

Minor Modification to a Temporary Covered Source
Review Summary

Application No: 0626-02

Permit No.: 0626-01-CT

Applicant: Kiewit Pacific Company

Facility Title: 875 TPH Portable Stone Quarrying and Processing Plant with One (1) 1,100 kW Diesel Engine Generator

Location: Various Temporary Sites, State of Hawaii
Initial Location: Koloa, Kauai
450,980 m E, 2,421,500 m N (NAD-83)

Responsible Official: Ben Prock
Hawaii Area Manager
(808) 674-1088

Contact Person: Ben Prock
Hawaii Area Manager
(808) 674-1088

Fred Peyer
EMET
(808) 671-8383

Mailing Address: Kiewit Pacific Company
1001 Kamokila Blvd., Ste. 305
Kapolei, Hawaii 96707

Application Date: April 27, 2007
Additional information dated May 18, 2007, May 23, 2007 and June 1, 2007

Proposed Project:

SICC:1442 (Construction Sand and Gravel)

Kiewit Pacific Company is proposing to modify its existing 357 TPH portable stone quarrying and processing plant with a 1100 kW diesel engine generator permitted under Temporary Covered Source Permit No. 0626-01-CT. This minor modification consists of the following changes:

- Replace the existing 357 TPH Pioneer jaw crusher with a 875 TPH Pioneer jaw crusher;
- Add a 400 TPH Canica impact crusher;
- Add a 400 TPH Symons cone crusher;
- Add a tandem triple deck screen;
- Reduce the maximum operating hours of the portable stone processing plant and

PROPOSED

- diesel engine generator from 2,080 hours/yr to 710 hours/yr; and
- Permit the existing 300 TPH Torgensen impact crusher only as a backup crusher for either the Canica or Symons crusher.

By reducing the total hours of operation for the portable stone processing plant, the total emissions of PM remained the same or was less, thus meeting the definition of “minor modification”. The emissions from the diesel engine generator were also reduced.

The application fee for an minor modification to a temporary covered source permit of \$100.00 was processed.

Equipment Description:

Table 1 - Rock Crushing Operation

Unit	Type	Manufacturer	Model	Year	Description	Capacity	Fuel
Portable Crushing Plant	Primary Jaw Crusher	Pioneer	42" x 48"; Serial # 424869	1978	42" x 48" feed opening, crushing of basalt rock, concrete, etc.	875 TPH	driven by diesel engine generator listed below
	Impact Crusher	Canica	125, Serial # 12512690	1990	secondary crushing	400 TPH	driven by diesel engine generator listed below
	Cone Crusher	Symons	5 ½ STD, Serial # 29717	1968	secondary crushing	400 TPH	driven by diesel engine generator listed below
	Impact Crusher [backup]	Torgensen	500 HP w/ 40 HP screen back; Serial # CHX19	1989	secondary crushing	300 TPH	driven by diesel engine generator listed below
	Vibrating Screen	Cedarapids	Eljay FSG6203-32, Serial # 34C0789	2001	6' x 20' tandem triple deck screen		driven by diesel engine generator listed below
	Misc. Conveyors	--	--	--	transports material to crushers, screen and stockpiles	--	driven by diesel engine generator listed below
	Water spray system	--	--	--	nozzles located at material transfer points (see below)	--	N/A
	Diesel Engine Generator	Caterpillar	3512; Serial # 24Z02490	1989	drives crushers, screens, and conveyors	1,100 kW ^a	Diesel # 2 max 74.4 gph ^a

Air Pollution Controls:

The facility will control particulate emissions by employing water spray bars at the following

PROPOSED

material transfer points:

1. at the transfer point from the Pioneer primary jaw crusher to conveyor # 29-1911;
2. at the transfer point from the Pioneer primary jaw crusher to conveyor # 29-1027;
3. at the transfer point from conveyor # 29-0986 to the Canica impact crusher;
4. at the transfer point from the Symons cone crusher to conveyor # 29-1014;
5. at the transfer point from conveyor # 29-1911 to the scalped product stockpile;
6. at the transfer point from conveyor # 29-1166 to the crushed product stockpile;
7. at the transfer point from conveyor # 29-1063 to the crushed product stockpile;
8. at the transfer point from conveyor #29-0956 to conveyor # 29-0968;
9. at the transfer point from conveyor # 29-1062 to conveyor # 29-1166;
10. at the transfer point from conveyor # 29-0577 to conveyor # 29-1063; and
11. at the Torgensen impact crusher (if in use).

