

## PROPOSED

### PERMIT APPLICATION REVIEW TEMPORARY COVERED SOURCE PERMIT (CSP) NO. 0700-01-CT Application for Renewal No. 0700-02

**Applicant:** Tom's Backhoe & Excavation Co. Inc.  
**Facility:** 195 TPH Mobile Jaw Crusher with 160 HP Diesel Engine  
**Location:** Various Temporary Sites, State of Hawaii  
**Mailing Address:** 651 Papipi Road  
Kula, Hawaii 96790  
**Phone:** (808) 878-6233

**Equipment:** The 195 TPH crushing and screening plant consists of the following:

- a. 195 TPH BL-Pegson Jaw Crusher, model no. Metro Trak, serial no. QM10381, manufacturing date:2000;
- b. 480 TPH Read power screen, model no. 1997 Nordberg CV90D, serial no. CV90D1503, manufacturing date 1997;
- c. 160 hp Caterpillar diesel engine, model no. 3116TA, serial no. 2MR017;

**Contact:** Mr. Tom Hoeffken  
**Title:** President  
**Company:** Tom's Backhoe & Excavation Co. Inc.  
**Phone:** (808) 269-0876

#### **Responsible**

**Official:** Mr. Gabriel Hoeffken  
**Title:** Vive President  
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#### **1. Background**

- 1.1 The applicant has applied for a renewal to its covered source permit for operating a 195 TPH crushing and processing plant. The plant is currently located on Hana Highway. Hana, UTM coordinates (meter) 588E, 2367N. There are no changes in equipment proposed by the applicant.
- 1.2 The standard industrial classification code (SICC) for this facility is 1429 (Crushed and Broken Stone, Not Elsewhere Classified).
- 1.3 The applicant proposes an operating limit of 2,080 hours per rolling twelve-month (12-month) period for the mobile jaw crusher, Power Screen, and supporting diesel engine.

1.4 The applicant requested a modification to a temporary covered permit,

**2. Applicable Requirements**

2.1 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

Subchapter 8 - Standards of Performance for Stationary Sources

11-60.1-161(27) Standards of Performance for Non-metallic Mineral Processing Plants

Subchapter 9 - Hazardous Air Pollutant Sources

Subchapter 10 - Field Citations

2.2 40 Code of Federal Regulations (CFR) Part 60 – New Source Performance Standards (NSPS), Subpart OOO, Standards of Performance Standards of Performance for Non-metallic Mineral Processing Plants is applicable since the crusher and screen were manufactured after 1983.

2.3 The facility is not a major source for hazardous air pollutants (HAPs) and is not subject to National Emissions Standards for Hazardous Air Pollutants (NESHAPS) or Maximum Achievable Control Technology (MACT) requirements under 40 CFR, Parts 61 and 63.

2.4 The purpose of Compliance Assurance Monitoring (CAM) is to provide reasonable assurance that compliance is being achieved with large emission 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 greater than the major source level; and (5) not otherwise be exempt from CAM. CAM is not applicable because this facility is not a major source.

2.5 Prevention of Significant Deterioration (PSD) review applies to new major stationary sources and major modifications to these types of sources. The facility is not a stationary source or a major source for any single air pollutant. As such, PSD review is not required.

2.6 Annual emissions reporting will be required because this plant is a covered source.

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2.7 The consolidate emissions reporting rule (CERR) is not applicable because emissions from the facility do not exceed reporting levels pursuant to 40 CFR 51, Subpart A (see table below). Nonroad engine emissions are not applicable for CERR calculations.

<b>CERR APPLICABILITY</b>			
Pollutant	Facility Emissions (2060 hr/yr with water sprays) <sup>a</sup>	CERR Triggering Levels (TPY)	
		3 year cycle (type A sources)	1 year cycle (type B sources)
PM <sub>10</sub>	0.172	≥ 100	≥ 250

a: Emission estimates from diesel engines were not included in the aggregate emissions because these units are non-road engines.

2.8 This source is not subject to BACT analysis because there is no net increase in potential emissions. 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.

