

**Significant Modification to a Temporary Covered Source  
Review Summary**

**Application No:** 0626-03

**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)

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**Application Date:** July 27, 2007

**Proposed Project:**

SICC:1442 (Construction Sand and Gravel)

Kiewit Pacific Company is proposing to modify its existing 875 TPH portable stone quarrying and processing plant with a 1,100 kW diesel engine generator permitted under Temporary Covered Source Permit No. 0626-01-CT. This significant modification increases the operating hours of the portable stone processing plant and diesel engine generator from 710 hours/yr back to the original 2,080 hours/yr that was in the initial permit.

The application fee for a significant modification to a temporary covered source permit of \$500.00 was submitted and processed.

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### 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 <sup>a</sup>	Diesel # 2 max 74.4 gph <sup>a</sup>

### Air Pollution Controls:

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

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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, 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

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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 Best Available Control Technology (BACT) analysis is applicable only to 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, §11.60.1-1. The net emissions increase based on the proposed potential emissions minus the existing potential emissions shows that a BACT analysis is not applicable since there are no net emissions increases above the significant levels. However, due to the short timeframe between the issuance date of the initial Temporary Covered Source Permit No. 0626-01-CT (11/9/06) and the submittal of significant modification application no. 0626-03 (7/27/07), a net emissions increase was also calculated based on the proposed potential emissions only. This resulted in a net emissions increase above the significant level for PM. Thus, a BACT analysis is applicable for PM. The applicant is currently addressing BACT for PM (fugitive dust) with the use of water spray bars at the material transfer points at the stone processing plant and the use of water trucks at the stockpiles, crushing area and unpaved roads. See Table 2 for details.

**Table 2 – BACT Analysis**

Pollutant	Proposed Potential Emissions <sup>1</sup> (tpy)	Existing Potential Emissions <sup>2</sup> (tpy)	Net Emissions Increase <sup>3</sup> (tpy)	Net Emissions Increase <sup>4</sup> (tpy)	Significant Levels (tpy)
NO <sub>x</sub>	34.05	11.62	22.43	34.05	40
SO <sub>2</sub>	5.45	1.86	3.59	5.45	40
CO	9.01	3.08	5.93	9.01	100
PM	31.61	10.78	20.83	<b>31.61</b>	25
PM <sub>10</sub>	11.41	3.90	7.51	11.41	15
VOC	0.95	0.27	0.68	0.95	40

<sup>1</sup> Based on 2,080 hrs/yr of operation

<sup>2</sup> Based on 710 hrs/yr of operation

<sup>3</sup> Based on Proposed Potential Emissions – Existing Potential Emissions

<sup>4</sup> Based on Proposed Potential Emissions

### 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)/In-house Reporting Applicability:

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

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### **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 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<sub>x</sub> and PM) of greater than "major" levels (> 100 TPY) when the facility is operated at 8,760 hr/yr.

### **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 initial facility (temporary covered source permit application no. 0626-01) are shown on Tables 3A and 4A. Emissions from the existing facility (minor modification application no. 0626-02) are shown on Tables 3B and 4B. Emissions from the proposed facility (significant modification application no. 0626-03) are shown on Tables 3C and 4C.

Calculations for application no. 0626-03 can be found in enclosures (1a), (1b), (1c), (2), (3), and (4).

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**Table 3A – Initial Facility Emissions Summary <sup>a,c</sup>**

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)	Type B CERR Trigger Level <sup>b</sup> (TPY)	In-house Total Facility Trigger Level (TPY)
SO <sub>x</sub>	-	-	-	5.45	5.45	≥100	≥25
NO <sub>x</sub>	-	-	-	34.05	34.05	≥100	≥25
CO	-	-	-	9.01	9.01	≥1000	≥250
PM	2.13	3.16	7.64	1.06	13.99	-	≥25
PM <sub>10</sub>	0.84	1.49	2.26	0.61	5.20	≥100	≥25
PM <sub>2.5</sub>	0.19	0.47	0.35	0.59	1.60	≥100	
VOC	-	-	-	0.95	0.95	≥100	≥25
Pb	-	-	-	-	-	-	
Be	-	-	-	-	-	-	
Hg	-	-	-	-	-	-	
HAPS	-	-	-	4.62 E-02 <sup>d</sup>	4.62 E-02	-	≥5

<sup>a</sup> TPY are calculated for 2,080 hr/yr of operation.

<sup>b</sup> Based on actual emissions.

<sup>c</sup> Based on potential emissions.