Stockpiles, crushing area, and unpaved truck access routes are controlled by a water truck.

Air pollution control is also achieved through the use of diesel no. 2 with a maximum sulfur content not to exceed 0.5% by weight.

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 Prohibitions

11-60.1.31 Applicability

11-60.1-32 Visible Emissions

11-60.1-33 Fugitive Dust

11-60.1-38 Sulfur Oxides from Fuel Combustion

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

Subchapter 8 - Standards of Performance for Stationary Sources

11-60.1-161(25) Standards of Performance for Non-metallic Mineral
Processing Plants

Subchapter 10 - Field Citations

New Source Performance Standards:

40 CFR Part 60 - Standards of Performance for New Stationary Sources

Subpart A - General Provisions

Subpart OOO - Standards of Performance for Non-metallic Mineral Processing Plants

40 CFR Part 60 Subpart OOO applies to portable crushed stone plants with capacities greater than 150 TPH that commence construction, reconstruction, or modification after August 31,

PROPOSED

1983. The Canica Impact Crusher, Torgensen Impact Crusher, and Cedarapids Vibrating Screen of the subject 875 TPH portable crushing plant are manufactured after this date, and thus are subject to Subpart OOO. The dates of manufacture for the equipment are shown in Table 1. Equipment for which dates are not provided are assumed to be after August 31, 1983 (worst case).

This source is not subject to PSD requirements because it is not a major stationary source, as defined in HAR Title 11, Chapter 60.1, Subchapter 7 and 40 CFR Part 52, Section 52.21.

This source is not subject to NESHAPS as there are no standards in 40 CFR Part 61 applicable to this facility (stone processing plant operations).

This source is not subject to MACT as the facility is not a major source of HAPS, covered under 40 CFR Part 63.

Best Available Control Technology (BACT):

A BACT analysis is required for new covered sources or significant modifications to covered sources that would result in a significant net emission increase as defined in HAR, §11.60.1-1. As this application is considered a minor modification to a covered source, a BACT analysis is not applicable.

Compliance Assurance Monitoring (CAM) Applicability:

CAM is not applicable to this facility since the facility is not a major source of pollutants.

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 Table 3. This facility does not emit at the CER triggering levels. Therefore, CER requirements are not applicable.

Annual emissions reporting is required since this is a covered source.

Insignificant Activities:

No change from the initial application. Diesel no. 2 fuel will be stored on site in a 1,000 gallon fuel storage tank.

Alternative Operating Scenarios:

No change from the initial application. Temporary replacement of the 1,100 kW diesel engine generator from the site is allowed with restrictions.

Major Source Applicability:

A major source as defined in §11-60.1-1 of HAR Title 11, has the potential to emit any HAP of 10 TPY or more, or 25 TPY or more of any combination of HAPs, or 100 TPY or more of any air

PROPOSED

pollutant. Calculated emissions do not meet these limits, and thus, this facility is not classified as a major source.

Synthetic Minor Applicability:

A synthetic minor source is a facility that is potentially major (as defined in HAR §11-60.1-1), but is made nonmajor through federally enforceable permit conditions (e.g., limiting the facility's hours of operation and limiting the facility's production rate). This facility is a synthetic minor based on potential emissions (NO_x and PM) of greater than "major" levels (> 100 TPY) when the facility is operated at 8,760 hr/yr. See enclosures for detailed calculations.