2.9 The facility is not a synthetic minor source because the plant can operate 8,760 hours per year and remain below major source thresholds.

2.10 The only greenhouse gas (GHG) emissions from this facility are from the diesel engine that is nonroad engine. Nonroad engines are exempt from Title V and PSD permitting requirements. As such, Title V and PSD permitting for GHG's is not applicable to this facility. The GHG emissions from the diesel engines, however, are calculated in paragraph 6.5 of this permit application review for information.

2.11 40 Code of Federal Regulations (CFR) Part 60 – New Source Performance Standards (NSPS), Subpart IIII, Standards of Performance for Stationary Compression Ignition Internal Combustion Engines is not applicable to the portable diesel engines servicing the crushing and screening plant because the plant will be moved to more than one site at the facility within a twelve month period. Therefore, the diesel engines servicing the portable plant are designated nonroad engines. Nonroad engines are exempt from 40 CFR Part 60, Subpart IIII.

2.12 40 CFR Part 63 – National Emission Standards for Hazardous Air Pollutants (NESHAP), Subpart ZZZZ, NESHAP for Stationary Reciprocating Engines is not applicable to the diesel engines servicing the plant because the engines will operate as nonroad engines. Nonroad engines are exempt from 40 CFR Part 63, Subpart ZZZZ.

**3. Alternate Operating Scenarios**

3.1 No proposed alternative operating scenario.

**5. Air Pollution Controls**

5.1 The plant is equipped with a water spray system:

**6. Project Emissions**

6.1 Particulate emissions from the crushing and screening plant were based on emission factors from AP-42, Section 11.19.1 (8/04), Crushed Stone Processing and Pulverized Mineral Processing. A 70% control efficiency for water sprays was applied to determine emissions using the uncontrolled emission factors. The uncontrolled emission factors were used for screening process. Emissions from the crushing and screening plant are summarized below.

<b>357 TPH CRUSHING AND SCREENING PLANT</b>		
Pollutant	2080 hr/yr with water sprays	8760 hr/yr without water sprays
PM	5.97	83.78
PM <sub>10</sub>	2.14	30.09
PM <sub>2.5</sub>	0.02	0.31

6.2 Particulate emissions from stockpiles were determined by using emission factors from AP-42, Section 13.2.4 (11/06), Aggregate Handling and Storage Piles. Emissions were based on the 195 TPH plant capacity and 2080 hr/yr operation. Emissions were also based on a 15 mph average wind speed and a moisture content of 2.525%. Emissions are summarized in the table below.

<b>STORAGE PILES</b>		
Pollutant	2080 hr/yr with water sprays	8760 hr/yr without water sprays
PM	1.44	20.2
PM <sub>10</sub>	0.71	9.96
PM <sub>2.5</sub>	0.11	1.50

6.3 Emissions from vehicle travel on unpaved roads were based on the production limit of the 380 TPH Non-Portable Plant. 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	2080 hr/yr with water sprays	8760 hr/yr without water sprays
PM	1.30	18.3
PM-10	0.42	5.8
PM-2.5	0.04	0.58

6.4 Total yearly emissions from operating the crushing and screening plant are listed below:

<b>TOTAL EMISSIONS</b>		
Pollutant	Limited (TPY)	Potential (TPY)
	2080 hr/yr with water sprays	8760 hr/yr without water sprays
PM	8.71	122.3
PM <sub>10</sub>	3.27	45.85
PM <sub>2.5</sub>	0.17	2.39

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6.5 Greenhouse gas (GHG) emissions were estimated for operating Greenhouse gases are a single air pollutant defined as an aggregate group of the following six gases: carbon dioxide (CO<sub>2</sub>), nitrous oxide (N<sub>2</sub>O), methane (CH<sub>4</sub>), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), and sulfur hexafluoride (SF<sub>6</sub>). Maximum potential GHG emissions were estimated on a mass basis using AP-42 emission factors from Section 3.3 (10/96), Gasoline and Diesel Industrial Engines. The GHG emissions on a CO<sub>2</sub> equivalent basis were determined with global warming potential (GWP) values listed in PSD and Title V permitting guidance for GHGs prepared by the Office of Air Quality Planning and Standards. The GHG emissions are summarized below.

