



## PROPOSED

requesting to convert the existing covered source permit from a covered to a covered/temporary covered source permit (C/CT), where the stationary plant operates as a covered source and the portable plant operates as a temporary covered source. With the conversion of CSP No. 0257-01-C to CSP No. 0257-01-C/CT, the portable stone processing plant will be able to change location under this permit, and the permit file for NSP No. 0299-01-NT will be closed.

The Halfway Bridge facility is located approximately three and a half miles west of the town of Puhī and approximately five miles west of Lihue. It is located off of Kaunualii Highway (State Highway 50) in a valley adjacent to the Kamooloa Stream, and consists of two rock processing plants (stationary and portable), associated process vehicles, and product storage stockpiles. The Stationary plant is powered by a 1,030 kilowatt (kW) diesel engine generator. The portable plant is powered by a 650 kW diesel engine generator.

Although the stationary and portable plants operate independently of one another, there will be times when both plants are operating at the Halfway Bridge location. Both plants also have identical SIC codes (1429) and common ownership. Thus, the facility was considered to be a single covered source at this location and both plants were included in the evaluation of the current covered source permit. Jas. W. Glover also operates a temporary AC plant at the Halfway Bridge location permitted under temporary covered source permit no. 0464-01-CT. However, being that less than 50% of the rock crushing product goes to the AC plant, the rock crushing facility was not considered a support facility to the AC plant.

Per the applicant, the stationary plant (except for the primary crusher, tertiary crusher No. 1, and primary, secondary, and finishing screens) was in operation prior to March 21, 1972 and thus, considered a grandfathered source. The primary screen was replaced in 1994. The replacement dates of the other equipment listed above could not be determined, but conservatively considered to be after March 21, 1972. All of the equipment that was changed out replaced units of the same size and capacity. The previous covered source application also stated that all of the stationary plant equipment (except for the primary screen) were manufactured prior to August 31, 1983.

The previous covered source application stated that all of the portable plant equipment were manufactured prior to August 31, 1983. However, the applicant was not able to determine if any of this equipment was in operation at Halfway Bridge prior to March 21, 1972. To the applicant's best knowledge, the portable plant started operation at the Halfway Bridge location sometime in the early 1990s. Without specific information, the start of operations for all of the equipment contained in the portable plant was considered to be after March 21, 1972 and thus, the portable plant was not considered to be a grandfathered source.

The portable plant was previously evaluated at the Mahaulepu Quarry and the temporary NSP issued as a 140 TPH plant with permit conditions restricting the closed side setting and product size of the plant. This covered source evaluation at Halfway Bridge reassesses the portable plant at its maximum design capacity of 660 TPH, and thus is referred to as such in the remainder of the writeup.

The application filing fee for an minor modification to a major non-toxic covered source of \$200.00 was previously processed.

## PROPOSED

The existing equipment consists of the following:

### 312 TPH Stationary Plant:

Cedarapids primary jaw crusher, Telsmith secondary cone crusher, Canica tertiary crusher, Telsmith tertiary crusher, Pioneer primary screen, Telsmith secondary screen, two Telsmith tertiary (finishing) screens, Eagle wash screw, two hoppers, several stacking and transfer conveyors, and a diesel engine generator which provides power for the plant.

### 660 TPH Portable Plant:

Cedarapids primary crusher, Telsmith secondary crusher, Canica tertiary crusher, Eljay primary and secondary screens, hopper, several stacking and transfer conveyors, and a diesel engine generator which provides power for the plant.

The existing covered source permit limits the facility to 4,500 hours for each plant (stationary and portable). With this modification, the applicant is proposing to maintain the current operational limit of 4,500 hours/year for the stationary plant and to decrease the operational limit of the portable plant from 4,500 hours/year to 2,950 hours/year. With the reduction in hours of operation, the potential emissions from the portable plant alone fall below the trigger level of 100 TPY for major source.

The facility currently includes unpaved roadways and was evaluated as such. However, during the processing of the original application, Mr. Lum of Jas. W. Glover stated that the facility was in the process of paving the haul road from the quarry area to the stone processing area. Approximately 10% of the distance is currently paved and the remainder was anticipated to be paved with returned excess asphalt. Per the application for a modification, no additional areas have been paved.

A belt conveyor system is also planned to transport raw material from the quarry area to the stone processing area. This would replace transportation of the material by haul truck and reduce fugitive emissions due to vehicle travel. The applicant plans to utilize used equipment (pre August 31, 1983) and thus would not trigger NSPS Subpart OOO.

The facility's general nature of business is processing of quarried basalt rock. Therefore, the Standard Industrial Classification (SIC) code for the facility is 1429, "Crushed and broken stone, not elsewhere classified)."

