

Significant Modification to a Covered Source Permit
Review Summary

Application File No.: 0382-06

Permit No.: 0382-02-C

Applicant: Mid Pac Petroleum, LLC

Facility Title: Kawaihae Petroleum Bulk Loading Terminal
61-3651 Kawaihae Road
Kawaihae, Hawaii 96743
UTM 204,044 E 2,218,162 N

Mailing Address: Mid Pac Petroleum, LLC
P.O. Box 44677
Kamuela, HI 96743

Responsible Official: Mr. Jim R. Yates
President
Mid Pac Petroleum, LLC
677 Ala Moana Boulevard, Suite 625
Honolulu, HI 96813
(808) 535-5937

Point of Contact: Mr. Tim Clark
Terminal Supervisor
P.O. Box 44677
Kamuela, HI 96743
(808) 882-7311

Application Date: March 17, 2008
Additional information dated May 9, 2008

Proposed Project:

SICC 5171 (Petroleum Bulk Stations and Terminals)

The Kawaihae Terminal proposes to offload, store, and load jet fuel in addition to diesel, and to increase the permitted throughput limit of diesel/jet fuel from 212,000 to 728,000 barrels per year on a rolling 12-month basis. These changes will allow Mid Pac to increase its operational flexibility and expand its current market.

After the project is implemented, the terminal will process either jet fuel or diesel at any given time, and will continue to process gasoline. Mid Pac plans to switch from processing diesel to jet fuel in the near future, but wishes to preserve its ability to switch back to diesel.

The proposed project will affect the operation of existing equipment as follows:

Petroleum Barge Loading Headers:

The petroleum barge loading headers are permitted to offload gasoline and diesel from marine barges. Mid Pac proposes to additionally permit jet fuel, enabling the terminal to process either jet fuel or diesel at any given time. Mid Pac also proposes to increase the maximum throughput of jet fuel and diesel combined. The current throughput limit is 212,000 barrels of diesel per rolling 12-month period, and the proposed throughput limit is 728,000 barrels of jet fuel and diesel combined per rolling 12-month period.

Petroleum Truck Loading Rack:

The petroleum truck loading rack is equipped with 2 gasoline loading arms and 1 diesel loading arm. Mid Pac proposes similar permit changes as those requested for the petroleum barge loading headers: 1) permit jet fuel in addition to diesel, and 2) increase the throughput limit from 212,000 barrels of diesel per rolling 12-month period, to 728,000 barrels of jet fuel and diesel per rolling 12-month period.

Storage Tank 4134:

Fixed storage tank 4134 is listed as an insignificant activity in Mid Pac's covered source permit. Currently, tank 4134 stores no. 2 diesel and the permit lists diesel as its only commodity. Mid Pac proposes to list jet fuel in addition to diesel.

The proposed project will also require the installation of the following new equipment in the tank farm. The purpose of the new equipment is to remove particles, water, and sediment from the jet fuel in order to satisfy product specifications.

Pre-Treatment Vessel:

A pre-treatment vessel will remove either solid particles or surfactants from the inbound jet fuel on the upstream side of tank 4134. Most of the time, the vessel will serve as a micron filter and contain filter elements for removing solid particles. On infrequent occasions, when a barge delivers jet fuel contaminated with surfactants, this vessel can be converted to a clay treater by replacing the filter elements with clay cartridges for absorbing surfactants.

Transfer Pump:

A new transfer pump will be installed at the discharge of tank 4134 to 1) overcome the pressure drop associated with the new Filter/Separator System downstream, and 2) increase the jet fuel loading rate to 600 gpm at the tank truck rack. The increased loading rate will decrease the jet fuel loading time and increase efficiency for the trucking companies.

Filter/Separator System:

The rundown from tank 4134 will be pumped into a filter/separator system designed to remove water and sediment. The system will consist of two small vessels, each containing an internal filter to remove sediment and an internal coalescer to remove water. The two vessels will be arranged in parallel and situated on a concrete pad next to gasoline tank 4133 in the northeast end of the tank farm. At this time, Mid Pac plans to operate only one vessel while the other is maintained on standby for use during periods of maintenance and repair.

Tank Water Removal System:

Tank 4134's two tank water draw drains will connect to an adjacent skid-mounted system consisting of a small sump separator and electric pump. The purpose of this system is to maintain tank 4134 free of water. As needed, Mid Pac will drain some jet fuel into the small collection tank and allow it to settle. Any water that separates out will be collected and properly disposed. The water-free jet fuel will be pumped back into tank 4134 and recovered in the process.