<b>GHG EMISSIONS</b>					
Power (HP)	Diesel #2 <sup>a</sup> (GAL/YR)	GHG	Potential Emissions (TPY)	GWP	CO <sub>2e</sub> Emissions (TPY)
160	6,745.2	CO <sub>2</sub>	75.88835	1	75.888
		N <sub>2</sub> O	0.000616	310	0.191
		CH <sub>4</sub>	0.003078	21	0.065
				Total	76.144

a. Based on 7.7 gallons of diesel per hour, 8,760 hour/year

6.6 Emissions from the 195 hp diesel engine were based on emission factors from AP-42, Section 3.3 (10/96), Gasoline and Diesel Industrial Engines. A mass balance calculation was used to determine SO<sub>2</sub> emissions based on the maximum allowable fuel sulfur content of 0.0015% by weight and maximum fuel consumption at 100% load. It was assumed that 96% of the total particulate was PM<sub>10</sub> and 90% of the total particulate was PM<sub>2.5</sub> based on AP-42, Appendix B.2, Table B.2-2 for gasoline and diesel fired internal combustion engines. Emission estimates are summarized below.

<b>195 hp DIESEL ENGINE<sup>a</sup></b>		
Pollutant	Engine Emissions (TPY)	
	2080 hours	8760 hours
PM <sub>10</sub>	0.34	1.43
SO <sub>2</sub>	1.69E-03	7.13E-03
NO <sub>x</sub>	4.84	20.4
CO	1.04	4.39
VOC	0.38	1.62
HAPS	0.02	0.08

a. Nonroad engines are exempt from Title V and PSD permitting requirements.

6.7 Facility wide emissions are summarized in the table below:

<b>Facility Wide Permitted Emissions (TPY)</b>				
<b>Pollutant</b>	<b>Diesel Engine <sup>a</sup></b>	<b>Crushing and Screening Plant</b>	<b>Total Emissions</b>	<b>Total Emissions for Major Source Applicability</b>
PM		8.71	8.71	----
PM <sub>10</sub>	0.34	3.27	3.61	≥100 TPY
PM <sub>2.5</sub>		0.17	0.17	----
SO <sub>x</sub>	1.69E-03	0	1.69E-03	N/A
NO <sub>x</sub>	4.84	0	4.84	N/A
CO	1.04	0	1.04	N/A
VOC	0.38	0	0.38	N/A
HAPS	0.02	0	0.02	N/A

a. Nonroad engines are exempt from Title V and PSD permitting requirements.

**7. Air Quality Assessment**

7.1 An ambient air quality impact analysis is not required for the portable diesel engines due to the nature of the emissions from this equipment. The diesel engines are non-road engines and will operate not more than twelve (12) months at each temporary site.

**8. Significant Permit Conditions**

8.1 Water suppression of particular matter must be maintained.

Reason for 8.1: If water suppression devices are not used during operation of the crushing and screening facilities, major source thresholds may be exceeded.

8.2: 40 CFR Part 60, Subpart OOO provisions are applicable to crushing and screening equipment built after 1983.

Reason for 8.2: Incorporated into the permit based on applicability to federal standards as indicated in Paragraph 2.2.

8.3 0.015% (ultra-low sulfur diesel) must be used for nonroad engines at this facility.

Reason for 8.3: 40 CFR Part 80, Subpart I requires the use of 15 PPM sulfur diesel in nonroad engines beginning June1, 2010.

**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 engines and stone processing plant equipment. Actual crushing capacity will vary depending on product size and the type of material, but will likely be much lower than the maximum rated capacity. The permit requires the use of a water spray system for compliance with state and federal fugitive emission regulations.

Issuance of the CSP No. 0700-01-CT renewal is recommended based on the proposed operating restrictions by the applicant on the 195 TPH mobile jaw crusher, 480 TPH power screen, and 160 hp diesel engine generator to reduce particulate emissions and meet state ambient air quality standards (SAAQS)

February 28, 2013  
Joseph Baumgartner