

PROPOSED

PERMIT APPLICATION REVIEW TEMPORARY COVERED SOURCE PERMIT NO. 0242-01-CT Application for Minor Modification No. 0242-17

Company: Goodfellow Brothers, Inc.

Mailing Address: P.O. Box 220
Kihei, Hawaii 96753

Facility: 780 TPH Stone Processing Plant with One (1) MW/1.36 MW Diesel Engine Generator and 400 TPH Mobile Stone Processing Plant with Integral Diesel Engines

Location: Various Temporary Sites, State of Hawaii

Initial Location: Kihei Baseyard, Kihei, Maui

SIC Code: 1429 (Crushed and Broken Stone, Not Elsewhere Classified)

Responsible Official: Mr. Dennis McCarthy
Crusher Superintendent
(808) 268-8088

Consultant: Mr. J.W. Morrow
Environmental Management Consultant
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PROPOSED PROJECT

Goodfellow Brothers, Inc. (GBI) owns and operates a variety of crushers, screens, and conveyors for stone processing activities. The equipment is used to crush basalt and other materials for construction purposes. Materials are batch-dropped into a primary crusher, forwarded via conveyors to either a stockpile or to a secondary and possibly a tertiary crusher. The stockpiles either remain throughout the duration of the project or are moved by front-end loaders.

The equipment is deployed to various locations and may be erected in several different configurations depending on the project requirements. The current permit covers most of GBI's equipment inventory of crushers, screen trailers, and diesel engine generators. The permitted inventory of equipment also includes crushers with integrated diesel engines. To allow operational flexibility, the permit lists the maximum quantity and type of equipment allowed at a site, which allows GBI to use any or all of the equipment listed. The maximum number of temporary stone processing plant locations GBI is permitted to operate simultaneously within the State of Hawaii is twenty-five (25).

PROPOSED

Proposed Modification

GBI has submitted an application for minor modification to operate a 528 TPH jaw crusher, 560 TPH cone crusher with integral 440 TPH three-deck (3-deck) screen, 881 TPH mobile screen, and 831 bhp diesel engine generator. The existing permit limits the number of specific types of equipment allowed at each temporary site and limits the operating hours at each site. The maximum ratings of the proposed equipment are less than the ratings of the permitted equipment. There will be no increase in emissions due to the proposed pieces of equipment.

The proposed modification meets the criteria for minor modification as defined in HAR §11-60.1-81. There are no increases in emissions due to the proposed pieces of equipment. There are also no changes to existing monitoring, reporting, or recordkeeping requirements.

The non-mobile/mobile plant will be limited to 1,600 hours at any one location in any rolling twelve-month (12-month) period. The mobile plant will be limited to 1,800 hours at any one (1) location in any rolling twelve-month (12-month) period. The operating hour limitations are needed for the stone processing plants to remain a non-major source.

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

EQUIPMENT DESCRIPTION

Proposed equipment:

1. 528 TPH Jaw Crusher, KPI-JCI model no. RS 3055, serial no. 412200: equipment no. K-219;
2. 560 TPH Cone Crusher, Cedarapids model no. MVP 380, serial no. TRXR380COKBKO255, with 440 TPH screen, Cedarapids 6x20 3-deck, serial no. TRX6203LDUBF1153: equipment no. K-227;
3. 881 TPH Mobile Screen, Powerscreen model no. Warrior 2400, serial no. P1D00126LDGC65081: equipment no. K-218; and
4. 831 bhp Diesel Engine Generator, Caterpillar model no. C18, engine serial no. EST01188: equipment no. LP-178.

AIR POLLUTION CONTROLS

The crushing and screening plants are 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.

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

PROPOSED

- 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 Code of Federal Regulations (CFR) Part 60

Subpart OOO – Standards of Performance for Nonmetallic Mineral Processing Plants is applicable to the crushers, screens, and conveyors because the maximum capacities of the plants are greater than 150 tons/hour and the equipment were manufactured after August 31, 1983. Equipment that commences construction, modification, or reconstruction on or after April 22, 2008, have more stringent fugitive emission opacity limits. The 528 TPH jaw crusher was manufactured in 2012, 560 TPH cone crusher with integral 440 TPH screen was manufactured in 2011, and 881 TPH mobile screen was manufactured after 2008.

Subpart IIII – Standards of Performance for Stationary Compression Ignition Internal Combustion Engines is not applicable to the diesel engines and diesel engine generators because the engines are considered nonroad engines 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 NESHAPs because there are no standards applicable to this facility.