<sup>d</sup> See Table 4A for details.

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**Table 3B – Existing Facility Emissions Summary<sup>a,c</sup>**

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)	Type B CERR Trigger Level <sup>b</sup> (TPY)	In-house Total Facility Trigger Level (TPY)
SO <sub>x</sub>	-	-	-	1.86	1.86	≥100	≥25
NO <sub>x</sub>	-	-	-	11.62	11.62	≥100	≥25
CO	-	-	-	3.08	3.08	≥1000	≥250
PM	1.39	2.64	6.39	0.3618	10.78	-	≥25
PM <sub>10</sub>	0.55	1.25	1.89	0.2073	3.90	≥100	≥25
PM <sub>2.5</sub>	0.10	0.39	0.29	0.2012	0.98	≥100	
VOC	-	-	-	0.27	0.27	≥100	≥25
Pb	-	-	-			-	
Be	-	-	-			-	
Hg	-	-	-			-	
HAPS	-	-	-	1.579 E-02 <sup>d</sup>	1.579 E-02	-	≥5

<sup>a</sup> TPY are calculated for 710 hr/yr of operation.

<sup>b</sup> Based on actual emissions.

<sup>c</sup> Based on potential emissions.

<sup>d</sup> See Table 4B for details.

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**Table 3C – Proposed Facility Emissions Summary <sup>a,c</sup>**

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)	Type B CERR Trigger Level <sup>b</sup> (TPY)	In-house Total Facility Trigger Level (TPY)
SO <sub>x</sub>	-	-	-	5.45	5.45	100	≥25
NO <sub>x</sub>	-	-	-	34.05	34.05	≥100	≥25
CO	-	-	-	9.01	9.01	≥1000	≥250
PM	4.08	7.74	18.73	1.06	31.61	-	≥25
PM <sub>10</sub>	1.61	3.66	5.53	0.61	11.41	≥100	≥25
PM <sub>2.5</sub>	0.30	1.15	0.85	0.59	2.89	≥100	
VOC	-	-	-	0.95	0.95	≥100	≥25
Pb	-	-	-			-	
Be	-	-	-			-	
Hg	-	-	-			-	
HAPS	-	-	-	4.62 E-02 <sup>d</sup>	4.62 E-02	-	≥5

<sup>a</sup> TPY are calculated for 2,080 hr/yr of operation.

<sup>b</sup> Based on actual emissions.

<sup>c</sup> Based on potential emissions.

<sup>d</sup> See Table 4C for details.

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

<b>POLLUTANT</b>	<b>1,100 kW Diesel Engine General Emissions (lb/hr)</b>	<b>1,100 kW Diesel Engine General Emissions at 2,080 hrs/yr (TPY)</b>
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
<b>TOTAL HAPS* (TPY)</b>		<b>4.62e-02</b>

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

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

<b>POLLUTANT</b>	<b>1,100 kW Diesel Engine General Emissions (lb/hr)</b>	<b>1,100 kW Diesel Engine General Emissions at 710 hrs/yr (TPY)</b>
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
<b>TOTAL HAPS* (TPY)</b>		1.579 e-02

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

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

<b>POLLUTANT</b>	<b>1,100 kW Diesel Engine General Emissions (lb/hr)</b>	<b>1,100 kW Diesel Engine General Emissions at 2,080 hrs/yr (TPY)</b>
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
<b>TOTAL HAPS* (TPY)</b>		<b>4.62e-02</b>

\* 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 with the diesel engine generator operating at 2,080 hours/yr was submitted by the applicant in the initial application (temporary covered source permit application no. 0626-01) which showed compliance with the State and Federal Ambient Air Quality Standards. In addition, since the Department of Health does not require an ambient air quality impact assessment for fugitive emissions of particulate matter, an ambient air quality impact assessment was not required to be performed for the portable stone processing plant at 2,080 hours/yr operation.

**Significant Permit Conditions:**

Condition: The total operating hours of the portable stone processing plant, including the diesel engine generator, shall not exceed 2,080 hours in any rolling twelve (12) month period.

Purpose: The applicant proposed to increase the maximum hours of operation per year from 710 to 2,080.

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### **Conclusion and Recommendation:**

Based on the information submitted by the applicant, it is the determination of the Department of Health (DOH) that the proposed significant 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 significant modification to Temporary Covered Source Permit (CSP) No 0626-01-CT, subject to the incorporation of the significant permit condition noted above, a 30-day public comment period and a 45-day EPA review.

Darin Lum  
9/07