

PROPOSED

**PERMIT APPLICATION REVIEW
TEMPORARY COVERED SOURCE PERMIT NO. 0766-01-CT
Application for Initial Permit No. 0766-01**

Company: B.J. Rees's Enterprise

Mailing Address: P.O. Box 358
Coalville, Utah 84017

Facility: 925 TPH Stone Processing Plant

Location: Various Temporary Sites, State of Hawaii

Initial Location: Pohakuloa Training Area (PTA) Quarry, Pohakuloa, Hawaii

SIC Code: 1442 (Construction Sand and Gravel)

Responsible Official: Mr. Blaine J. Rees
Owner
(435) 336-5345

Contact: Mr. Charles M. Olson
Manager
(435) 336-5345

Equipment:

925 TPH Stone Processing Plant with:

1. Trio vibrating grizzly feeder, serial no. TF5220011Y (equipment no. 1196);
2. 925 TPH Trio jaw crusher, serial no. TJ32X54 (equipment no. 1195);
3. 800 TPH JCI 3-deck screen (6' x 20'), serial no. 99H05A32 (equipment no. 997);
4. 500 TPH Canica impact crusher, model no. VSI 105, serial no. 105 148-96 (equipment no. 1371);
5. 500 TPH Nordberg cone crusher, model no. G-Cone, serial no. 20552793 (equipment no. 1211);
6. 800 TPH JCI 3-deck screen (6' x 20'), serial no. S041299 (equipment no. 1278);
7. 500 TPH Canica impact crusher, model no. VSI 105, serial no. 105176 (equipment no. 1065);
8. 800 TPH ElJay 3-deck screen (6' x 20'), serial no. 43A0491 (equipment no. 854);
9. 1,500 kW Caterpillar diesel engine generator, model nos. SR4B (generator set) and 3512 (engine), serial no. SBG00604;
10. Water spray systems; and
11. Various conveyors.

BACKGROUND

B.J. Rees's Enterprise has submitted an application for an initial temporary covered source permit. The stone processing plant consists of various crushers and screens, powered by a 1,500 kW diesel engine generator. The total operating hours of the proposed stone processing plant will be limited to 3,200 hours in any rolling twelve-month (12-month) period. Water spray systems and a water truck will be used to control fugitive emissions.

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 crushers and screens because the maximum capacity of the facility is greater than 150 tons/hour, and the crushers and screens were manufactured after August 31, 1983.

Subpart IIII – Standards of Performance for Stationary Compression Ignition Internal Combustion Engines is applicable to the 1,500 kW diesel engine generator (manufactured 1/19/2008) because the unit commenced construction after July 11, 2005, and was manufactured after April 1, 2006. For purposes of Subpart IIII, the date that construction commences is the date the engine is ordered. Manufacturer's specifications indicate the diesel engine generator is EPA Tier 2 certified.

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.

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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 applicable to the 1,500 kW diesel engine generator because the engine is a new stationary RICE. A stationary RICE located at an area source of HAP emissions is new if you commenced construction of the stationary rice on or after June 12, 2006. A new stationary RICE located at an area source must meet the requirements of this part by meeting the requirements of 40 CFR Part 60 Subpart IIII. No further requirements apply for such engines under this part.

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 subject to BACT analysis because potential PM emissions exceed significant levels. 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. The applicant proposes to control particulate emissions from crushing and screening operations with installed water sprays and a water truck. Water sprays are considered BACT for this type of operation.

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 a synthetic minor source because potential emissions for NO_x 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 CO₂ equivalent (CO₂e) emissions are less than 100,000 tons per year. Total GHG emissions on a CO₂e basis using the global warming potential (GWP) of the GHG are shown in the table below.

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GHG	GWP	GHG Mass-Based Emissions (TPY)	CO ₂ e Based Emissions (TPY)
Carbon Dioxide (CO ₂)	1	3620	3620
Total Emissions:			3620

INSIGNIFICANT ACTIVITIES / EXEMPTIONS

There are no insignificant activities identified by the applicant.