Portable Storage Tanks:

Two small portable storage tanks will be used to store and handle: 1) water and sediment drained from the filter/separator vessels, and 2) jet fuel emptied from sample containers after visual inspection.

Operating Schedule:

The Kawaihae Terminal currently operates 8 hours per day, 5 days per week, and halfday on each Saturday, 52 weeks a year. After entering the jet fuel market, Mid Pac expects to increase its operating hours to 12 to 14 hours per day, 7 days per week.

Equipment Description:

Loading Units

Equipment	Product Dispensed	Year Built
Petroleum Truck Loading Rack	Gasoline/Ethanol Diesel No. 2/Jet Fuel	1960
Barge Loading Headers	Gasoline Diesel No. 2/Jet Fuel	1960

Maximum Allowable Throughputs of Loading Units

Product	Petroleum Truck Loading Rack	Barge Loading Headers
Gasoline	333,000 barrels per year	333,000 barrels per year
Ethanol	37,000 barrels per year	n/a
Diesel No. 2/Jet Fuel	728,000 barrels per year	728,000 barrels per year

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 11-60.1-39	Storage of volatile organic compounds
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

Non-applicable Requirements:

Hawaii Administrative Rules (HAR)

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

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)
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
Subpart XX	Standards of Performance for Bulk Gasoline Terminals
40 CFR Part 63	National Emission Standards for Hazardous Air Pollutants for Source Categories (Maximum Achievable Control Technologies (MACT) Standards)
Subpart R	National Emission Standards for Gasoline Distribution Facilities (Bulk Gasoline Terminals and Pipeline Breakout Stations)

New Source Performance Standards (NSPS):

The existing petroleum truck loading rack will not be subject to NSPS Subpart XX - Standards of Performance for Bulk Gasoline Terminals because the increase in the permitted throughput limit of diesel/jet fuel from 212,000 to 728,000 barrels per year on a rolling 12-month basis does not trigger reconstruction or modification under NSPS.

Modification is not triggered since the loading of diesel/jet fuel is not an affected facility under NSPS Subpart XX., which only applies to the loading of gasoline into gasoline tank trucks. In addition, increases in production rates are not considered a NSPS modification per 40 CFR §60.14(e)(2) if that increase can be accomplished without capital expenditure.

The existing fixed roof storage tank no. 4134 will not be subject to NSPS 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 because the storage of jet fuel in the tank does not trigger reconstruction or modification under NSPS.

The storing of jet fuel in tank no. 4134 does not trigger modification under NSPS since the storage of jet fuel is not considered a NSPS modification per 40 CFR §60.14(e)(4).

Prevention of Significant Deterioration (PSD):

This source 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.

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. The table below shows that a BACT analysis is not required since the net emissions increase is less than the significant level for VOC.

Pollutant	Pre-Project 2004-2005 Actual Emissions (tpy)	Post-Project Potential Emissions (tpy)	Net Emissions Change (tpy)	Significant Level (tpy)	Significant?
VOC	31.25	58.18	26.93	40	No

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 shown 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)
VOC	≥100	VOC	≥25	83.97
		HAPs	≥5	1.583

¹ Based on actual emissions

² Based on potential emissions

This facility does not emit at the CER triggering levels. Therefore, CER requirements are not applicable.

Although CER for the facility is not triggered, the Clean Air Branch requests annual emissions reporting from those facilities that have facility-wide emissions of a single pollutant exceeding in-house triggering levels. Since the emissions of VOC are greater than 25 tpy, annual emissions reporting for the facility will be required for in-house recordkeeping purposes.

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.

Compliance Assurance Monitoring (CAM) is not applicable since the facility is not a major source.

Synthetic Minor Source:

This facility is a synthetic minor source as the facility would be classified as a major source without operational limitations, however, is classified as a non-major source through the use of operational limitations on the throughput of the petroleum truck loading rack and barge loading headers.

Insignificant Activities:

1. Per HAR §11-60.1-82(f)(1)
Two (2) portable storage tanks (300 gallons each) - additive storage
2. Per HAR §11-60.1-82(f)(7)
 - i. One (1) fixed roof tank no. 4134 (18,100 bbls) - low sulfur diesel and jet fuel storage
 - ii. Ethanol off-loading skid consisting of a hose, pump header, and related piping
 - iii. Jet fuel treating equipment consisting of a pre-filter, filter/separator system, tank water removal system and two (2) portable storage tanks.

Alternative Operating Scenarios:

None proposed.