NESHAPs for Source Categories (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 diesel engines and diesel engine generators because the engines are considered nonroad engines 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 review because it is not a major stationary source as defined in 40 CFR §52.21 and HAR, Chapter 11-60.1, Subchapter 7.

Compliance Assurance Monitoring (CAM), 40 CFR Part 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 CFR Part 64, for CAM to be applicable, the emissions unit must:

PROPOSED

(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.

Air Emissions Reporting Requirements (AERR), 40 CFR Part 51, Subpart A

AERR is not applicable because potential emissions from the facility do not exceed AERR 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 there is no net increase in potential emissions due to the modification. 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 a synthetic minor source because potential NO_x emissions exceed major source thresholds when the facility is operated without limitations for 8,760 hours/year.

INSIGNIFICANT ACTIVITIES / EXEMPTIONS

There are no insignificant activities identified by the applicant in this permit modification.

ALTERNATIVE OPERATING SCENARIOS

Diesel Engines and Diesel Engine Generators

The permittee may replace each diesel engine and 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 or diesel engine generator from its site (i.e., equipment failure, engine overhaul, or any major equipment problems requiring maintenance for efficient operation).

PROJECT EMISSIONS

There will be no changes in emissions due to the proposed 528 TPH jaw crusher, 560 TPH cone crusher with integral 440 TPH screen, 881 TPH mobile screen, and 831 bhp diesel engine generator. Total facility emissions are summarized in the table below, referenced from review nos. 0242-14 and 0242-15.

PROPOSED

Non-Mobile/Mobile Stone Processing Plant:

Total Facility Emissions and Trigger Levels (TPY)							
Pollutant	Emissions w/ 1 MW DEG (1,600 / 8,760 hr/yr)		Emissions w/ 1.36MW DEG (1,600 / 8,760 hr/yr)		BACT Significant Levels	AERR Thresholds (Type B Sources)	DOH Levels
CO	9.4	51.3	3.8	20.7	100	1000	250
NO _x	36.2	198.0	34.1	186.7	40	100	25
SO ₂	6.8	37.0	7.6	41.4	40	100	25
PM	11.8	64.4	11.4	62.3	25	-	25
PM-10	4.9	27.0	4.7	25.5	15	100	25
PM-2.5	1.7	9.4	1.4	7.9	10	100	-
VOC	0.9	5.1	1.4	7.5	40	100	25
HAPs	0.03	0.16	0.03	0.18	-	-	5

Mobile Stone Processing Plant:

Total Facility Emissions and Trigger Levels (TPY)					
Pollutant	Emissions (With Limits)	Emissions (No Limits)	BACT Significant Levels	AERR Thresholds	DOH Levels
CO	4.7	23.0	100	1000	250
NO _x	22.7	110.3	40	100	25
SO ₂	6.7	32.8	40	100	25
PM	10.8	52.7	25	-	25
PM-10	5.0	24.4	15	100	25
PM-2.5	2.2	10.6	10	100	-
VOC	0.5	2.5	40	100	25
HAPs	0.05	0.25	-	-	5

Greenhouse Gas (GHG) Emissions

Non-Mobile/Mobile Stone Processing Plant with 1.36 MW diesel engine generator:

GHG	GWP	GHG Mass-Based Emissions (TPY)	CO ₂ e Based Emissions (TPY)
Carbon Dioxide (CO ₂)	1	2311.3	2311.3
Methane (CH ₄)	25	0.10	2.5
Nitrous Oxide (N ₂ O)	298	0.02	5.9
Total Emissions:			2320

Mobile Stone Processing Plant:

GHG	GWP	GHG Mass-Based Emissions (TPY)	CO ₂ e Based Emissions (TPY)
Carbon Dioxide (CO ₂)	1	2175.9	2175.9
Methane (CH ₄)	25	0.09	2.2
Nitrous Oxide (N ₂ O)	298	0.02	5.3
Total Emissions:			2183

PROPOSED

AIR QUALITY ASSESSMENT

An ambient air quality impact analysis is not required for the proposed crushers and screens because emissions are fugitive in nature. The Department of Health air modeling guidance generally does not require an ambient air quality impact analysis for fugitive emissions. An ambient air quality impact analysis was not performed for the proposed diesel engine generator because the engine is considered to be a nonroad engine. Nonroad engines are not stationary engines and will not remain at a location for more than twelve consecutive months.