Project Emissions:

The emissions calculations provided on Form S-1 were checked and modified using the most current AP-42 Factors (Tables 3.4-1, 3.4-2, 3.4-3, 10/96; 11.19.2-2, 8/04; and Sections 13.2.2, 12/03; and 13.2.4, 1/95)

Emissions from the existing facility (initial covered source application no. 0626-01) are shown on Tables 3A and 4A. Emissions from the proposed facility (minor modification application no. 0626-02) are shown on Tables 3B and 4B. The results show that with the facility operating at the proposed 710 hrs/yr, emissions for all pollutants are reduced compared to the facility operating at 2080 hrs/yr.

Calculations for application nos. 0626-01 and 0626-02 can be found in the respective application enclosures (1a), (1b), (1c), (2), (3), and (4).

Table 3A – Existing Facility Emissions Summary ^{a,c}

Pollutant	Stone Processing Plant (TPY)	Agg Hand/Storage Piles (TPY)	Unpaved Roads (TPY)	1,100 kW Diesel Engine Generator (TPY)	Total Emissions including fugitive (TPY)	Significant Level (TPY)	Type B CERR Trigger Level ^b (TPY)
SO _x	-	-	-	5.45	5.45	40	100
NO _x	-	-	-	34.05	34.05	40	≥100
CO	-	-	-	9.01	9.01	100	≥1000
PM	2.13	3.16	7.64	1.06	13.99	25	-
PM ₁₀	0.84	1.49	2.26	0.61	5.20	15	≥100
PM _{2.5}	0.19	0.47	0.35	0.59	1.60	-	≥100
VOC	-	-	-	0.95	0.95	40	≥100
Pb	-	-	-	-	-	0.6	-
Be	-	-	-	-	-	0.0004	-
Hg	-	-	-	-	-	0.1	-
HAPS	-	-	-	4.62 E-02 ^d	4.62 E-02 -	-	-

^a TPY are calculated for 2,080 hr/yr of operation.

^b Based on actual emissions.

^c Based on potential emissions.

^d See Table 4A for details.

Table 3B – Proposed Facility Emissions Summary ^{a,c}

Pollutant	Stone Processing Plant (TPY)	Agg Hand/Storage Piles (TPY)	Unpaved Roads (TPY)	1,100 kW Diesel Engine Generator (TPY)	Total Emissions including fugitive (TPY)	Significant Level (TPY)	Type B CERR Trigger Level ^b (TPY)
SO _x	-	-	-	1.86	1.86	40	100
NO _x	-	-	-	11.62	11.62	40	≥100
CO	-	-	-	3.08	3.08	100	≥1000
PM	1.39	2.64	6.39	0.3618	10.78	25	-
PM ₁₀	0.55	1.25	1.89	0.2073	3.90	15	≥100
PM _{2.5}	0.10	0.39	0.29	0.2012	0.98	-	≥100
VOC	-	-	-	0.27	0.27	40	≥100
Pb	-	-	-			0.6	-
Be	-	-	-			0.0004	-
Hg	-	-	-			0.1	-
HAPS	-	-	-	1.579 E-02 ^d	1.579 E-02	-	-

^a TPY are calculated for 710 hr/yr of operation.

^b Based on actual emissions.

^c Based on potential emissions.

^d See Table 4B for details.

**Table 4A – Existing Emissions Summary for Hazardous Air Pollutants (HAPS)
and Other Trace Elements/Speciated Organic Compounds**

POLLUTANT	1,100 kW Diesel Engine General Emissions (lb/hr)	1,100 kW Diesel Engine General Emissions at 2,080 hrs/yr (TPY)
Benzene*	7.91e-03	8.23e-03
Toluene*	2.86e-03	2.98e-03
Xylenes*	1.97e-03	2.05e-03
Propylene*	2.84e-02	2.95e-02
Formaldehyde*	8.04e-04	8.36e-04
Acetaldehyde*	2.57e-04	2.67e-04
Acrolein*	8.03e-05	8.35e-05
Naphthalene*	1.33e-03	1.38e-03
PAH (Polycyclic Aromatic HC's)*	2.16e-03	2.25e-03
TOTAL HAPS* (TPY)		4.62e-02

* Hazardous air pollutants listed in the Clean Air Act and HAR 11-60.1 Subchapter 9.
PAH includes Naphthalene.

