

**PERMIT APPLICATION REVIEW  
TEMPORARY COVERED SOURCE PERMIT NO. 0580-01-CT  
Application for Renewal No. 0580-04**

**Company:** Kalaka Nui, Inc.

**Mailing Address:** 92-111 Ulele Place  
Kapolei, Hawaii 96707

**Facility:** Crushing and Screening Plants

**Location:** Various Temporary Sites, State of Hawaii

**Initial Location:** 91-558 Awakumoku Street, Kapolei, Oahu

**SIC Code:** 1442 (Construction Sand and Gravel)

**Responsible Official:** Ms. Nowel Dudoit-Alana  
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**Equipment:**

1. 507 TPH Komatsu jaw crushing plant (manufactured 2006), model no. BR550JG-1, serial no. 1092, with 306 hp Komatsu diesel engine, model no. SAA6D125E-2, serial no. 211713;
2. 400 TPH Spyder screening plant (manufactured 2006), model no 516T, serial no. D516TSPYF2JF1938, with exempt 110 hp Cummins diesel engine;
3. Water spray systems; and
4. Various conveyors.

**BACKGROUND**

Kalaka Nui, Inc. has submitted an application to renew its temporary covered source permit. The following pieces of equipment have been sold and will be removed from the permit:

1. 350 TPH The Screen Machine mobile impact crushing plant, model no. 4043T, serial no. D4043TCJE1789, with 300 hp Caterpillar diesel engine, model no. C-9, serial no. CLJ07720; and
2. 265 Komatsu jaw crushing plant, model no. BR380JG-1, serial no. 1339, with 180 hp Komatsu diesel engine, model no. SAA6D102E-2, serial no. 26383368.

Provisions will be incorporated into the permit to allow pre-approved location changes to its baseyard, 91-558 Awakumoku Street, Kapolei, Oahu.

The total operating hours of the 507 TPH jaw crushing plant with 306 hp diesel engine is limited to 3,400 hours in any rolling 12-month period. The total operating hours of the 400 TPH screening plant with exempt diesel engine is limited to 2,000 hours in any rolling 12-month (twelve-month) period.

There are no proposed changes to existing equipment in the design or operation of the facility.

Process

Material to be processed consists of virgin concrete, used concrete, and rocks. Material is loaded into the feeder of the crusher by an excavator or front-end loader. A magnetic separator is optional equipment to remove any metal from crushed concrete. The crushed material is conveyed onto a stockpile or is directed into the feeder of the screening plant. The screening plant separates the material according to size onto different stockpiles.

**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

11-60.1-115, Basis of Annual Fees for Covered Sources

Subchapter 8, Standards of Performance for Stationary Sources

11-60.1-161, New Source Performance Standards

Subchapter 9, Hazardous Air Pollutant Sources

Subchapter 10, Field Citations

Standard of Performance for New Stationary Sources (NSPS), 40 CFR Part 60

Subpart OOO – Standards of Performance for Nonmetallic Mineral Processing Plants is applicable to the crushing and screening plants because the maximum capacity of the crusher is greater than 150 tons/hour, and the plants were manufactured after August 31, 1983.

Subpart IIII – Standards of Performance for Stationary Compression Ignition Internal Combustion Engines is not applicable to the 306 hp diesel engine because the engine is considered a nonroad engine as defined in 40 CFR §1068.30. Subpart IIII applies to stationary internal combustion engines that are not nonroad engines.

National Emission Standards for Hazardous Air Pollutants (NESHAP), 40 CFR Part 61

This source is not subject to NESHAP as there are no standards in 40 CFR Part 61, applicable to this facility.

National Emission Standards for Hazardous Air Pollutants for Source Categories (NESHAP) (Maximum Achievable Control Technology (MACT)), 40 CFR Part 63

Subpart ZZZZ – National Emissions Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines (RICE) is not applicable to the 306 hp diesel engine because the engine is considered a nonroad engine as defined in 40 CFR §1068.30.

Subpart ZZZZ applies to stationary internal combustion engines that are not nonroad engines.

Prevention of Significant Deterioration (PSD), 40 CFR Part 52, §52.21

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

Compliance Assurance Monitoring (CAM), 40 CFR 64

This source is not subject to CAM because the facility is not a major source. The purpose of CAM is to provide a reasonable assurance that compliance is being achieved with large emissions units that rely on air pollution control device equipment to meet an emissions limit or standard. Pursuant to 40 Code of Federal Regulations, Part 64, for CAM to be applicable, the emissions unit must: (1) be located at a major source; (2) be subject to an emissions limit or standard; (3) use a control device to achieve compliance; (4) have potential pre-control emissions that are 100% of the major source level; and (5) not otherwise be exempt from CAM.