SIGNIFICANT PERMIT CONDITIONS

The updated permit conditions consist of the following (additions are underlined):

1. Revise Attachment II, Special Condition No. A.1:

- y. 528 TPH Jaw Crusher, KPI-JCI model no. RS 3055, serial no. 412200: equipment no. K-219;
- z. 560 TPH Cone Crusher, Cedarapids model no. MVP 380, serial no. TRXR380COKBKO255, with 440 TPH screen, Cedarapids 6x20 3-deck, serial no. TRX6203LDUBF1153: equipment no. K-227;
- aa. 881 TPH Mobile Screen, Powerscreen model no. Warrior 2400, serial no. P1D00126LDGC65081: equipment no. K-218; and
- bb. 831 bhp Diesel Engine Generator, Caterpillar model no. C18, engine serial no. EST01188: equipment no. LP-178.

Reason: Add the proposed equipment to the equipment list.

2. Revise Attachment II, Special Condition No. C.2:

a. Non-Mobile/Mobile Stone Processing Plant

- i. One (1) 780 TPH or smaller primary jaw crusher, equipment nos. K-76, K-185, and K-219;
- ii. One (1) 500 TPH secondary cone crusher, equipment nos. K-26, K-130, and K-187;
- iii. One (1) 700 TPH or smaller tertiary cone crusher, equipment nos. K-153, K-182, and K-227;
- iv. One (1) 450 TPH or smaller mobile tertiary cone crusher, equipment nos. K-184 and K-204;
- v. One (1) 881 TPH or smaller mobile screen, equipment nos. K-167, K-176, K-210, K-213, and K-218;
- vi. Three (3) 440 TPH or smaller screens, equipment nos. K-26 (integral with crusher), K-165, K-182 (integral with crusher), K-187 (integral with crusher), and K-227 (integral with crusher);
- vii. One (1) 1.36 MW or smaller diesel engine generator, equipment nos. LP-121, LP-130, LP-140, and LP-178;
- viii. Six (6) storage piles; and
- ix. Various conveyors and stackers.

PROPOSED

b. Mobile Stone Processing Plant

- i. Two (2) 400 TPH or smaller mobile primary/secondary jaw crushers, equipment nos. K-150, K-164, K-183, K-228, and K-229;
- ii. Two (2) 450 TPH or smaller mobile secondary cone crushers, equipment nos. K-184, and K-204;
- iii. Two (2) 881 TPH or smaller mobile screens, equipment nos. K-167, K-176, K-210, K-213, and K-218;
- iv. Six (6) storage piles; and
- v. Various conveyors and stackers.

Reason: Update the allowable equipment at each plant location.

3. Revise Attachment II, Special Condition No. C.5:

5. Fugitive Emission Limits

- a. Except as specified in Attachment II, Special Condition No. C.5.b, the permittee shall not cause to be discharged into the atmosphere from any crusher, fugitive emissions which exhibit greater than fifteen (15) percent opacity.
- b. The permittee shall not cause to be discharged into the atmosphere from equipment nos. K-228, K-229, K-219, and K-227, fugitive emissions which exhibit greater than twelve (12) percent opacity.
- c. Except as specified in Attachment II, Special Condition No. C.5.d, the permittee shall not cause to be discharged into the atmosphere from any transfer point on the belt conveyors, screening operation, or from any other affected facility, fugitive emissions which exhibit greater than ten (10) percent opacity.
- d. The permittee shall not cause to be discharged into the atmosphere from equipment nos. K-26, K-210, K-213, K-227, and K-218, fugitive emissions which exhibit greater than seven (7) percent opacity.

Reason: The proposed equipment are subject to the opacity limits of 40 CFR Part 60, Subpart OOO.

4. Revise Attachment II, Special Condition No. F.1.a:

- a. Within **sixty (60) days** after achieving the maximum production rate at which equipment nos. K-228, K-229, K-219, K-227, and K-218 will be operated, but not later than **one hundred eighty (180) days** after initial start-up, and **annually** thereafter, the permittee shall conduct or cause to be conducted performance tests on the crushers and screens to determine the opacity of emissions. Tests shall be conducted for each point subject to an opacity limit.

Reason: The proposed equipment are subject to initial performance test requirements of Subpart OOO and annual source performance tests to demonstrate continuing compliance with permit limits.

All other permit conditions of CSP No. 0242-01-CT, issued on November 21, 2014, and amended on May 6, 2015, shall not be affected and shall remain valid.

PROPOSED

CONCLUSION

Goodfellow Brothers, Inc. has submitted an application for a minor modification to add crushers, screens, and a diesel engine generator to its permit. There will be no increase in emissions. Recommend issuance of the covered source permit subject to the incorporation of the significant permit conditions and forty five-day (45-day) Environmental Protection Agency review period.

Mark Saewong
November 20, 2015