Project Emissions:

The proposed project will increase facility VOC emissions as a result of: 1) jet fuel having a slightly higher vapor pressure than diesel, 2) an increase in the terminal throughput of jet fuel and diesel combined, 3) an increase in the number of valves, flanges, and other fugitive components. Potential emissions will increase from tank no. 4134, the tank truck loading rack, and the new fugitive components associated with the new equipment. Potential emissions at the petroleum barge loading headers themselves (excluding fugitive emissions) will remain zero since the offloading of products does not generate emissions.

The table below summarizes the project’s VOC emissions impact, comparing actual emissions from the two preceding years of 2004 and 2005 to future potential emissions. Calendar years 2004 and 2005 were chosen to represent baseline emissions in lieu of the most recent past two

years because gasoline throughput rates were unusually low in 2006 and 2007 due to problems created by the earthquake on October 15, 2006.

Project Emissions

Equipment	Pre-Project 2004-2005 Actual VOC Emissions (tpy)	Post-Project Potential VOC Emissions (tpy)	VOC Emissions Change (tpy)
Barge Loading Headers	0	0	0
Tank 4134	0.12	0.68	0.56
Truck Loading Rack	31.0	57.34	26.34
Fugitive Components	0.13	0.16	0.03
Total	31.25	58.18	26.93

Potential Emissions - Facility

Source	Potential Emissions, VOC (tpy)	Potential Emissions, HAPs (tpy)
Internal Floating Roof Tanks Nos. 4130, 4132, 4233 (gasoline)	7.04 ^{1,2}	
Internal Floating Roof Tank No. 4129 (ethanol)	0.30 ^{1,2}	0.003 ¹
Fixed Roof Tank No. 4134 (diesel/jet)	0.68 ²	
Bottom Loading Rack (gasoline)	56.09 ^{1,3,4}	
Bottom Loading Rack (ethanol)	0.75 ^{1,3,5}	
Bottom Loading Rack (diesel/jet)	0.50 ^{1,3,6}	
Barge Loading Headers (gasoline)	18.18 ^{1,3,7,10}	
Barge Loading Headers (diesel/jet)	0.26 ^{1,3,8,10}	
Fugitive Sources (gasoline)	0.16	
Ethanol Tank Truck Off-Loading Skid (ethanol)	0.01 ¹	0.0 ¹
Total Emissions (gasoline)	81.47	1.58 ^{1,9}
Total Emissions (gasoline, ethanol, diesel, jet)	83.97	1.583

¹ Emissions data from Significant Modification Application No. 0382-05

² EPA Tanks 4.0 used to estimate tank emissions

³ AP-42 Section 5.2.2.1(1/95) used to estimate emissions from loading operations

⁴ Based on a throughput of 333,000 bbl/yr x 336.90 lb/1000 bbl = 112,187.61 lb/yr = 56.09 tpy

⁵ Based on a throughput of 37,000 bbl/yr x 40.34 lb/1000 bbl = 1,492.63 lb/yr = 0.75 tpy

⁶ Based on a throughput of 728,000 bbl/yr x 1.38 lb/1000 bbl = 1,006.45 lb/yr = 0.50 tpy

⁷ Based on a throughput of 333,000 bbl/yr x 109.2 lb/1000 bbl = 36,363.60 lb/yr = 18.18 tpy

⁸ Based on a throughput of 728,000 bbl/yr x 0.721 lb/1000 bbl = 524.89 lb/yr = 0.26 tpy

⁹ Based on a 10% reduction of HAPS due to use of ethanol = 0.9 x 1.75 tpy = 1.58 tpy

¹⁰ Although the barge loading headers are designed only to offload barges which results in zero emissions, the emissions from the loading of barges were calculated for conservative purposes.

Air Quality Assessment:

An Ambient Air Quality Impact Assessment (AAQIA) was not performed since fugitive emissions are not required to be modeled and there is no ambient air standard for VOCs.

Significant Permit Conditions:

1. The diesel/jet fuel throughput limits for the petroleum truck loading rack and petroleum barge loading headers shall be changed to 728,000 instead of 212,000 barrels per rolling 12-month period.
2. The following were added to the insignificant activities list for the facility:
 - i. Fixed roof tank no. 4134 (18,100 bbls) will be allowed to store jet fuel in addition to low sulfur diesel.
 - ii. Jet fuel treating equipment consisting of a pre-treatment vessel, transfer pump, filter/separator system, tank water removal system and two (2) portable storage tanks were added.

Conclusion and Recommendations:

Recommend reissuing Covered Source Permit (CSP) No. 0382-02-C for the significant modification application submitted, subject to the significant permit conditions noted above. This permit shall supersede Covered Source Permit (CSP) No. 0382-02-C issued on June 28, 2006 in its entirety. A 30-day public comment period and 45-day EPA review period are also required.

Reviewer: Darin Lum
Date: 6/2008