Permit Application Review for
Temporary Covered Source Permit (CSP) No. 0576-01-CT

Application No.: 0576-01

Applicant: Henry's Equipment

Facility Title: One (1) 275 TPH Mobile Crusher with One (1) 300 HP Diesel Engine
One (1) 500 TPH Mobile Screen with One (1) 0.67 MMBtu/Hr Diesel Engine

SIC Code: 1411

Location: Various Temporary Sites, State of Hawaii

Proposed initial location for the 275 TPH mobile crusher and 500 TPH screen:
Lepeka Avenue, Nanakuli, Oahu.
UTM Coordinates: 588,916 m East; 2,364,663 m North.

Responsible Official: Frances Kama-Silva
President
(808) 696-2879

Contact Person: Fred Peyer
EMET Services, Inc
479-4945

Mailing Address: Henry's Equipment
P.O. Box 470
Waianae, Hawaii 96792

Phone: 808-696-2879

1. Equipment Description:

Type	Manufacturer	Model/ SN	Year Mfg'd	Description	Power Source / Fuel
275 TPH [a] Crusher	BL-PEGSON	428 Trakpactor SN QM014776	2000	Crushes basalt rock, coral, or concrete	Diesel Engine listed below
300 HP [a] Diesel Eng.	Caterpillar	3306; SN 64Z33001	2001	Drives Trakpactor and conveyors	Diesel # 2 max 15.4 gph[a]
500 TPH 1-deck SCREEN [a]	EXTEC	Robotrac 7000 SN 5616	1999	Vibrating Screen	Duetz diesel engine listed below

[a] Based on manufacturers' specifications.

2. Background:

2.1 Both the 428 Trakpactor and the 300 HP Caterpillar diesel engine were previously owned by Pineridge Farms, Inc. and were authorized by CSP No. 0507-01-CT, issued on April 25, 2002. The crusher and diesel engine were sold to Henry's Equipment on September 1, 2004. Because CSP no. 0507-01 authorizes several other pieces of rock-crushing and screening equipment belonging to Pineridge Farms, the CSP and its conditions relating only to the Trakpactor and the 300 HP diesel engine could not readily be administratively transferred from Pineridge to Henry's Equipment. Therefore, a new CSP must be issued to Henry's Equipment to authorize their use of the Trakpactor crusher and diesel engine.

2.2 The permit application for the subject equipment was submitted on December 16, 2004 with a fee of $100 for an administrative amendment. The application states that Henry's Equipment will retain all existing permit conditions in CSP No. 0507-01-CT that pertain to the Trakpactor.

2.3 I called Mr. Fred Peyer of EMET on December 23, 2004 and discussed the following with him:

a. Because the sections of CSP No. 0507-01-CT relating to the Trakpactor cannot readily be transferred from Pineridge to Henry's Equipment, and because the Trakpactor is subject to the requirements of NSPS, I explained to Mr. Peyer that a new covered source permit is required.

b. The fee for a new CSP is $1,000. A balance of $900 is due.

c. Henry's Equipment also owns a 150 TPH screening plant which is permitted by NSP No. 0443-01-NT. The screen cannot be used together with the Trakpactor; otherwise, the screen will also be subject to Covered Source Permit regulations. Mr. Peyer indicated that Henry's Equipment is aware of this restriction and will not operate the Trakpactor and the screening plant together at the same site.

d. The serial nos. for the Trakpactor and Caterpillar diesel engine, as listed in the application, do not correspond with the SNs of the equipment that are in our files for Pineridge Farms. Mr. Peyer said he would have the applicant retrieve the SNs directly from the nameplates of the machines and call us.

e. The application indicates that Henry's Equipment will comply with the 2,080 hours/yr maximum operating time that was a condition of CSP no. 0507-01. I advised Mr. Peyer that the 2,080 hr limit was based on the Trakpactor being used in conjunction with other equipment owned by Pineridge Farms and therefore, it need not necessarily be restricted to the same hourly limit as was stipulated in Pineridge's CSP. Mr. Peyer suggested that the proposed hour limit be raised to 2,500 hr/yr. I told him that I would evaluate 2,500 hr/yr of operation in my calculation of emissions and in the Ambient Air Quality Impact Analysis.