Consolidated Emissions Reporting Rule (CERR), 40 CFR Part 51, Subpart A

CERR is not applicable because emissions from the facility do not exceed CERR thresholds.

DOH In-house Annual Emissions Reporting

The Clean Air Branch requests annual emissions reporting from those facilities that have facility wide emissions exceeding in-house reporting levels and for all covered sources. Annual emissions reporting will be required because this facility is a covered source.

Best Available Control Technology (BACT)

This source is not subject to BACT analysis because this is an existing source with no proposed modifications that increase emissions. BACT analysis is required for new sources or modifications to sources that have the potential to emit or increase emissions above significant levels considering any limitations as defined in HAR, §11-60.1-1.

Synthetic Minor Source

A synthetic minor source is a facility that is potentially major, as defined in HAR, §11-60.1-1, but is made non-major through federally enforceable permit conditions. This facility is not a

synthetic minor source because potential emissions do not exceed major source thresholds when the facility is operated without limitations for 8,760 hours/year.

Greenhouse Gas Tailoring Rule

Title V permitting for greenhouse gas (GHG) emissions is not applicable because the potential to emit of CO<sub>2</sub> equivalent (CO<sub>2</sub>e) emissions are less than 100,000 tons per year. Total GHG emissions on a CO<sub>2</sub>e basis using the global warming potential (GWP) of the GHG are shown in the table below.

GHG	GWP	GHG Mass-Based Emissions (TPY)	CO <sub>2</sub> e Based Emissions (TPY)
Carbon Dioxide (CO <sub>2</sub> )	1	513	513
Total Emissions:			513

**INSIGNIFICANT ACTIVITIES / EXEMPTIONS**

Diesel Engine

The 110 hp diesel engine powering the 400 TPH screening plant is considered an insignificant activity in accordance with HAR §11-60.1-82(f)(2) because the heat input capacity is less than one (1) MMBtu/hr (5.9 gal/hr x 0.14 MMBtu/gal = 0.83 MMBtu/hr).

**ALTERNATIVE OPERATING SCENARIOS**

Diesel Engine

The permittee may replace the diesel engine with a temporary replacement unit of similar size with equal or lesser emissions if any repair reasonably warrants the removal of the diesel engine from its site (i.e., equipment failure, engine overhaul, or any major equipment problems requiring maintenance for efficient operation).

**AIR POLLUTION CONTROLS**

The crushing plant is equipped with a water spray system to control fugitive dust. Water spray will be applied as necessary to the feed material and/or screen for the 400 TPH screening plant when the screen is operated as a stand-alone unit. Water trucks/water sprays will be used as necessary to minimize fugitive dust from plant operations, material transfer points, stockpiles, and plant roads.

**PROJECT EMISSIONS**

Operating hours for the crushing plant will be limited to 3,400 hours in any rolling twelve-month (12-month) period. Operating hours for the screening plant will be limited to 2,000 hours in any rolling twelve-month (12-month) period.

Water will be used as necessary to control fugitive dust emissions

# PROPOSED

## 507 TPH Crushing Plant

The maximum capacity of the crusher was used to calculate emissions. Water sprays will be used to control PM emissions. Emissions were based on emission factors from AP-42 Section 11.19.2 (8/04) – Crushed Stone Processing and Pulverized Mineral Processing.

Storage pile emissions were based on emission factors from AP-42 Section 13.2.4 (11/06) – Aggregate Handling and Storage Piles. Vehicle travel on unpaved roads emissions were based on emission factors from AP-42 Section 13.2.2 (11/06) – Unpaved Roads. A 70% control efficiency was assumed for water suppression to control fugitive dust for unpaved roads.

<b>507 TPH Crushing Plant</b>						
Pollutant	Crushing Plant Emissions (TPY)		Storage Piles Emissions (TPY)		Unpaved Roads Emissions (TPY)	
	3,400 hr/yr	8,760 hr/yr	3,400 hr/yr	8,760 hr/yr	3,400 hr/yr	8,760 hr/yr
PM	1.6	4.1	7.3	18.9	14.6	37.6
PM-10	0.7	1.8	3.5	8.9	3.6	9.2
PM-2.5	0.2	0.4	0.5	1.4	0.4	0.9

## 400 TPH Screening Plant

The maximum capacity of the screen was used to calculate emissions. Water sprays will be used to control PM emissions. Emissions were based on emission factors from AP-42 Section 11.19.2 (8/04) – Crushed Stone Processing and Pulverized Mineral Processing.

