2.8 million barrels of WSR loaded. HAP emissions are calculated as fractions of the VOC emissions, using a composite stream speciation profile based on a 90%/10% mixture of Low Sulfur Whole Straight Run (LS WSR) and Alaska North Slope Whole Straight Run (ANS WSR).

[2] Estimated maximum hourly emissions are based on crude oil vessel on-loading at a rate of 8,000 bbl/hr. Annual emissions are estimated based on 500,000 barrels of crude oil loaded.

Air Quality Assessment:

The facility is an area source and the only emissions are VOCs. As such, an air quality analysis is not required.

Significant Permit Conditions:

Since the facility has the potential to be a major source of HAPs, the applicant is revising the annual on-loading throughput limits of 3.6 million barrels per year for gasoline component products to 2.8 million barrels per year, but retaining the 500,000 barrels per year for crude oil products. Also, the permit prohibits any ballasting to the hydrocarbon storage areas of the vessel.

Conclusion and Recommendations:

Recommend issuing the renewal for Covered Source Permit, CSP No. 0098-01-C, subject to the significant permit conditions shown above, a 30-day public comment period and 45-day EPA review period.

Reviewer: Darin Lum
Date: 06/09