2.4 On December 27, 2004, Frances Kama-Silva called back and said the serial nos. of the Trakpactor and Caterpillar engine were read from the nameplates and are as follows:

- 428 Trakpactor 275 TPH rock crusher: SN QM014776
- Caterpillar 300 HP diesel engine: SN 64Z33001

These serial numbers are consistent with the file records kept by Pineridge Farms and at CAB.

2.5. On January 10, 2005, Ms. Kama-Silva informed the Department that Henry's Equipment purchased a **500 TPH Extec Screening plant** from West Oahu Aggregate in December 2004. She indicated that the screen will be used together with the Trakpactor crusher occasionally. I informed her that as such, the screen is also subject to the requirements of NSPS and must be authorized by a covered source permit. I asked her to send us a letter requesting the Extec screen to be included in the CSP application no. 0576-01.

2.6 Review of CAB's files revealed that the initial source performance tests for the Trakpactor mobile crusher and the Extec mobile screen were already conducted by their previous owners. Therefore, initial SPTs will not be required as a condition of this CSP.

3. Proposed Project:

The applicant proposes to use the 428 Trakpactor to process and crush basalt rock and concrete rubble for recycling. Prior to being loaded into the crusher, the material is run through the Extec screen to separate the fines and dirt from the rocks and concrete rubble. The raw material to be crushed is dumped into the feeder by a front-end loader. From the feeder the material is moved directly into the impact crusher. Undersize material is transported from the feeder via conveyor belt # 1 to a stockpile on the side of the crusher. The rest of the material travels through the crusher and onto conveyor belt # 2 which transports it to a second stockpile. The crusher and the screen may also be deployed to other job sites separately, or in tandem.

The crushing plant is equipped with tracks and is therefore mobile. It is also equipped with a magnetic belt to remove metal from recycled concrete. It is powered by a built-in 300 HP Caterpillar diesel engine.

Operations will be irregular depending on job availability and contractors' requirements. Typically, there are times when the plants will sit idle. 2,500 hr/yr appears to be an adequate limit within which Henry's Equipment can operate.

4. Air Pollution Controls:

The facility will control particulate emissions from the proposed unit by employing water spray bars at the following material transfer points, as was required by Pineridge's CSP:

1. At the feed of the crusher;
2. At the exit of the crusher to the finished material conveyor; and
3. At the transfer point from the finished material conveyor to stockpile.

For the mobile screen, water spray bars shall be installed, maintained, and utilized as necessary at the following material drop off points:

1. At the exit of the hopper; and
2. At the feed of the screen.

No other changes to air pollution controls are proposed.

5. 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
Subchapter 8 - Standards of Performance for Stationary Sources
11-60.1-161(25) Standards of Performance for Non-metallic Mineral Processing Plants
Subchapter 10 - Field Citations

5.1. This source is subject to the following New Source Performance Standards **(NSPS)**:
40 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 portable crushed stone plants with capacities greater than 150 TPH that commence construction, reconstruction, or modification after August 31, 1983. The crushing plant and its conveyors meet these conditions and were determined subject to Subpart OOO. Because the Extec screen was manufactured in 1999 and will be used together with the crusher, the screen is also subject to Subpart OOO.

Annual source performance testing and monthly visible emissions observations shall be required for the Extec screen, and the Trakpactor crusher. Monitoring, recordkeeping, notification, and reporting requirements will be included in the permit to ensure monthly V.E. observations, as well as to ensure annual source performance testing of the equipment.

5.2. This source is not subject to **PSD** requirements because it is not a major stationary source, as defined in HAR Title 11, Chapter 60.1, Subchapter 7 and 40 CFR Part 52, Section 52.21.

5.3 This source is not subject to **NESHAPS** as there are no standards in 40 CFR Part 61 applicable to this facility (crushing and screening plant operations).

5.4 This source is not subject to **MACT** as the facility is not a major or area source of HAPS, covered under 40 CFR Part 63.