Storage pile emissions were based on emission factors from AP-42 Section 13.2.4 (11/06) – Aggregate Handling and Storage Piles. Vehicle travel on unpaved roads emissions were based on emission factors from AP-42 Section 13.2.2 (11/06) – Unpaved Roads. A 70% control efficiency was assumed for water suppression to control fugitive dust for unpaved roads.

<b>400 TPH Screening Plant</b>						
Pollutant	Crushing Plant Emissions (TPY)		Storage Piles Emissions (TPY)		Unpaved Roads Emissions (TPY)	
	2,000 hr/yr	8,760 hr/yr	2,000 hr/yr	8,760 hr/yr	2,000 hr/yr	8,760 hr/yr
PM	1.7	7.4	3.4	14.9	6.8	29.7
PM-10	1.0	4.3	1.6	7.1	1.7	7.3
PM-2.5	0.3	1.1	0.2	1.1	0.2	0.7

## 306 hp Komatsu Diesel Engine

The 306 hp diesel engine powering the 507 TPH crushing plant is fired on fuel oil no. 2 with a maximum sulfur content of 0.5% by weight. CO, NO<sub>x</sub>, VOC, and PM emissions were based on manufacturer's data. The mass balance method was used to determine SO<sub>2</sub> emissions. HAP emissions were based on emission factors from AP-42 Section 3.3 (10/96) – Gasoline and Diesel Industrial Engines.

## PROPOSED

<b>306 hp Komatsu Diesel Engine</b>			
Pollutant	Emissions (lb/hr)	Emissions (TPY) [3,400 hr/yr]	Emissions (TPY) [8,760 hr/yr]
CO	0.37	0.63	1.62
NO <sub>x</sub>	3.10	5.27	13.58
SO <sub>2</sub>	0.93	1.58	4.08
PM	0.33	0.56	1.45
PM-10	0.33	0.56	1.45
PM-2.5	0.33	0.56	1.45
VOC	0.19	0.32	0.83
HAPs	0.007	0.012	0.031

### Total Emissions

Total facility emissions are summarized in the table below.

<b>Total Facility Emissions and Trigger Levels (TPY)</b>					
Pollutant	Emissions (With Limits)	Emissions (No Limits)	BACT Significant Level	CERR Threshold	DOH Level
CO	0.6	1.6	100	1000	250
NO <sub>x</sub>	5.3	13.6	40	100	25
SO <sub>2</sub>	1.6	4.1	40	100	25
PM	14.6 (36.0*)	46.8 (114.1*)	25	-	25
PM-10	7.3 (12.5*)	23.5 (39.9*)	15	100	25
PM-2.5	1.7 (2.2*)	5.3 (7.0*)	-	100	-
VOC	0.3	0.8	40	100	25
HAPs	0.01	0.03	-	-	5

\* Including emissions from unpaved roads.

### **AIR QUALITY ASSESSMENT**

An ambient air quality impact analysis (AAQIA) is generally required for new or modified sources to demonstrate compliance with State and National ambient air quality standards. An ambient air quality impact analysis is not required for this permit renewal because there are no modifications proposed.

### **SIGNIFICANT PERMIT CONDITIONS**

1. The total operating hours of the 507 TPH crushing plant, as represented by the total operating hours of the 306 hp diesel engine, shall not exceed 3,400 hours in any rolling twelve-month (12-month) period.
2. The total operating hours of the 400 TPH screening plant, as represented by the total operating hours of the exempt 110 hp diesel engine, shall not exceed 2,000 hours in any rolling twelve-month (12-month) period.

## **PROPOSED**

3. The 306 hp diesel engine shall be fired only on fuel oil no. 2 with a maximum sulfur content not to exceed 0.5% by weight.
4. The exhaust stack of the 306 hp diesel engine shall be at a minimum height of twelve (12) feet above ground elevation.

### **CONCLUSION**

Kalaka Nui, Inc. is renewing its covered source permit to operate crushing and screening plants. Two of its crushing plants have been sold and will be removed from the permit. There are no other proposed changes in this permit renewal. Water sprays will be used to control fugitive emissions. Potential emissions were based on the maximum rated capacities of the equipment. Recommend issuance of the covered source permit subject to the incorporation of the significant permit conditions, 30-day public comment period, and 45-day Environmental Protection Agency review period.

Mark Saewong  
May 14, 2012