

**PERMIT APPLICATION REVIEW  
COVERED SOURCE PERMIT NO. 0381-03-C  
Application for Renewal No. 0381-06**

**Company:** TRI-L Construction, Inc.

**Mailing Address:** P.O. Box 898  
Kaunakakai, Hawaii 96748

**Facility:** Stone Quarrying and Processing Plant and Screening Plant

**Location:** #10 Manawainui Bridge, Hoolehua, Molokai

**SIC Code:** 1411 (Dimension Stone)

**Responsible Official:** Mr. Darryl Leer  
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**PROPOSED PROJECT**

TRI-L Construction, Inc. has submitted an application for permit renewal with modifications. The modifications include the following:

1. Change the permit from a Temporary Covered Source to a Covered Source;
2. Replace the current Hewitt Robins 3-deck Screen with a Telsmith 3-deck Screen; and
3. Install diesel oxidation catalyst controls on the 1,085 hp Cummins diesel engine generator to comply with 40 CFR 63, Subpart ZZZZ.

The applicant currently operates a 231.5 TPH stone quarrying and processing plant and a portable screening plant at #10 Manunawai Bridge, Hoolehua, Molokai. The applicant processes basalt rock by loading the material into the jaw crusher. A portion of the material is transported via conveyor belt to a stockpile. The remainder of the material travels on conveyor belts to the impact crusher and 3-deck screen. From the screen, material is transported to stockpiles. The portable screening plant is not connected to the stone quarrying and processing plant. No crusher is associated with the portable screening plant.

Operations are typically conducted for eight (8) hours per day, five (5) days per week. The 231.5 TPH portable stone processing plant with 252 HP diesel engine and the 1085 HP diesel engine generator is limited to 1,400 hours of operation per year. Monitoring of the hourly limitation is achieved through the use of non-resetting hour meters on the 252 HP diesel engine and 1085 HP diesel engine generator.

**EQUIPMENT DESCRIPTION**

Equipment	Model No.	Serial No.	Date of Manufacture	Power
231.5 TPH Stone Quarrying and Processing Plant with:				
231.5 TPH Thunderbird Industries Primary Jaw Crusher	3625 JOHCH	630	unknown	204 hp DE
100 TPH Canica Secondary Crusher	85	85114-88	09/88	1085 hp
Telsmith 3-deck Screen	none	none	Pre 4/22/08	1085
200 hp/125 TPH Eljay RC 54 Cone Crusher	1200	41C0386	03/86	1085
Cedarapids Screen	M4814E	28034-28012	09/66	1085
252 hp Cummins Diesel Engine	6CTA8.3-G	44328972	Pre 06/92	
1085 hp Cummins Diesel Engine Generator	KTA38-G2	1900349504	08/1990	
Various Conveyors, Water Spray System				
270 TPH Screening Plant				
Construction Equipment Company Roadrunner Portable Screener with 67 hp Deutz Diesel Engine (exempt) Various Conveyors, Water Spray System			unknown	67 hp DE

**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.

The 1085 hp Cummins diesel engine generator is equipped with a DCL International Catalytic Silencer, model no. DC 16-3/6, with DCL Catalyst monitor, and Solberg Captured Crankcase Ventilation System, model no. 14881-CV-01, to comply with 40 CFR 63, Subpart ZZZZ.

**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 Code of Federal Regulations (CFR) Part 60

Subpart OOO – Standards of Performance for Nonmetallic Mineral Processing Plants is applicable to the stone quarrying and processing plant, excluding the Cedarapids screen (manufactured in 1966), because they were manufactured after August 31, 1983, and the maximum capacity of the initial crusher is greater than twenty five (25) tons/hour. The screening plant is not subject to Subpart OOO because it is not connected to the stone quarrying and processing plant and does not have a crusher.

Subpart IIII – Standards of Performance for Stationary Compression Ignition Internal Combustion Engines is not applicable to the 252 hp diesel engine and 1085 hp diesel engine generator because the engines were manufactured before April 1, 2006.

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

This source is not subject to NESHAPs because there are no standards in 40 CFR Part 61 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 applicable to the 252 hp diesel engine and 1085 hp diesel engine generator because the engines are existing stationary RICE. For stationary RICE located at an area source of HAP emissions, a stationary RICE is existing if you commenced construction or reconstruction of the stationary RICE before June 12, 2006.

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 CFR 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.

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 potential emissions are below 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.

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<sub>x</sub> emissions exceed major source thresholds when the facility is operated without limitations for 8,760 hours/year.

**INSIGNIFICANT ACTIVITIES / EXEMPTIONS**

Diesel Engine

The 67 hp diesel engine powering the 270 TPH screening plant is considered an insignificant activity in accordance with HAR §11-60.1-82(f)(2) because its heat input capacity is less than one MMBtu/hr (3.5 gal/hr x 0.14 MMBtu/gal = 0.49 MMBtu/hr).

**ALTERNATIVE OPERATING SCENARIOS**

Diesel Engine and Diesel Engine Generator

The permittee may replace the 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**

231.5 TPH Stone Quarrying and Processing Plant

The maximum capacity of the plant 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.

<b>231.5 TPH Stone Quarrying and Processing Plant</b>		
Pollutant	Emissions (TPY) [1,400 hr/yr]	Emissions (TPY) [8,760 hr/yr]
PM	1.1	6.8
PM-10	0.4	2.6
PM-2.5	0.1	0.5

1085 hp Cummins Diesel Engine Generator

The 1085 hp diesel engine generator is fired on ultra-low sulfur diesel with a maximum sulfur content of 0.0015% by weight. Emissions were based on manufacturer’s data. SO<sub>2</sub> and HAP emissions were based on emission factors from AP-42 Section 3.4 (10/96) – Large Stationary Diesel and All Stationary Dual-fuel Engines.