5.5 A Best Available Control Technology (**BACT**) analysis is required for new covered sources and significant modifications to covered sources that have the potential to emit or increase emissions above "significant levels", as defined in HAR, Section 11.60.1-1, considering any limitations, enforceable by the director, on the covered source to emit a pollutant. This facility is a new covered source and its potential emissions at any location were calculated to be less than the "significant" thresholds (see table below). Therefore, a BACT analysis was not performed at this time.

5.6 Compliance Assurance Monitoring **(CAM)** Applicability:
40 CFR Part 64- 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. 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 precontrol emissions that are greater than the major source level; and (5) not otherwise be exempt from CAM. The facility remains exempt from Compliance Assurance Monitoring (CAM) provisions because this source is not a major source.

5.7 Consolidated Emissions Reporting Rule **(CERR)** and Compliance Data System **(CDS)** Applicability: 40 CFR Part 51, Subpart A - Emission Inventory Reporting Requirements, determines CERR based on facility wide emissions of each air pollutant at the CERR triggering levels shown below. This facility does not have any emissions at the CERR triggering levels. Therefore, CERR requirements are not applicable.

Although CERR 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 AIRS database. Total combined emissions from this facility do not exceed these levels. However, annual emissions reporting is required for all covered sources.

Maximum Emissions Compared to Significant Levels, CER, and "In-house" Thresholds (All Values in TPY)

Pollutant	Facility-Wide Emissions [a]	Significant Levels	CERR Triggering Levels		"In-house" Reporting Levels
			1-Year Cycle (Type A Sources)	3-year Cycle (Type B Sources)	
NOx	11.63	40	≥ 250	≥ 100	≥ 25
CO	2.51	100	≥ 2500	≥ 1000	≥ 250
SO2	1.41	40	≥ 2500	≥ 100	≥ 25
PM-10	8.67	15	≥ 250	≥ 100	≥ 25
PM	23.53	25	--	--	≥ 25
VOC	0.95	40	≥ 250	≥ 100	≥ 25
HAPs	1.82E-02	--	--	--	≥ 5

[a] Based on 275 TPH Crusher, 500 TPH Screen and the 300 HP D.E. operating 2,500 hr/yr. Does not include emissions from the exempt 0.67 Duetz D.E.

Compliance Data System (**CDS**) is an inventory system used to track covered sources subject to annual inspections and requirements are applicable to all covered sources. Applicability of CDS reporting looks at emissions on a facility-wide basis and whether or not the facility is a covered source. As a covered source, the facility remains a CDS source and is subject to annual emissions reporting.

5.8 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 (e.g., limiting the facility's hours of operation and limiting the facility's production rate). This facility is not a synthetic minor based on emission levels less than "major" levels (< 100 TPY) and HAPs less than 10 TPY when the crushing plant and diesel engine are operated at 8,760 hr/yr. (See Table below)

FACILITY-WIDE EMISSIONS (TPY)-- Crusher & Screen Operating 8,760 Hr/yr								
Pollutant	0.67 MMBtu/Hr Duetz D.E. (Exempt)	300 HP Diesel Engine	275 TPH Crusher	500 TPH Screen	Stockpile	Vehicle Travel	Total Emissions (Excl. exempt DE)	Total Emissions (incl. exempt DE)
NOx	12.94	40.75	--	--	--	--	40.75	53.69
CO	2.79	8.78	--	--	--	--	8.78	11.57
SO2	1.51	4.75	--	--	--	--	4.75	6.26
PM-2.5	0.82	2.58	0.94	0.24	1.52	1.32	8.93	9.75
PM-10	0.91	2.86	2.46	0.58	4.84	8.62	30.39	31.30
PM	0.91	2.86	6.30	1.58	10.24	29.19	82.45	83.36
VOC	1.06	3.33	--	--	--	--	3.33	4.38
HAPs	2.03E-02	6.38E-02	--	--	--	--	6.38E-02	8.40E-02

6. Insignificant Activities/Exemptions:

6.1 Existing exempt activities at the facility consist of a 150 gallon diesel fuel tank that stores fuel for the diesel engine. It is exempt in accordance with HAR 11-60.1-82(f)(1) because it is less than 40,000 gallons and is not subject to any standard or other requirement pursuant to Section 111 or 112 of the CAA. This tank is not subject to NESHAPS as there are no standards in 40 CFR Part 61 applicable to this source. It is also not subject to NSPS as there are no applicable regulations in 40 CFR Part 60 pertaining to this fuel tank.