### Process:

Both the stationary and portable plants process quarried basalt rock using crushing, screening, and conveying units. Dump trucks are used to transport quarried material to each plant. Front end loaders are used to facilitate handling and management of the process and storage product piles. Independent diesel engine generators are used to provide electrical power for the operation of each processing plant.

## PROPOSED

### 1. Stationary Plant:

A front-end loader dumps raw material into the feed hopper of the stationary plant. From the hopper, the material is fed to the primary screen where it is directed to a wash screw and conveyed to stockpile PP1 (select borrow, 1 ½" to 1"), or to the primary crusher. All material fed into the stationary plant travels through the primary screen, thus limiting the feed rate of the plant to the capacity of the screen at 312 TPH. Material from the primary crusher travels along a transfer and stacking conveyor to surgepile PP2 (crusher run, 6" - 8"). The material from PP2 travels via conveyors to the secondary crusher and then to a tertiary crusher. The secondary crusher further limits the downstream production rate of the plant to 210 TPH. From the tertiary crusher, the material is conveyed to the secondary screen where it is either recirculated back to the the same tertiary crusher, a second tertiary crusher, conveyed to stockpile PP3 (#3 coarse, 7/8" - 1 1/8"), or conveyed to finishing screens 1 and 2. From the finishing screens, the material is directed via conveyor to one of four stockpiles, PP6 (chips, 3/8"), PP7 (#104 fine, sand), PP5 (#3 fine, 3/4"), or PP4 (under screens, #106, filler coarse). Water sprays are applied at the primary screen and wash screw, transfer to stockpiles PP3, 5, 6, and 7, and at the transfer from finishing screens 1 and 2 to conveyors discharging aggregate to stockpiles. Enclosures, partial enclosures, or shrouds are utilized on the secondary and both tertiary crushers, secondary screen, finishing screens, and various adjoining conveyors and transfer points to minimize fugitive dust. A second configuration for the stationary plant was proposed. This configuration would eliminate all processing after the secondary screen (both finishing screens, discharge conveyors from finishing screens, and stockpiles from the finishing screens PP5, PP6, PP7). Conveyor CS03 and stockpile PP3 would also be removed and conveyor CT08 would be run backwards transferring material from the secondary screen directly to stockpile. The first configuration was determined to be the worst case configuration and thus, only the first configuration was evaluated in this analysis.

### 2. Portable Plant:

A front-end loader dumps raw material into the grizzly feeder of the portable plant. From the feeder, the material is fed to the primary crusher and then conveyed to the primary screen. The primary crusher with a maximum design capacity of 660 TPH limits the feed rate to this portable plant. Screened material is directed via conveyor to stockpile PP1 (select borrow, 1 ½" minus) or to the secondary cone crusher. The secondary crusher limits the material at this point to 215 TPH. From the secondary crusher, the material is conveyed via conveyor to the secondary screen from where it is directed either to a recirculating loop back to the conveyor to the screen, or to either of two conveyors leading to stockpiles PP4 (various, sand) or PP3 (base coarse, 1 ½" minus). The recirculating material is transferred via conveyors to a tertiary crusher and then back to the conveyor feeding the secondary screen. Water sprays shall be applied at the primary, secondary, and tertiary crushers, primary and secondary screens, transfer from secondary screen to stockpile PP3 and PP4 feed conveyors, and conveyor transfer to stockpiles PP1, PP3, and PP4. Options to use enclosures instead of watersprays and a second configuration for the portable plant were previously proposed and evaluated, but eliminated from this evaluation per conversation with Jim Morrow (applicant's consultant). The eliminated configuration added an additional surge pile, PP2, following the secondary cone crusher, and a conveyor leading from PP2 to the secondary screen.

Re-circulation of the material in effect can limit the actual throughputs because a percentage of new material may recirculate in each plant several times before exiting the plants.

