

**Minor Modification to a Covered Source**  
**Review Summary**

**Application File No.:** 0088-16

**Permit No.:** 0088-01-C

**Applicant:** Chevron Products Company

**Facility Title:** Petroleum Refinery  
Located at 91-480 Malakole Street, Kapolei, Oahu

**Mailing Address:** Chevron Products Company  
91-480 Malakole Street  
Kapolei, HI 96707

**Responsible Official:** Mr. Edward J. Wagner  
Refinery Manager  
Chevron Products Company  
Ph. (808) 682-5711

**Point of Contact:** Ms. Helen Mary Wessel  
Environmental Specialist  
Chevron Products Company  
Ph. (808) 682-2282

**Application Dates:** February 22, 2009

**Proposed Project:**

SICC 2911 (Petroleum Refining)

Per the Consent Decree No. C 03-04650 (CRB), Section I, Flaring Devices, the crude flare will be subject to NSPS Subparts A and J. The H<sub>2</sub>S limit for routinely-generated refinery fuel gas (RFG) will be 160 ppmv, except during periods of startup, shutdown or malfunction. A H<sub>2</sub>S CEMS is also required to be installed and operated to monitor the routinely-generated refinery fuel gas H<sub>2</sub>S concentration.

The permit modification application fee of \$200.00 for a minor modification was submitted by the applicant and processed.

**Equipment Description:**

1. Crude Flare (steam-assisted)
2. H<sub>2</sub>S CEMS – Yokogawa GC1000 Mark II H<sub>2</sub>S CEMS

**Applicable Requirements:**

Hawaii Administrative Rules (HAR)

Title 11, Chapter 59	Ambient Air Quality Standards
Title 11, Chapter 60.1	Air Pollution Control
Subchapter 1	General Requirements
Subchapter 2	General Prohibition
HAR 11-60.1-31	Applicability
HAR 11-60.1-32	Visible Emissions
HAR 11-60.1-38	Sulfur Oxides from Fuel Combustion
Subchapter 5	Covered Sources
Subchapter 6	Fees for Covered Sources, Noncovered Sources, and Agricultural Burning
HAR 11-60.1-111	Definitions
HAR 11-60.1-112	General Fee Provisions for Covered Sources
HAR 11-60.1-113	Application Fees for Covered Sources
HAR 11-60.1-114	Annual Fees for Covered Sources
HAR 11-60.1-115	Basis of Annual Fees for Covered Sources
Subchapter 8	Standards of Performance for Stationary Sources
HAR 11.60.1-161	New Source Performance Standards
Subchapter 9	Hazardous Air Pollutant Sources
HAR 11.60.1-174	Maximum Achievable Control Technology (MACT) Emission Standards

Federal Requirements

- 40 CFR Part 60 - Standards of Performance for New Stationary Sources (NSPS)
  - Subpart A - General Provisions
  - Subpart J - Standards of Performance for Petroleum Refineries
  - Subpart GGG – Standards of Performance for Equipment Leaks of VOC in Petroleum Refineries
- 40 CFR Part 63 – National Emission Standards for Hazardous Air Pollutants for Source Categories (MACT)
  - Subpart A – General Provisions
  - Subpart CC – National Emission Standards for Hazardous Air Pollutants for Petroleum Refineries

**Non-Applicable Requirements:**

Hawaii Administrative Rules (HAR)

- Title 11, Chapter 60.1 Air Pollution Control
  - Subchapter 7 Prevention of Significant Deterioration

Federal Requirements

- 40 CFR Part 52.21 – Prevention of Significant Deterioration of Air Quality
- 40 CFR Part 61 - National Emission Standards for Hazardous Air Pollutants (NESHAPS)

**Best Available Control Technology (BACT):**

A Best Available Control Technology (BACT) analysis is required for new covered sources or significant modifications to covered sources that have the potential to emit or a net emissions increase above significant levels as defined in HAR §11-60.1-1. Since this is a minor modification, a BACT analysis is not applicable.