6.2 The 0.67 MMBtu/hr Deutz diesel engine which powers the Extec screen is an exempt activity pursuant to HAR, Section 11-60.1-62(d)(4) since this equipment's maximum heat rate input is less than
1.0 MMBtu/hr.

7. Alternate Operating Scenarios:

The applicant requested that an alternate operating scenario to allow the permitted diesel engine to be temporarily replaced with an engine of the same or smaller size if warranted in the event of breakdowns of the permitted diesel engine.

8. Project Emissions:

The maximum potential emissions of the facility, as shown in the table below, do not exceed major source levels as required by regulations. Calculations show that the majority of emissions are particulate matter, fugitive in nature, and are generated by vehicle traffic on the unpaved roads.

8.1 Rock Crushing and Screening Operations.

a. 275 TPH Trakpactor Crusher. Particulate matter emissions from the crushed stone processing are summarized below and calculations are shown in Enclosure (1). Emission calculations were based on the maximum capacity of the crusher (275 TPH) operating unrestricted 8,760 hr/yr, and 2,500 hrs/yr per the applicant's proposal.

Pollutant	Emissions (TPY) [a]	
	8,760 hr/yr	2,500 hr/yr
PM-2.5	0.945	0.270
PM-10	2.463	0.703
PM	6.300	1.798

[a] AP-42, 11.19.2 (8/04), Crushed Stone Processing

b. 500 TPH Extec Screening Plant. PM emissions from the screening process are summarized below and calculations are shown in Enclosure (1). Emission calculations were based on the maximum capacity of the screen (500 TPH) operating unrestricted 8,760 hr/yr and 2,500 hrs/yr per the applicant's proposal.

Pollutant	Emissions (TPY)	
	8,760 hr/yr	2,500 hr/yr
PM-2.5	0.237	0.068
PM-10	0.584	0.167
PM	1.579	0.451

[a] AP-42, 11.19.2 (8/04), Crushed Stone Processing

8.2 Stockpiles. Worst case emissions from aggregate handling and storage piles were based on the higher maximum capacity of the Extec screen (500 TPH). Particulate emissions are summarized below and shown in Enclosure (2).

Pollutant	**Emissions (TPY) [a]**	
	8,760 hr/yr	**2,500 hr/yr**
PM-2.5	2.77	0.79
PM-10	8.80	2.51
PM	18.62	5.32

[a] AP-42, Section 13.2.4 (1/95), Aggregate Handling and Storage Piles.

8.3 Vehicle Travel on Unpaved Roads**.** Particulate emissions from vehicle travel on unpaved roads were calculated using AP-42, Section 13.2.2 (12/03), "Unpaved Roads." Worst-case emission rates were based on the following assumptions:

a. Calculations for vehicle miles traveled (VMT) per year were based 500 feet of round-trip travel per load into and out of the facility, an average truck's load capacity of 21 tons, and the higher production rate of the Extec screen (500 TPH).

Operating Hrs/Year	**VMT** (miles/yr)
8,760	39,502
2,500	11,273

b. A k (particle size multiplier) value for PM, PM-10, and PM-2.5 of 4.9, 1.5 and 0.23, respectively, based on updated information from AP-42.

c. An s (silt content of road) value of 10% for a processing plant road.
d. A W (mean vehicle weight) value of 26.5 tons based on information from the applicant.

e. A p (# of days with 0.01" of rain/year) value of 81 based on available data from the Honolulu Observatory site 702.2 (www.wrcc.dri.edu/cgi-bin) .

f. A 70% control efficiency was applied to account for dust control from the water truck.

g. Particulate matter emissions from vehicle travel on unpaved roads are based on the production rates of the equipment, and are shown in enclosure (3) and summarized as follows.