**Table 4B – Proposed Emissions Summary for Hazardous Air Pollutants (HAPS)
and Other Trace Elements/Speciated Organic Compounds**

POLLUTANT	1,100 kW Diesel Engine General Emissions (lb/hr)	1,100 kW Diesel Engine General Emissions at 710 hrs/yr (TPY)
Benzene*	7.91e-03	2.808 e-03
Toluene*	2.86e-03	1.017 e-03
Xylenes*	1.97e-03	6.984 e-04
Propylene*	2.84e-02	1.010 e-02
Formaldehyde*	8.04e-04	2.855 e-04
Acetaldehyde*	2.57e-04	9.118 e-05
Acrolein*	8.03e-05	2.851 e-05
Naphthalene*	1.33e-03	4.704 e-04
PAH (Polycyclic Aromatic HC's)*	2.16e-03	7.671 e-04
TOTAL HAPS* (TPY)		1.579 e-02

* Hazardous air pollutants listed in the Clean Air Act and HAR 11-60.1 Subchapter 9.
PAH includes Naphthalene.

Ambient Air Quality Impact Assessment:

An ambient air quality impact assessment is not required for minor modifications to covered sources since there are no emission increases. In addition, the Department of Health does not require an ambient air quality impact assessment for fugitive emissions of particulate matter, therefore, an ambient air quality impact assessment was not performed for the portable stone processing plant.

Significant Permit Conditions:

Condition: The total operating hours of the portable stone processing plant, including the diesel engine generator, shall not exceed 710 hours in any rolling twelve (12) month period.

Purpose: The applicant reduced the maximum hours of operation per year from 2080 to 710. By reducing the total hours of operation for the portable stone processing plant, the total emissions of PM remained the same or was less, thus meeting the definition of “minor modification”. The emissions from the diesel engine generator were also reduced.

Condition: 40 CFR Part 60 Subpart OOO provisions are applicable to the 400 TPH Canica impact crusher, 300 TPH Torgensen impact crusher, 6’ x 20’ Cedarapids tandem triple deck screen, and conveyors. The permittee shall comply with all applicable

PROPOSED

provisions of these standards, including all emission limits, notification, testing, monitoring and reporting requirements.

- Purpose: To specify equipment subject to 40 CFR 60, Subpart OOO, Standards of Performance for Nonmetallic Mineral Processing Plants.
- Condition: The permittee shall not cause to be discharged into the atmosphere from the 400 TPH Canica impact crusher and 300 TPH Torgensen impact crusher, fugitive emissions which exhibit greater than fifteen (15) percent opacity.
- Purpose: This condition is required by NSPS (40 CFR §60.672(a)).
- Condition: The permittee shall not cause to be discharged into the atmosphere from any transfer point on the belt conveyors or from any other affected facility any fugitive dust emissions which exhibit greater than ten (10) percent opacity.
- Purpose: This condition is required by NSPS (40 CFR §60.672(b)).
- Condition: The 300 TPH Torgensen impact crusher shall only be used as a backup secondary crusher in the event that either the 400 TPH Canica impact crusher or 400 TPH Symons cone crusher is not operating. At no time will all three secondary crushers be operating simultaneously.
- Purpose: Permit the existing 300 TPH Torgensen impact crusher only as a backup crusher for either the Canica or Symons crusher.

Conclusion and Recommendation:

Based on the information submitted by the applicant, it is the determination of the Department of Health (DOH) that the proposed minor modification of Temporary Covered Source Permit (CSP) No. 0626-01-CT will be in compliance with the all State and Federal air regulations. Therefore, recommend issuance of a new Temporary Covered Source Permit (CSP) No 0626-01-CT that will supersede the existing Temporary Covered Source Permit (CSP) No. 0626-01-CT issued on November 9, 2006 in its entirety subject to the incorporation of the significant permit conditions noted above and a 45-day EPA review.

Darin Lum
6/07