**Prevention of Significant Deterioration (PSD):**

This modification is not subject to PSD review as this modification does not increase emissions.

**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 A and B point sources (as defined in 40 CFR Part 51, Subpart A), that emit at the CER triggering levels as shown in the table below:

Pollutant	Type A CER Triggering Levels <sup>1,2</sup> (tpy)	Type B CER Triggering Levels <sup>1</sup> (tpy)	Pollutant	In-house Total Facility Triggering Levels <sup>3</sup> (tpy)
NO <sub>x</sub>	≥2500	≥100	NO <sub>x</sub>	≥25
SO <sub>2</sub>	≥2500	≥100	SO <sub>2</sub>	≥25
CO	≥2500	≥1000	CO	≥250
PM <sub>10</sub> /PM <sub>2.5</sub>	≥250/250	≥100/100	PM/PM <sub>10</sub>	≥25/25
VOC	≥250	≥100	VOC	≥25
Pb		≥5	Pb	≥5
			HAPS	≥5

<sup>1</sup> Based on actual emissions

<sup>2</sup> Type A sources are a subset of Type B sources and are the larger emitting sources by pollutant

<sup>3</sup> Based on potential emissions

The Chevron Hawaii Refinery exceeds the Type A CER triggering levels. Therefore, CER requirements are applicable.

The Clean Air Branch also requests annual emissions reporting from those facilities that have facility-wide emissions of a single air pollutant exceeding in-house triggering levels. The emissions from the Chevron Hawaii Refinery exceed the in-house triggering levels and thus annual emissions reporting is required for in-house recordkeeping purposes.

**Compliance Assurance Monitoring (CAM):**

No change from Covered Source Permit No. 0088-01-C.

**Synthetic Minor Source:**

No change from Covered Source Permit No. 0088-01-C.

**Insignificant Activities:**

No change from Covered Source Permit No. 0088-01-C.

**Alternate Operating Scenarios:**

No change from Covered Source Permit No. 0088-01-C.

**Project Emissions:**

Crude Flare Emissions for 2007/2008

<b>Pollutant</b>	<b>2007 Emissions (lb/yr)</b>	<b>2008 Emissions (lb/yr)</b>	<b>2007/2008 Avg. Emissions (lb/yr)</b>	<b>2007/2008 Avg. Emissions (tpy)</b>
NO <sub>x</sub>	1118	4839	2978	1.49
VOC	2302	9963	6132	3.07
CO	6083	26330	16206	8.10
SO <sub>2</sub>	82	189	135	0.07

AP-42 Emission Factors – Table 13.5-1

<b>Pollutant</b>	<b>Emission Factor (lb/MMBtu)</b>
NO <sub>x</sub>	0.068
VOC	0.14
CO	0.37
SO <sub>2</sub>	mass balance method
PM	negligible

$$SO_2 = (S \text{ ppm} * 64/379) \text{ lb } SO_2/\text{MMSCF} * \text{flare rate MMSCF}$$

**Air Quality Assessment:**

An ambient air quality impact analysis (AAQIA) is not required for minor modifications.

**Significant Permit Conditions:**

1. The crude flare is subject to the provisions of NSPS Subparts A and J.
2. The crude flare shall be fired only on routinely-generated refinery fuel gases with a hydrogen sulfide (H<sub>2</sub>S) content not to exceed 230 mg/dscm (160 ppmv), except during periods of startup, shutdown or malfunction.
3. The permittee shall install, operate and maintain a continuous emissions monitoring system (CEMS) for continuously monitoring and recording the concentration (dry basis) of H<sub>2</sub>S in routinely-generated refinery fuel gases before being burned in the crude flare.
4. Excess emissions reporting of the concentration of H<sub>2</sub>S in routinely-generated refinery fuel gases.

**Conclusion and Recommendations:**

Recommend issuance of the minor modification to existing Covered Source Permit No. 0088-01-C based on the additional federal permit requirements from the Consent Decree. A 45-day EPA review period is also required.

Reviewer: Darin Lum  
Date: 9/09