Pollutant	**Unlimited (8,760 hr/yr)**		**Limited (2,500 hr/yr)**	
	VMT (miles/yr)	**Emission (TPY)**	**VMT (miles/yr)**	**Emission (TPY)**
PM-2.5	39,502	2.40	11,273	0.69
PM-10	39,502	15.68	11,273	4.47
PM	39,502	53.08	11,273	15.15

8.4 Diesel Engine Emissions.

a. Emissions from the crusher's 300 HP Caterpillar diesel engine are based on the following and are shown in enclosure (4) and summarized in the table below:

- Fuel consumption rate of 15.4 gal/hr.
- Diesel fuel has a heating value of 137,000 BTU/gal and contains 0.5% Sulfur.

Emissions from 300 HP Diesel Engine

Pollutant	Emission (lb/hr)	Emission (TPY)	
		No Permit Limit (8,760 hr/yr)	Permit Limits (2,500 hr/yr)
NO_X	9.304	40.752	11.630
CO	2.004	8.779	2.505
SO_2	1.085	4.752	1.411
PM-2.5 [a]	0.589	2.578	0.736
PM-10	0.654	2.865	0.818
PM	0.654	2.865	0.818
Aldehydes	0.148	0.647	0.185
TOC	0.760	3.327	0.949
HAPs	--	6.38E-02	1.82E-02

b. Emissions from the Extec screen's exempt Duetz diesel engine are based on the following and are shown in enclosure (4) and summarized in the table below:

- Fuel consumption rate of 4.89 gal/hr.
- Diesel fuel has a heating value of 137,000 BTU/gal and contains 0.5% Sulfur.

Emissions from 0.67 MMBtu/Hr Diesel Engine

Pollutant	Emission (lb/hr)	Emission (TPY)	
		No Permit Limit (8,760 hr/yr)	Permit Limit (2,500 hr/yr)
NOX	2.9547	12.94	3.69
CO	0.6365	2.79	0.80
SO2	0.344	1.51	0.43
PM-2.5 a	0.18693	0.82	0.23
PM-10	0.2077	0.91	0.26
PM	0.2077	0.91	0.26
Aldehydes	0.0469	0.21	0.06
TOC	0.2412	1.06	0.30
HAPs	--	2.03E-02	5.78E-03

8.5 Facility Wide Emissions Facility-wide emissions from the facility operating 8,760 hr/yr and 2,500 hr/yr are tabulated below and at enclosure (5). A major source as defined in Section 11-60.1-1 of HAR Title 11, has the potential to emit any HAP of 10 TPY or more, or 25 TPY or more of any combination of HAPs, or 100 TPY or more of any air pollutant. Calculated emissions do not meet these limits and thus, this facility is not classified as a major source, in compliance with regulations for temporary sources.

FACILITY-WIDE EMISSIONS (TPY)-- Crusher & Screen Operating 8,760 Hr/yr

Pollutant	0.67 Mmbtu Duetz D.E. (Exempt)	300 HP Diesel Engine	275 TPH Crusher	500 TPH Screen	Stockpile	Vehicle Travel	Total Emissions (Excl. exempt DE)	Total Emissions (incl. exempt DE)
NOx	12.94	40.75	--	--	--	--	40.75	53.69
CO	2.79	8.78	--	--	--	--	8.78	11.57
SO2	1.51	4.75	--	--	--	--	4.75	6.26
PM-2.5	0.82	2.58	0.94	0.24	2.77	2.40	8.93	9.75
PM-10	0.91	2.86	2.46	0.58	8.80	15.68	30.39	31.30
PM	0.91	2.86	6.30	1.58	18.62	53.08	82.45	83.36
VOC	1.06	3.33	--	--	--	--	3.33	4.38
HAPs	2.03E-02	6.38E-02	--	--	--	--	6.38E-02	8.40E-02

FACILITY-WIDE EMISSIONS (TPY)--Crusher & Screen Operating 2,500 Hr/yr

Pollutant	0.67 MMBtu/Hr Duetz D.E. (Exempt)	300 HP Diesel Engine	275 TPH Crusher	500 TPH Screen	Stockpile	Vehicle Travel	Total Emissions (Excl. exempt DE)	Total Emissions (incl. exempt DE)
NOx	3.69	11.63	--	--	--	--	11.63	15.32
CO	0.80	2.51	--	--	--	--	2.51	3.30
SO2	0.43	1.41	--	--	--	--	1.41	1.84
PM-2.5	0.23	0.74	0.27	0.07	0.79	0.69	2.55	2.78
PM-10	0.26	0.82	0.70	0.17	2.51	4.47	8.67	8.93
PM	0.26	0.82	1.80	0.45	5.32	15.15	23.53	23.79
VOC	0.30	0.95	--	--	--	--	0.95	1.25
HAPs	5.78E-03	1.82E-02	--	--	--	--	1.82E-02	2.40E-02

9. 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 it's effect on the ambient air.