# PROPOSED

## Equipment:

### Table 1 - Stone Processing Equipment

Equipment Description	Size	Fuel	Model	Serial No.	Manufacture Date	Max. Design Capacity
<b>312 TPH Stationary Plant</b>						
Cedarapids (Primary) Jaw Crusher	NV	---	3648	43231	<8/31/83 Replaced equal size	750 TPH
Telsmith (Secondary) Cone Crusher	NV	---	48S	8422	<1972	210 TPH
Canica (Tertiary No. 1) Crusher	NV	---	125	125875-88	<8/31/83 Replace equal size	500 TPH
Telsmith (Tertiary No. 2) Gyrasphere Cone Crusher	NV	---	48FC	7755	<1972	180 TPH
Pioneer (primary) Screen (largest size 1.5" opening)	4'x12' (2-deck inclined)	---	NV	412-98G-279	7/94 Replacement equal size	312 TPH <sup>1</sup>
Telsmith (secondary) Screen (largest size 3" opening)	6'x20' (3-deck horizontal)	---	NV	313M12892	<8/31/83 Replaced equal size	1,110 TPH <sup>2</sup>
Telsmith (finishing) Screen (largest size 3/4" opening)	5'x16' (inclined)	---	NV	343M129	<8/31/83 Replaced equal size	384 TPH <sup>3</sup>
Telsmith (finishing) Screen (largest size 3/4" opening)	5'x16' (inclined)	---	NV	343M130	<8/31/83 Replaced equal size	384 TPH <sup>3</sup>
Eagle Material Washer	30"x18' SS	---	30" x 18' SS	NV	<1972	NV
Various Conveyors	NV	---	NV	NV	<1972	NV
Hoppers	NV	---	NV	NV	NV	NV
Caterpillar Diesel Engine Generator	1,030 kW	diesel #2	D-399	Eng. 35B06439 Gen. 82825-40	~1967	1,030 kW
<b>660 TPH Portable Plant (permitted on NSP No. 0299-01-NT)</b>						
Cedarapids (Primary) Jaw Crusher	30"x42" jaw	---	3042	41924	<8/31/83	660 TPH
Telsmith (Secondary) Cone Crusher	NV	---	489S	7742	<8/31/83	215 TPH
Canica (Tertiary) Vertical Shaft Impactor Crusher	NV	---	100	100104-89	<8/31/83	400 TPH
Eljay (primary) Screen (largest size 3" opening)	5'x16' (2-deck horizontal)	---	FSG 5162-26	34C1890	<8/31/83	740 TPH <sup>4</sup>
Eljay (secondary) Screen (largest size 1.5" opening)	6'x16' (3-deck horizontal)	---	FSG 6163-32	34C06900	<8/31/83	624 TPH <sup>5</sup>
Various Conveyors	NV	---	NV	NV	<8/31/83	NV
Hopper	NV	---	NV	NV	NV	NV
Caterpillar Diesel Engine Generator	650 kW	diesel #2	D-398 A	Eng. 66B810 Gen. 91039-2	~1961	650 kW
<b>Control devices</b>						
Water sprays and Enclosures	NV	---	NV	NV	NV	NV
Notes: NV = not available. 1-5 below based on Cedarapids Pocket Reference Book, 14 <sup>th</sup> Edition, Basic Screen Capacity Table/Formula (based on TPH (total feed to deck) per one square foot of square opening screen cloth). <sup>1</sup> Assuming largest size screen opening of 1.5" and screen surface area of 48 ft <sup>2</sup> . <sup>2</sup> Assuming largest size screen opening of 3" and screen surface area of 120 ft <sup>2</sup> . <sup>3</sup> Assuming largest size screen opening of 3/4" and screen surface area of 80 ft <sup>2</sup> . <sup>4</sup> Assuming largest size screen opening of 3" and screen surface area of 80 ft <sup>2</sup> . <sup>5</sup> Assuming largest size screen opening of 1.5" and screen surface area of 96 ft <sup>2</sup> .						

### **Air Pollution Control:**

Water, shrouds, and semi-enclosed building structures are the methods employed to control the emissions of particulate matter from plant process units, stockpile, and vehicle fugitive emission sources.

The stationary and portable plants employ water nozzles and spray bars to control particulate matter emissions. Water is applied directly to the process source (e.g., crushers), or to the processed product (material on conveyors and process stockpiles) to control particulate emissions except where doing so would reduce the efficiency of plant operation. In addition, the facility also employs shrouds and semi-enclosed building structures to control particulate matter emissions from several areas.

Water suppression (water sprays and/or an onsite water truck) will be used to control fugitive particulate emissions from process vehicle activities and product stockpiles. Per Mike Lum of Jas. W. Glover, approximately 10% of the haul road leading to the quarry area is currently paved and approximately 15% is watered with water sprays. As proposed by the applicant, the entire unpaved roadway will be controlled by a water spray system and/or an onsite water truck. In addition, the unpaved haul road will continue to be paved with excess asphalt returned from jobs.

The future conveyor transfer system from the quarry to the stone processing area will be controlled with water sprays and/or enclosures at each transfer point.