ALTERNATIVE OPERATING SCENARIOS

Diesel Engine Generator

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

AIR POLLUTION CONTROLS

The stone processing plant is equipped with water spray systems to control fugitive dust. 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 stone processing plant will be limited to 3,200 hours in any rolling twelve-month (12-month) period. Water will be used as necessary to control fugitive dust emissions

925 TPH Stone Processing Plant

The maximum capacities of each crusher and screen were used to calculate emissions, although only a percentage of material will be processed by the secondary crushers and screens. 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.

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Pollutant	Stone Processing Plant Emissions (TPY)		Storage Piles Emissions (TPY)		Unpaved Roads Emissions (TPY)	
	3,200 hr/yr	8,760 hr/yr	3,200 hr/yr	8,760 hr/yr	3,200 hr/yr	8,760 hr/yr
PM	21.1	57.8	12.6	34.5	28.9	79.2
PM-10	7.6	20.9	6.0	16.3	7.1	19.4
PM-2.5	1.3	3.7	0.9	2.5	0.7	1.9

1,500 kW Caterpillar Diesel Engine Generator

The 1,500 kW diesel engine generator is fired on fuel oil no. 2 with a maximum sulfur content of 0.0015% by weight. Emissions were based on manufacturer's data. SO₂ and HAP emissions were based on emission factors from AP-42 Section 3.3 (10/96) – Gasoline and Diesel Industrial Engines.

1,500 kW Caterpillar Diesel Engine Generator			
Pollutant	Emissions (lb/hr)	Emissions (TPY) [2,500 hr/yr]	Emissions (TPY) [8,760 hr/yr]
CO	2.19	3.50	9.59
NO _x	24.15	38.64	105.78
SO ₂	0.02	0.04	0.10
PM	0.14	0.22	0.61
PM-10	0.13	0.22	0.59
PM-2.5	0.13	0.20	0.55
VOC	0.53	0.85	2.32
HAPs	0.022	0.035	0.096

Total Emissions

Total facility emissions are summarized in the table below.

Total Facility Emissions and Trigger Levels (TPY)					
Pollutant	Emissions (With Limits)	Emissions (No Limits)	BACT Significant Level	CERR Threshold	DOH Level
CO	3.5	9.6	100	1000	250
NO _x	38.6	105.8	40	100	25
SO ₂	0.0	0.1	40	100	25
PM	33.9 (62.9*)	92.9 (172.1*)	25	-	25
PM-10	13.8 (20.9*)	37.8 (57.1*)	15	100	25
PM-2.5	2.4 (3.2*)	6.7 (8.6*)	-	100	-
VOC	0.8	2.3	40	100	25
HAPs	0.04	0.10	-	-	5

* Including emissions from vehicle travel on 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 the 1,500 kW diesel engine generator because the generator is the same generator that was permitted under covered source permit no. 0725-01-CT at the same location at PTA Quarry.

SIGNIFICANT PERMIT CONDITIONS

1. The total operating hours of the stone processing plant, as represented by the total operating hours of the diesel engine generator, shall not exceed 3,200 hours in any rolling twelve-month (12-month) period.

Reason: Limit NO_x emissions below the BACT threshold.

2. The diesel engine generator shall be fired only on fuel oil no. 2 with the following specifications:
 - a. Maximum sulfur content not to exceed 0.0015% by weight; and
 - b. Minimum cetane index of forty (40) or maximum aromatic content of thirty-five (35) volume percent.

Reason: 40 CFR 60 Subpart IIII fuel requirements for the diesel engine generator.

3. Incorporate provisions of 40 CFR 60 Subpart OOO.

Reason: The stone processing plant is subject to Subpart OOO.

CONCLUSION

B.J. Rees's Enterprise submitted an application for an initial temporary covered source permit to operate a stone processing plant. Actual emissions should be less than those estimated. Potential emissions were based on the maximum capacities of the crushers and screens. The secondary crushers and screens will process only a percentage of material processed by the primary crusher. Water sprays will be used to control fugitive emissions. Recommend issuance of the temporary covered source permit subject to the incorporation of the significant permit conditions, thirty-day (30-day) public comment period, and forty five-day (45-day) Environmental Protection Agency review period.

Mark Saewong
May 25, 2012