The Department of Health generally exempts an applicant from performing an ambient air quality impact analysis for (1) existing sources with no proposed modifications, (2) exempt activities, (3) fugitive emission sources (e.g., storage tanks, storage piles, pipe leaks, etc.), and (4) intermittent operating noncombustion sources.

For this application, the 300 HP Caterpillar diesel engine, which is situated on the chassis of the Trakpactor, requires an Ambient Air Quality Impact Analysis (AAQIA).

A Good Engineering Practice (GEP) stack height analysis was performed (see table below) using the dimensions of a nearby one-story house and the Trakpactor structure itself.

The following table shows that only the Trakpactor's height is more than 40% of stack height (5.03 m) and it is within 5L of the stack (where L is the smaller dimension of the building height or projected width, and is underlined). The house did not meet the distance (5L) criteria.

Bldgs/ Structure	Length (m)	Width (m)	Height (m)	Pw, projected width (m)	L, lesser of Hgt or Pw (m)	Distance to Stack (m)	Stack w/in 5L? (yes/no)	Structure hgt >40% of stack hgt (5.03 m)? (yes/no)
Trakpactor	8.2	2.45	3.28	8.56	3.28	0.0	Yes	Yes
House	12.19	9.14	4.57	15.24	4.57	60.96	no	Yes

Results from the analysis indicated the physical height of the diesel engine's stack (5.03 m) is less than the GEP formula stack height of 8.2 m based on the dimensions of the Tracpactor as a worst case scenario. Results are tabulated below.

Building/Structure	Projected Width (m)	Height (m)	Hg (m) *
Trakpactor	8.56	3.28	8.2

* Hg = Structure hgt + 1.5 L

Background air quality data for the AAQIA was obtained from the State of Hawaii Department of Health's Annual Summary Hawaii Air Quality Data, 2003. Data collected at the monitoring stations located at West Beach (Ko'Olina Golf Course) for PM-10, SO_2 and NO_2, and at Kapolei (2052 Lauwiliwili St.) for CO, were used for the analysis.

A BEE-Line's Screen 3 model was used for the analysis and the Trakpactor's dimensions were used for downwash effects. Assumptions for the model included the following:

a. Simple terrain impacts;
b. Rural dispersion parameters;
c. Wake effects from the Trakpactor structure;
d. Default meteorology;
e. EPA scaling factors of 0.9, 0.7, and 0.4 for the 3-hour, 8-hour, and 24 hour concentrations, respectively;
f. State of Hawaii scaling factor of 0.2 for the annual concentrations.

The table below presents the potential to emit and stack parameters used in the AAQIA. The derivation of the sulfur dioxide, oxides of nitrogen, carbon monoxide, and particulate matter emissions were previously discussed in the project emissions section. Hydrogen sulfide and lead emission factors were not available in AP-42 and should be negligible; therefore, they were not evaluated in the air modeling.

SOURCE EMISSION RATES AND STACK PARAMETERS FOR AIR MODELING									
Equipment	Stack No.	EMISSION RATES (g/s)				SOURCE STACK PARAMETERS			
		SO_2	NOx	CO	PM	Hgt (m)	Temp (K)	Vel. (m/s)	Diam. (m)
300 HP Caterpillar D.E.	1	0.137	1.172	0.253	0.082	5.03	793	66.43	0.127

Receptors were located in areas considered ambient air. These areas were outside of the property boundary of the facility. SCREEN 3's default set-up placed the initial receptor one meter downwind of the diesel engine's stack. Thereafter, receptors were placed every 100 meters from the stack up to a maximum radial distance of 50,000 meters. The maximum 1 hour concentration of 560 ug/m^3 was predicted at a distance of 30 meters from the stack. (Output summary at Encl (6)).