**PROPOSED**

**Table 2 - Stone Processing  
Air Pollution Control Equipment**

<b>Process Emission Points</b>	<b>Pollutants of Concern</b>	<b>Control Equipment</b>	<b>Control Method Efficiency</b>
<b>312 TPH Stationary Plant</b>			
Primary Screen (includes hopper to screen and screen to primary crusher); conveyors to stockpiles PP3, 5, 6, and 7; Transfer from Finishing Screens to conveyors discharging to stockpiles	PM, PM <sub>10</sub>	Water sprays	70% [AP-42 Section 11.19]
to, from and including: Secondary Crusher, Tertiary Crusher No. 1, Secondary Screen, Hopper 2, Tertiary Crusher No. 2, Finishing Screens 1 and 2; End of conveyor to fines stockpile, and material drop from Finishing Screens to holding bins	PM, PM <sub>10</sub>	Enclosures and shrouds / Partial Enclosures	70% / 35% [AP-42 Section 11.19]
to and from material wash screw	PM, PM <sub>10</sub>	Water (material saturated with water in the wash screw)	95%
conveyor to stockpile PP1	PM, PM <sub>10</sub>	Water (material saturated with water in the wash screw preceding this transfer point)	90%
<b>660 TPH Portable Plant</b>			
Primary Crusher; Primary Screen; Secondary Crusher; conveyors to stockpiles PP1, 3, and 4; Secondary Screen, transfer to Tertiary Crusher, Tertiary Crusher, transfer from Secondary Screen to stockpile PP3 and PP4 conveyors	PM, PM <sub>10</sub>	Water sprays	70% [AP-42 Section 11.19]
<b>Entire Facility</b>			
Aggregate transfer points not serviced by an enclosure or shroud and subsequent to direct water spray application points	PM, PM <sub>10</sub>	Water sprays / Water truck	70-(5*n)% where n is # of transfer points downstream of initial application [MDAQMD] <sup>a</sup>
Stockpiles	PM, PM <sub>10</sub>	Water sprays / Water truck	70% [AP-42 Section 11.19]
Unpaved roadways	PM, PM <sub>10</sub>	Water sprays and/or Water truck	70% [AP-42 Section 11.19]
All transfer points on future conveyor system from quarry to stone processing area.	PM, PM <sub>10</sub>	Water sprays and/or Enclosures	70% [AP-42 Section 11.19]
<sup>a</sup> Control efficiencies obtained from Mojave Desert Air Quality Management District (MDAQMD) Emissions Inventory Guidance for Mineral Handling and Processing Industries (October 31, 1997).			

# PROPOSED

## **Operational Limits:**

The existing covered source permit limits the facility to 4,500 hours per year for each of the plants (stationary and portable). With this modification, the applicant is proposing to maintain the current operational limit of 4,500 hours/year for the stationary plant and to decrease the operating limit for the portable plant from 4,500 hours/year to 2,950 hours/year. With this reduction in operational hours, the potential emissions from the portable plant alone, fall below the major source trigger level of 100 TPY. This limit was proposed to allow amendment of the existing covered source permit to a covered/covered temporary (C/CT) permit where the stationary plant falls under the covered portion of the permit, and the portable plant fall under the covered temporary portion of the permit. There were no other operational changes proposed.

## **Applicable Requirements:**

Hawaii Administrative Rules (HAR):

Chapter 11-59 Ambient Air Quality Standards

Chapter 11-60.1 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 10 Field Citations

## **New Source Performance Standards:**

40 Code of Federal Regulations (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 fixed or portable crushed stone plants with capacities greater than 25 TPH and 150 TPH, respectively that commence construction, reconstruction, or modification after August 31, 1983. Subpart OOO is not considered applicable to the stationary plant nor to the portable plant equipment since all of the equipment (except for the current stationary plant primary screen) were manufactured prior to August 31, 1983. The original stationary plant primary screen was replaced with an equal sized screen, and thus, is exempt (less reporting and recordkeeping requirements) per 40 CFR 60.670(d)(1). The dates of manufacture for the equipment are shown in Table 1. The material washer is not considered an affected facility under Subpart OOO.

**Prevention of Significant Deterioration (PSD):**

HAR Chapter 11-60.1 Air Pollution Control  
Subchapter 7 PSD Review

PSD review applies to new major stationary sources and major modifications to these types of sources. Major stationary sources emit or have the potential to emit 250 TPY (or 100 TPY for named source categories) of any regulated air pollutant. This facility does not belong to one of the twenty-six source categories with a 100 ton PSD limit and potential facility (stationary and portable plant combined) emissions are less than 250 tons per year (not including fugitive). PSD does not apply since this facility is not a major stationary source. Emission calculations are attached to the technical review for reference.

**Best Available Control Technology (BACT):**

A Best Available Control Technology (BACT) analysis is required for new covered sources and significant modifications to existing sources that would result in a net significant increase as defined in HAR, Section 11.60.1-1. In the previous permit analysis, significant levels were exceeded and BACT was addressed for the portable plant. The stationary and portable plants are existing sources and the facility's only proposed change is to decrease facility emissions with a reduction in the proposed hours of operation (permit limit of 4,500 hours to 2,950 hours) for the portable stone processing plant, and thus, a BACT analysis was not performed at this time.

