PERMIT APPLICATION REVIEW
TEMPORARY COVERED SOURCE PERMIT (CSP) NO. 0836-01-CT
INITIAL APPLICATION NO. 0836-01

Applicant: Road and Highway Builders, LLC

Location: Various Temporary Sites, State of Hawaii

Initial Location: Saddle Road, Hilo, Hawaii

Mailing Address: 500 Nevada Boulevard
Lovelock, Nevada 89419

Equipment:

The facility consists of the following equipment:

a. 400 TPH Hazemag Impact crusher, model no. APE 1515, serial no. HU1732, manufacture date July 1999;
b. 529 TPH JCI screen, model no. 7/20; serial no. SO61595;
c. 680 hp Cummins diesel engine generator, model no. QSX15-G9, serial no. 32050758 manufacture date July 2008, (nonroad);
d. Various conveyors; and
e. Various water spray systems.

Responsible Official: Mr. John Portman
Title: Operations Manager

Company: Road and Highway Builders, LLC
Address: 500 Nevada Boulevard
Lovelock, Nevada 89419

Phone: (775) 771-6911

PERMIT BACKGROUND

Road and Highway Builders, LLC has applied for an initial temporary covered source permit to operate a 400 TPH crusher, 529 TPH screen, and 680 HP nonroad diesel engine generator as a temporary covered source. The facility's primary operation is to process stone. The plants initial operation is for road construction on Saddle Road, Hilo. The applicant indicated that the diesel engine generator will be operated as a nonroad engine and no hour limitation was proposed.

PROCESS BACKGROUND

Process: SICC 1429 (Crushed and Broken Stone, Not Elsewhere Classified).

AIR POLLUTION CONTROLS

Water suppression will be used as necessary to control fugitive dust.

a. Crushing and screening operations are equipped with a water spray systems to abate fugitive dust.
b. A water truck is used to control fugitive dust emissions for each work site.

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 Noncovered Sources
  - 11-60.1-113 Application Fees for Noncovered Sources
  - 11-60.1-114 Annual Fees for Noncovered Sources
- Subchapter 10 – Field Citations

Standards 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 stone processing and screening plant because the maximum capacity of the crusher is greater than 150 tons/hour, and the plant was manufactured after August 31, 1983. The 400 TPH crusher was manufactured in July 1999.

40 CFR Part 60 – NSPS, Subpart IIII, Standards of Performance for Stationary Compression Ignition Internal Combustion Engines **is not applicable** to the 680 HP diesel engine generator because it is a nonroad engine. Subpart IIII applies to engines that are not nonroad engines.

40 CFR Part 63, Subpart ZZZZ, National Emissions Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines **is not applicable** to the 680 HP diesel engine generator because it will be operated as a nonroad engine as defined in 40CFR§1068.30. Subpart ZZZZ applies to stationary internal combustion engines that are not nonroad engines.

This source **is not subject** to NESHAPS (National Emission Standards for Hazardous Air Pollutants for Source Categories) (40CFR Part 61) as no hazardous air pollutants are emitted at major levels (≥ 10 TPY single hap or ≥ 25 TPY for total haps) and this source is not listed under 40 CFR Part 61 (National Emission Standards for Hazardous Air Pollutants).

This source **is not subject** to PSD (Prevention of Significant Deterioration) 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.

This source **is not subject** to CAM (compliance assurance monitoring) since the proposed equipment is not classified as a major source (criteria pollutant > 100 TPY); has no pre-control device potential emissions exceeding applicable major source thresholds; nor fitted with an "active" air pollution control device; and not or not part of a facility with total emissions exceeding major source threshold.

This source **is not subject** to AERR (Air Emissions Reporting Requirements) since 40 CFR Part 51, Subpart A – Emissions Inventory Reporting Requirements, determines AERR based on potential facility wide emissions of each air pollutant at the AERR triggering levels. The emissions do not exceed respective AERR threshold levels.