The predicted concentrations in the table below assumed 2,500 hours of operation per year and an annual fuel consumption of 38,500 gal/yr. Background concentrations were also considered and added to the total impact. Based on these assumptions, the emissions impact from the 300 HP diesel engine will comply with state and federal ambient air quality standards as shown in the table below.

PREDICTED AMBIENT AIR QUALITY IMPACTS [a]								
AIR POLLUTANT	EMISS. RATE (g/s)	AVG. TIME	SCALING FACTOR	IMPACT [b] (ug/m3) 2,500 hr/yr	BCKGRD (ug/m3)	TOTAL IMPACT (ug/m^3)	AIR STD (ug/m^3)	% OF STD
SO2	0.137	3-Hour	0.9	68.90	16	85	1,300	7%
		24-Hour	0.4	30.62	4	35	365	9%
		Annual [c]	0.2	4.37	0.2	5	80	6%
NOx	1.172	Annual [c]	0.2	37.47	8	45	70	65%
CO	0.253	1-Hour	1	141.42	2,166	2307	10,000	23%
		8-Hour	0.7	99.00	841	940	5,000	19%
PM-10	0.082	24-Hour	0.4	18.46	33	51	150	34%
		Annual [c]	0.2	2.63	16	19	50	37%

[a] Based on maximum 1 hour concentration of 560 ug/m^3 per g/sec 30 meters from the stack.

[b] IMPACT = (Emiss. Rate) X (Scaling factor) X (560 ug/m^3).

[c] Annual Impact = (Emiss. Rate) X (Scaling factor) X (560 ug/m^3).X (2500/8760)

10. Significant Permit Conditions:

Condition: Under no circumstances shall the 275 TPH BL-Pegson Trakpactor crushing plant be operated at the same location as the 150 TPH CEC Vibrating Screen which is owned by Henry's Equipment.

Purpose: The screen is permitted by Noncovered Source Permit No. 0443-01-NT. If it is operated together with the Trakpactor, the screen will be subject to Covered Source regulations.

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Condition: The 275 TPH Trakpactor crushing plant is subject to the provisions of the following federal regulations:

a. 40 CFR Part 60, Standards of Performance for New Stationary Sources, Subpart A, General Provisions; and
b. 40 CFR Part 60, Standards of Performance for New Stationary Sources, Subpart OOO, Standards of Performance for Nonmetallic Mineral Processing Plants.

Purpose: To specify the new unit as subject to the federal regulations listed above.

Condition: The 275 TPH Trakpactor crushing plant and the Extec screening plant shall not be operated for more than 2,500 hours in any 12-month rolling period.

Purpose: This operation limit was proposed by the applicant based on his past and anticipated operations. This restriction is required in order to keep nitrogen dioxide emissions from exceeding the State's annual ambient air quality standards.

11. Conclusion and Recommendation:

Actual emissions from this facility should remain lower than estimated because:

1) The calculated emissions for the proposed crushing plant and its associated diesel engine were based on the worst possible potential conditions (maximum rated capacity of the crusher (275 TPH) and maximum fuel feed rate of the diesel engine (15.4 gph)). Actual crushing rate will vary depending on product size and the type of material and will typically be less than the maximum capacity, and the diesel engine will not run at its full power rating.

2) Likewise, the calculated emissions for the proposed screening plant and its associated diesel engine were based on the worst possible potential conditions (maximum rated capacity of the screen (500 TPH) and maximum fuel feed rate of the diesel engine (4.89 gph)). Actual screening rate will vary depending on product size and the type of material and will typically be less than the maximum capacity, and the screen's diesel engine will not run at its full power rating

3) Calculated emissions were conservative and based on operating 2,500 hr/yr. The applicant indicated that they would typically operate at a maximum of 40 hr/week, or 2,080 hr/yr.

Based on the information submitted by Henry's Equipment, it is the preliminary 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 11-59 and not cause or contribute to a violation of any State or National ambient air quality standard. Therefore, the Hawaii DOH intends to issue Temporary Covered Source Permit No. 0576-01-CT, subject to the significant permit conditions and EPA review.

WK 1/21/05