**National Emission Standards for Hazardous Air Pollutants (NESHAP):**

40 CFR Part 61.

The facility is not subject to any NESHAP as there are no applicable standards in 40 CFR Part 61.

**Maximum Available Control Technology (MACT) Standards:**

40 CFR Part 63

The facility is not subject to any MACT Standards since the facility is not a major source of hazardous air pollutants and does not belong to a source category for which a standard has been promulgated under 40 CFR Part 63.

**Compliance Assurance Monitoring (CAM):**

40 CFR Part 64

Applicability of the CAM Rule is determined on a pollutant specific basis for each affected emission unit. Each determination is based upon a series of evaluation criteria. In order for a source to be subject to CAM, each source must:

- Be located at a major source per Title V of the Clean Air Act Amendments of 1990;
- Be subject to federally enforceable applicable requirements;
- Have pre-control device potential emissions that exceed applicable major source thresholds;
- Be fitted with an "active" air pollution control device; and
- Not be subject to certain regulations that specifically exempt it from CAM.

## PROPOSED

Emission units are any part or activity of a stationary source that emits or has the potential to emit any air pollutant.

Compliance Assurance Monitoring (CAM) is not applicable to this facility since the stone processing plants do not rely on air pollution control devices to achieve compliance with an applicable emission limit or standard. Passive control measures such as covers are not subject to CAM and per CAB discussion with Mr. Westlin from EPA, water sprays are not considered air pollution control devices. An air pollution control device must be involved with the source in order to trigger CAM applicability. However, periodic monitoring/inspection will be required to ensure that the control devices, i.e., water sprays, are working properly.

### **Consolidated Emissions Reporting Rule (CERR) and Compliance Data System (CDS):**

40 CFR Part 51, Subpart A - Emission Inventory Reporting Requirements, determines CER based on facility wide emissions of each air pollutant at the CER triggering levels as shown in the table below.

<b>Pollutant</b>	<b>CER Triggering Levels Three-Year Cycle Type B Sources (TPY)</b>	<b>In-house Total Facility Triggering Levels (TPY)</b>
NO <sub>x</sub>	≥100	≥25
SO <sub>x</sub>	≥100	≥25
CO	≥1000	≥250
PM <sub>10</sub>	≥100	≥25 (for PM also)
VOC	≥100	≥25
Pb	≥ 5	≥25

Type A trigger levels are higher than B and are not shown, as the facility does not trigger B levels.

This facility does not have any emissions at the CER triggering levels. Therefore, CER requirements are not applicable.

Although CER for the facility is not triggered, the Clean Air Branch requests annual emissions reporting from those facilities that have facility-wide emissions of a single air pollutant exceeding in-house triggering levels. Annual emissions from these facilities are used within the Department and are not inputted into the National Emissions Inventory database. Total combined facility emissions exceed the in-house NO<sub>x</sub> (80.48 TPY) triggering level (25 TPY), PM (223.24 TPY) triggering level (25 TPY), and PM<sub>10</sub> (97.33) triggering level (25 TPY). Therefore, annual emissions reporting is required. In addition, annual emissions reporting is required because this is a covered source.

## PROPOSED

Compliance Data System (CDS) is an inventory system used to track covered sources subject to annual inspections. This source is subject to CDS because it is a covered source.

### **Insignificant Activities/Exemptions:**

There are no proposed changes. Table 3 summarizes the existing facility insignificant activities and basis for exemption.

**Table 3**  
**Insignificant Activities**

<b>Equipment</b>	<b>Size</b>	<b>Exemption Basis</b>	<b>Comment</b>
Diesel fuel tank (Stationary Plant generator)	2,000 gallon	HAR 11-60.1-82(f)(1)	< 40,000 gallons, organic liquids
Diesel fuel tank (Stationary Plant generator)	2,000 gallon	HAR 11-60.1-82(f)(1)	< 40,000 gallons, organic liquids
Diesel fuel tank (Stationary Plant generator)	4,000 gallon	HAR 11-60.1-82(f)(1)	< 40,000 gallons, organic liquids
Diesel fuel tank (Portable Plant generator)	2,000 gallon	HAR 11-60.1-82(f)(1)	< 40,000 gallons, organic liquids
Diesel fuel tank (Generator day operating tank, portable)	250 gallon	HAR 11-60.1-82(f)(1)	< 40,000 gallons, organic liquids
Oil (Engine/Gear Lubrication)	450 gallon*	HAR 11-60.1-82(f)(1)	< 40,000 gallons, organic liquids
Solvent (Engine maintenance)	50 gallon*	HAR 11-60.1-82(f)(1)	< 40,000 gallons, organic liquids

*\*stored in 50 gallon drums.*

The storage tanks are exempt from permitting based on HAR 11-60.1-82(f)(1) which exempts: "Any storage tank, reservoir, or other container of capacity equal to or less than forty thousand gallons storing volatile organic compounds, except those storage tanks, reservoirs, or other containers subject to any standard or other requirement pursuant to Sections 111 or 112 of the Act." The tanks listed above are too small to be subject to any regulations promulgated pursuant to Sections 111 or 112 of the Act.