<b>1085 hp Cummins Diesel Engine Generator</b>			
Pollutant	Emissions (lb/hr)	Emissions (TPY) [1,400 hr/yr]	Emissions (TPY) [8,760 hr/yr]
CO	2.63	1.84	11.52
NO <sub>x</sub>	27.51	19.26	120.48
SO <sub>2</sub>	0.01	0.01	0.05
PM	0.29	0.20	1.26
PM-10	0.28	0.19	1.21
PM-2.5	0.26	0.18	1.13
VOC	0.24	0.17	1.05
HAPs	0.012	0.008	0.052

252 hp Cummins Diesel Engine

The 252 hp diesel engine is fired on fuel oil no. 2 with a maximum sulfur content of 0.5% by weight. Emissions were based on manufacturer’s data. SO<sub>2</sub> and HAP emissions were based on emission factors from AP-42 Section 3.3 (10/96) – Gasoline and Diesel Industrial Engines.

<b>252 hp Cummins Diesel Engine</b>			
Pollutant	Emissions (lb/hr)	Emissions (TPY) [1,400 hr/yr]	Emissions (TPY) [8,760 hr/yr]
CO	0.83	0.58	3.65
NO <sub>x</sub>	3.67	2.57	16.06
SO <sub>2</sub>	0.87	0.61	3.79
PM	0.14	0.10	0.61
PM-10	0.14	0.10	0.61
PM-2.5	0.14	0.10	0.61
VOC	0.12	0.09	0.54
HAPs	0.007	0.005	0.029

270 TPH Screening Processing Plant

The maximum capacity of the plant 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.

<b>270 TPH Screening Plant</b>	
Pollutant	Emissions (TPY) [8,760 hr/yr]
PM	3.5
PM-10	1.2
PM-2.5	0.2

# PROPOSED

## Wind Erosion from Storage Piles

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

<b>Wind Erosion from Storage Piles</b>	
Pollutant	Emissions (TPY) [8,760 hr/yr]
PM	0.1
PM-10	0.1
PM-2.5	0.0

## 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.

<b>Vehicle Travel on Unpaved Roads</b>		
Pollutant	Emissions (TPY) [1,400 hr/yr]	Emissions (TPY) [8,760 hr/yr]
PM	44.5	72.6
PM-10	10.9	17.8
PM-2.5	1.1	1.8

## Greenhouse Gas (GHG) Emissions

Total GHG emissions are summarized 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	1048.38	1048.4
Methane (CH <sub>4</sub> )	25	0.04	1.1
Nitrous Oxide (N <sub>2</sub> O)	298	0.01	2.6
Total Emissions:			1052.0

## Total Emissions

Total facility emissions are summarized in the table below.

<b>Total Facility Emissions and Trigger Levels (TPY)</b>						
Pollutant	Emissions <sup>1</sup> (With Limits)	Emissions <sup>1</sup> (No Limits)	BACT Significant Levels	AERR Thresholds (Type B Sources)	DOH Levels	Wind Erosion and Vehicle Travel Emissions
CO	2.4	15.2	100	1000	250	0
NO <sub>x</sub>	21.8	136.5	40	100	25	0
SO <sub>2</sub>	0.6	3.8	40	100	25	0
PM	4.9	12.2	25	-	25	44.6
PM-10	1.9	5.6	15	100	25	10.9
PM-2.5	0.5	2.4	10	100	-	1.1
VOC	0.3	1.6	40	100	25	0
HAPs	0.01	0.08	-	-	5	0

<sup>1</sup> Excluding emissions from wind erosion from storage piles and vehicle travel on unpaved roads.

**AIR QUALITY ASSESSMENT**

An ambient air quality impact analysis (AAQIA) is not required for the proposed Telsmith Screen 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 AAQIA was previously performed for the diesel engine and diesel engine generator.

**SIGNIFICANT PERMIT CONDITIONS**

1. Operating Hour Limits

- a. The total operating hours of the primary jaw crusher, as represented by the total operating hours of the 252 hp diesel engine, shall not exceed 1,400 hours in any rolling twelve-month (12-month) period.
- b. The total operating hours of the stone quarrying and processing plant, excluding the primary jaw crusher, as represented by the total operating hours of the 1085 hp diesel engine generator, shall not exceed 1,400 hours in any rolling twelve-month (12-month) period.

Reason: To ensure compliance with NAAQS and SAAQS for NO<sub>2</sub>.

2. Fuel Limits

- a. The 252 hp diesel engine shall be fired only on fuel oil no. 2 with a maximum sulfur content not to exceed 0.5% by weight.
- b. The 1085 hp diesel engine generator shall be fired only on ultra-low sulfur diesel with a maximum sulfur content not to exceed 0.0015% by weight, and a minimum cetane index of forty (40) or maximum aromatic content of thirty-five (35) volume percent.

Reason: 40 CFR 63, Subpart ZZZZ, fuel requirements for the 1085 hp diesel engine generator.

3. Incorporate provisions of 40 CFR 63, Subpart ZZZZ for the 252 hp diesel engine and 1085 hp diesel engine generator.

Reason: The engines are subject to 40 CFR 63, Subpart ZZZZ.

4. Incorporate provisions of 40 CFR 60, Subpart OOO for the stone quarrying and processing plant, including fugitive emission limits and source performance tests.

Reason: The stone quarrying and processing plant is subject to 40 CFR 60, Subpart OOO.

**CONCLUSION**

TRI-L Construction, Inc. has submitted an application for permit renewal with modifications. 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, thirty-day (30-day) public comment period, and forty-five-day (45-day) Environmental Protection Agency review period.

Mark Saewong / March 3, 2015