The Clean Air Branch requests annual emissions reporting from those facilities that have facility wide emissions exceeding the DOH reporting level(s) and for all covered sources. Annual emissions reporting **is required** because this is a covered source.

A Best Available Control Technology (BACT) analysis **is required** for all pollutants that exceed BACT significant levels. An analysis was performed for NO_x due to emissions being greater than 40 TPY. The units are in compliance with the EPA Tier-2 standards. BACT for NO_X is determined to be good combustion practices.

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 at its maximum capacity continuously for 8,760 hours per year.

INSIGNIFICANT ACTIVITIES

No insignificant equipment listed in permit application.

ALTERNATIVE OPERATING SCENARIOS (AOS)

The permit will allow the temporary replacement of a diesel engine with another unit of same size or smaller than the primary unit with equal or lower emissions.

PROJECT EMISSIONS

680 HP Diesel Engine Generator Emissions

Emissions for NO_X, CO, VOC, PM, PM_{10}, $PM_{2.5,}$ and HAPs were based on tier 2 emission factors. Hazardous Air Pollutant emission factors were based on AP-42, Section 3.4 (10/96), Large Stationary Diesel and All Stationary Dual-fuel Engines. A mass balance calculation was used to determine SO_2 emissions based on the maximum allowable fuel sulfur content of 0.0015% by weight and maximum fuel consumption for the unit at 100% load. It was assumed that ninety-six percent (96%) of the total particulate was PM_{10} and ninety percent (90%) of the total particulate was $PM_{2.5}$ based on AP-42, Appendix B.2, Table B.2-2 for gasoline and diesel fired internal combustion engine generators

680 HP Diesel Engine Generator (TPY)		
Pollutant	Emissions lb/hr	Emissions (No Limits)
CO	3.91	13.8
NO_X	7.04	64.1
SO_2	0.01	0.023
PM	0.65	1.51
PM-10	0.62	1.45
PM-2.5	0.58	1.36
VOC	0.33	5.23
HAPs	0.007	0.03

400 TPH Crushing and Screening Plant

Particulate emissions from the crushing and screening equipment were based on emission factors from AP-42, Section 11.19.1 (8/04), Crushed Stone Processing and Pulverized Mineral Processing. The controlled emission factors were used for crushing, screening, and conveyor transfer points. It was assumed that fifty-one percent (51%) PM was PM_{10} and fifteen percent (15%) PM was $PM_{2.5}$ based on information from AP-42, Appendix B.2.2. Uncontrolled emission factors were used for truck loading and unloading operations because there are no emission factors for these operations with controls. The uncontrolled emission factor was used for truck loading and unloading operations and a seventy percent (70%) control efficiency for water sprays was applied to determine emissions. The rated capacity of the equipment was used to determine maximum potential emissions. Emissions are summarized below.

CRUSHING AND SCREENING EQUIPMENT			
Pollutant	400 TPH Crusher Emissions (TPY) (No Limits)	529 TPH Screen Emissions (TPY) (No Limits)	Total Emissions (TPY)[a] (No Limits)
PM	3.24	9.52	12.75
PM_{10}	1.39	3.26	4.65
$PM_{2.5}$	0.30	0.56	0.86
[a] Emissions based on using controls to abate fugitive dust emissions.			

Wind Erosion from Storage Piles

Emissions were based on emission factors from AP-42 Section 8.19.1 (4th ed.) - Sand and Gravel Processing

Wind Erosion from Storage Piles	
Pollutant	Emissions (TPY) [8,760 hr/yr]
PM	0.1
PM-10	0.05
PM-2.5	0.05

Vehicle Travel on Unpaved Roads

A 70% control efficiency was assumed for water suppression to control fugitive dust. Emissions were based on emission factors from AP-42 Section 13.2.2 (11/06) – Unpaved Roads.