### **Alternate Operating Scenarios:**

There are no new alternate operating scenarios proposed.

### **Project Emissions:**

Facility emissions were calculated based on a 312 TPH maximum capacity of the Stationary Plant and 660 TPH maximum capacity of the Portable Plant (without closed side setting or product size limitations on production rates).

## PROPOSED

Total emissions from the portable stone processing plant are summarized in Table 4. Total facility emissions including both the stationary and portable stone processing plants are summarized in Table 5.

**Table 4 - 660 TPH Portable Stone Processing Plant Emission Estimates  
TPY<sup>a</sup>**

POLLUTANT	Stone Processing <sup>b, g</sup> TPY	650 kW DEG <sup>c</sup> TPY	TOTAL Emissions w/out fugitive TPY	Agg Hand/ Storage Piles <sup>d</sup> TPY	Unpaved Roads <sup>e</sup> TPY	Paved Roads <sup>f</sup> TPY	TOTAL Emissions including fugitive TPY
SOx	-	5.38	5.38	-	-	-	5.38
NOx	-	25.83	25.83	-	-	-	25.83
CO	-	4.34	4.34	-	-	-	4.34
PM	62.31	0.21	62.52	1.37	12.30	10.01	86.20
PM <sub>10</sub>	30.10	0.21	30.31	0.65	3.01	1.95	35.92
VOC	-	0.27	0.54	-	-	-	0.54
Pb	-	-	-	-	-	-	0
Be	-	-	-	-	-	-	0
Hg	-	-	-	-	-	-	0

<sup>a</sup> Emissions in TPY are calculated for 2,950 hr/yr of operation for the portable plant.

<sup>b</sup> Emission factors from AP-42 Table 11.19.2-2 (1/95).

<sup>c</sup> Emission factors from manufacturer's emissions data and AP-42 Table 3.4-3 (10/96).

<sup>d</sup> Emission factors from AP-42 Section 13.2.4 (1/95).

<sup>e</sup> Emission factors from AP-42 Section 13.2.2 (12/03).

<sup>f</sup> Emission factors from AP-42 Section 13.2.1 (12/03).

<sup>g</sup> Emission control factors from MDAQMD (October 31, 1997).

The emissions from the future conveyor system from the quarry to the stone processing area are not included in the total emissions including fugitive column above. The utilization of this conveyor system would eliminate or reduce the PM and PM<sub>10</sub> unpaved and paved roads emissions shown above due to the conveyor system eliminating and/or reducing the need for the use of haul trucks. The worst case where only trucks are used to transport material from the quarry to the stone processing area is shown above in the total emissions with fugitive column.

## PROPOSED

**Table 5 - Total Emission Estimates by Process for the Entire Facility  
(Stationary and Portable Plants)  
TPY<sup>a</sup>**

POL-LU-TANT	Stationary Plant Stone Processing <sup>b</sup> TPY	Portable Plant Stone Processing <sup>c,i</sup> TPY	1,030 kW DEG 1 <sup>b</sup> TPY	650 kW DEG 2 <sup>d</sup> TPY	TOTAL Emissions w/out fugitive TPY	Stationary Plant Agg Hand/Storage Piles <sup>b</sup> TPY	Portable Plant Agg Hand/Storage Piles <sup>e</sup> TPY	Stationary Plant Un-paved/Paved Roads <sup>j</sup> TPY	Portable Plant Un-paved/Paved Roads <sup>f</sup> TPY	TOTAL Emissions including fugitive TPY	CER Level TPY <sup>g</sup>	In-House/CDS Level TPY <sup>h</sup>
SOx	-	-	11.49	5.38	16.87	-	-	-	-	16.87	100	25/ 100
NOx	-	-	54.65	25.83	80.48	-	-	-	-	80.48	100	25/ 100
CO	-	-	8.93	4.34	13.27	-	-	-	-	13.27	1000	250/ 1000
PM	114.54	62.31	0.44	0.21	177.49	5.97	1.37	16.09	22.32	223.24	-	25/ 100
PM <sub>10</sub>	54.58	30.10	0.44	0.21	85.32	2.82	0.65	3.58	4.96	97.33	100	25/ 100
VOC	-	-	0.38	0.27	0.65	-	-	-	-	0.65	100	25/ 100
Pb	-	-	-	-	-	-	-	-	-	0	5	5/ 5
Be	-	-	-	-	-	-	-	-	-	0	-	-
Hg	-	-	-	-	-	-	-	-	-	0	-	-

<sup>a</sup> Emissions in TPY are calculated for 4,500 hr/yr of operation for the stationary plant and 2,950 hr/yr for the portable plant.

<sup>b</sup> Emissions from previous review located in File 0257-01, as no changes are being proposed for the stationary plant.

<sup>c</sup> Emission factors from AP-42 Table 11.19.2-2 (1/95)

<sup>d</sup> Emission factors from manufacturer's emissions data and AP-42 Table 3.4-3 (10/96).

<sup>e</sup> Emission factors from AP-42 Section 13.2.4 (1/95).

<sup>f</sup> Emission factors from AP-42 Section 13.2.1 and 2 (12/03). For consistency, unpaved Roads emissions were calculated for trucks only.

<sup>g</sup> Applicability of CER emissions reporting evaluates each pollutant emitted on a facility wide basis.

<sup>h</sup> Applicability of In-House and CDS reporting looks at emissions on a facility-wide basis and whether or not the facility is a covered source.

<sup>i</sup> Emission control factors from MDAQMD (October 31, 1997).

<sup>j</sup> Although no changes proposed for the Stationary Plant, emissions recalculated based on updated AP-42 Section 13.2.1 and 2 (12/03).

**PROPOSED**

**Table 6 - Emissions Summary for Hazardous Air Pollutants (HAPS)  
(Stationary and Portable Plants)**

<b>POLLUTANT</b>	<b>Diesel Engine Generator 1 Stationary Plant<sup>a</sup> (1,030 kW) at 4,500 hrs/yr TPY (lb/hr)</b>	<b>Diesel Engine Generator 2 Portable Plant<sup>b</sup> (650 kW) at 2,950 hrs/yr TPY (lb/hr)</b>	<b>Total Diesel Engine Generator Emissions (DEG 1 at 4,500 hrs/yr and DEG2 at 2,950 hrs/yr) TPY (lb/hr)</b>
<b>Benzene*</b>	1.734E-02 (7.708E-03)	8.123E-03 (5.507E-03)	2.546e-02 (1.322E-02)
<b>Toluene*</b>	6.280E-03 (2.791E-03)	2.941E-03 (1.994E-03)	9.221e-03 (4.785E-03)
<b>Xylenes*</b>	4.313E-03 (1.917E-03)	2.020E-03 (1.370E-03)	6.333e-03 (3.287E-03)
<b>Propylene*</b>	6.235E-02 (2.771E-02)	2.920E-02 (1.980E-02)	9.155e-02 (4.751E-02)
<b>Formaldehyde*</b>	1.763E-03 (7.837E-04)	8.259E-04 (5.599E-04)	2.589e-03 (1.344E-03)
<b>Acetaldehyde*</b>	5.632E-04 (2.503E-04)	2.638E-04 (1.788E-04)	8.270e-04 (4.291E-04)
<b>Acrolein*</b>	1.761E-04 (7.827E-05)	8.248E-05 (5.592E-05)	2.586e-04 (1.342E-04)
<b>Naphthalene*</b>	2.905E-03 (1.291E-03)	1.361E-03 (9.226E-04)	4.266e-03 (2.214E-03)
<b>PAH (Polycyclic Aromatic HC's)*</b>	4.738E-03 (2.106E-03)	2.219E-03 (1.504E-03)	6.957e-03 (3.610E-03)
<b>TOTAL HAPS* (TPY)</b>	9.753E-02 (4.334E-02)	4.568E-02 (3.097E-02)	1.432e-01 (7.431E-02)

<sup>a</sup> Emissions from previous review located in File 0257-01, as no changes are being proposed for the stationary plant.

<sup>b</sup> Emission factors from AP-42 Table 3.4-3 (10/96).

The majority of emissions are fugitive in nature, where the main pollutant is particulate matter due to stone processing. The maximum potential emissions were calculated assuming the maximum rated capacity of each piece of equipment in the facility with operations of 4,500 hours per year for the stationary plant and 2,950 hours/year for the portable plant.

## PROPOSED

Emission calculations are included for unpaved and paved roadways and stockpiles with a 70% control efficiency for fugitive dust due to water suppression. Emission control efficiencies are applied at stone processing operations and transfer points based on the Mojave Desert Air Quality Management District (MDAQMD) Guidelines (October 1997). At the point of water spray application, 70% control is assigned. At each subsequent transfer point, a factor of  $(70-5n)\%$  is assigned where  $n$  is the number of points downstream of the initial application. A control efficiency of 70% was used for the processes and transfer points located within enclosures and 35% for partial enclosures in the previous evaluation of the emissions from the stationary plant.

VOC emissions from the fuel tanks have not been included since they are expected to be negligible.