Vehicle Travel on Unpaved Roads	
Pollutant	Emissions (TPY) [8,760 hr/yr]
PM	79.6
PM-10	19.5
PM-2.5	2.0

Total GHG emissions on a CO_2e basis using the global warming potential (GWP) of the GHG are shown in the table below.

Table 1 - GHG EMISSIONS							
Power (HP)	Gal/hr	Diesel #2 [a] MMBtu/yr	GHG	Emission Factor [b] (kg/MMBtu)	GWP	CO_2e Emissions (MTPY)	CO_2e Emissions (TPY)
680	31.1	37,596	CO_2	73.96	1	2,780.58	3,065.07
			CH_4	3.0E-03	25	6.72	7.41
			N_2O	6.0E-04	298	2.82	3.11
						2,790.12	3,075.59

a. Based on gallons of diesel per hour at 0.138 MMBtu/gal
b. Emission Factors determined from EPA document Emission Factors for Greenhouse Gas Inventories.

Total facility emissions are summarized in the table below.

Total Facility Emissions and Trigger Levels (TPY)					
Pollutant	Total Emissions[a] (No Limits)	BACT Significant Levels	AERR Threshold	DOH Level	Storage Pile Wind Erosion
CO	13.8	100	1000	250	0
NO_X	64.1	40	100	25	0
SO_2	0.02	40	100	25	0
PM	13.40	25	-	25	79.7
PM-10	5.27	15	100	25	19.6
PM-2.5	1.44	10	100	-	2.1
VOC	5.23	40	100	25	0
HAPs	0.03	-	-	5	0

[a] Not including storage pile or wind erosion emissions.

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. On a case-by-case basis the Department may not require an AAQIA for temporary sources provided the following:

a. The anticipated length of stay at any one location is less than one (1) year;
b. The temporary source is not a major source or part of a major source; and
c. The location of the temporary source is generally in a remote area where nuisance impacts are not expected.

An AAQIA will not be required for the 680 HP diesel engine generator since the engine meets the above conditions. The Department may at any time perform or require the applicant to perform an AAQIA for this facility.

SIGNIFICANT PERMIT CONDITIONS

a. The permittee shall not cause to be discharged into the atmosphere from the cage mill crusher, fugitive emissions which exhibit greater than fifteen (15) percent opacity.
b. 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.
c. The permittee shall conduct or cause to be conducted an annual source performance test on all crushing and screening plant equipment subject to the opacity limits specified in Attachment II, Special Condition Nos. C.2.a and C.2.b.

   Reason for a, b, and c:
   This condition was incorporated into the permit due to requirements for CFR Part 60, Subpart OOO.

d. The operation of the equipment covered by this temporary covered source permit shall involve at least one (1) location change during the term of this permit. Location changes of the equipment shall be in accordance with Attachment II, Section H. For each change in location, the Department reserves the right to impose additional operational controls and restrictions if a site evaluation indicates the controls and/or restrictions are necessary.

   Reason for d:
   This condition was incorporated into the permit due to requirements for temporary permit.

e. Sulfur content not to exceed 0.0015 % by volume for the diesel engine generator.

   Reason for e.
   This condition was incorporated into the permit due to fuel requirements for Nonroad engines.

f. For the purpose of retaining the 680 hp diesel engine's status as a nonroad engine, the diesel engine shall not remain at a location for more than twelve (12) consecutive months or a shorter period of time for an engine located at a seasonal source, except for equipment storage.

   Reason for f.
   This condition was incorporated into the permit for Nonroad engines.

9. Conclusion and Recommendation:

Actual emissions from this facility should be lower than estimated. Maximum potential emissions were based on worst-case conditions assuming maximum rated capacity of the diesel engine generators and processing plant equipment. However, processing by the plants will be on a temporary basis with intermittent periods of operation, contingent upon jobs performed. The permit requires the use of a water spray systems for compliance with state and federal fugitive emissions limits. Recommend issuance of the temporary covered source permit subject to the incorporation of the significant permit conditions.

January 26, 2016
Joseph Baumgartner