### **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. The stationary stone processing plant is a major source and not considered a synthetic minor. The portable stone processing plant is a synthetic minor with PM and PM-10 emissions greater than major without the operating hour limitation as proposed.

### **Air Quality Assessment:**

The ambient air quality standards seek to protect public health and welfare and to prevent the significant deterioration of air quality. For new facilities and facilities proposing modifications, an ambient air quality assessment is required to analyze the maximum potential pollutant concentrations generated by a source and its effect on the ambient air.

The only change the applicant is proposing to its existing facility is to reduce the operational limit for the portable stone processing plant (4,500 hours to 2,950 hours) with the conversion of the existing covered source permit to a covered/covered temporary source permit. Being that the only result of the proposed change would be a reduction in annual potential emissions, and that air quality assessments were done in concurrence with the processing of the previous permit application review, air quality analyses for the existing units were not performed at this time.

### **B. Significant Permit Conditions:**

**Condition:** The total operating hours of the 312 TPH Stationary Crushing and Screening Plant, as represented by the total combined operating hours of the diesel engine generator and the hours of stationary plant commercial electricity usage, shall not exceed four thousand five hundred (4,500) hours in any rolling twelve (12) month period.

**Purpose:** The applicant proposed to maintain 4,500 hours as the maximum hours of operation per year for the Stationary Plant to ensure the facility, operating both the stationary and portable plant complies with the ambient air quality standards for  $\text{NO}_2$  and to limit total emissions. Monitoring of the annual limitations is achieved through the use of non-resetting hour meters on each diesel engine generator and the use of non-resetting hour meters for recording the commercial electricity usage of each plant.

## PROPOSED

**Condition:** The total operating hours of the 660 TPH Portable Crushing and Screening Plant, as represented by the total combined operating hours of the diesel engine generator and the hours of portable plant commercial electricity usage, shall not exceed two thousand nine hundred and fifty (2,950) hours in any rolling twelve (12) month period.

**Purpose:** The applicant proposed to reduce the current operating limit of the portable plant from 4,500 hours/year to 2,950 hours/year, such that the potential emissions from the portable plant alone would not trigger the major source level of 100 TPY. This would allow the existing permit to be converted from a covered to a covered/temporary covered source permit. The portable plant would be allowed to change location per the temporary covered source portion of the permit and the existing NSP No. 0299-01-NT file will be closed.

### **Conclusion:**

The applicant is proposing to continue operation of the existing 312 TPH Stationary Stone Processing Plant and the 660 TPH Portable Stone Processing Plant permitted at Halfway Bridge, Puhi, Kauai and to reduce the operational limit of the portable plant from 4,500 hours per year to 2,950 hours per year. The only result from the proposed change would be a reduction in the potential annual emissions from the portable plant. The reduced limit would result in potential emissions from the portable plant alone of less than the trigger level of major source. Being that the portable plant with the new proposed limit of 2,950 hours per year is no longer considered a major source when operating alone, the applicant requested that the current covered source permit be converted to a covered/temporary covered source permit, allowing for portable plant change of locations. The stationary source and portable plant were evaluated together and fall under the covered source portion of the permit when operated at Halfway Bridge. The portable plant will fall under the temporary covered source portion of the permit when operated alone at other sites. Previous modeling analysis for the combined operation of both diesel engine generators demonstrated compliance with State and Federal AAQS.

The emission estimates summarized in Tables 5 and 6 are conservative for three reasons.

- 1) The estimates are based on the maximum capacity of each piece of equipment. These maximum capacities are significantly greater than the average historical throughput of the facility.
- 2) The emissions are calculated based on continuous operations of 4,500 hours per year for the stationary stone processing plant and 2,950 hours per year for the portable plant. The facility projected actual operations of the stationary plant at about 3,200 hours per year and the portable plant at 2,400 hours per year.
- 3) The emissions are calculated based on continuous operations of the stationary plant diesel engine generator for 4,500 hours per year and the portable plant diesel engine generator at 2,950 hours per year. There may be times when the plant will be operated by commercial electricity from the power company instead of the diesel engine generators, resulting in a decrease in diesel engine generator emissions.

## **PROPOSED**

Thus the emissions presented in Tables 5 and 6, as calculated using the maximum equipment capacities and operations at 4,500 and 2,950 hours/year, result in the calculated potential emissions being significantly greater than the predicted actual emissions.

Based on the information submitted by Jas. W. Glover, it is the determination of the Department of Health (DOH), that the proposed project will be in compliance with the Hawaii Administrative Rules (HAR), Chapter 11-60.1 and State and Federal ambient air quality standards. Therefore, issuance of a Covered Source Permit is recommended for Jas. W. Glover, subject to the incorporation of the significant permit conditions and 45-day review by EPA.

Reviewer: MR  
June 21, 2004