

RENEWAL of TEMPORARY COVERED SOURCE APPLICATION REVIEW
CSP Permit No. 0041-01-CT Application Number: 0041-03

Applicant: West Oahu Aggregate Company, Incorporated
Facility: Portable Stone Processing Plant
Located At: (Initially) 92-460 Farrington Highway, Ewa, Oahu
 UTM Coord. 2362000N, 590850 E Zone 4

| | | | |
|------------------------|--|-----------------|---------------------------------------|
| Responsible | Joaquin Silva | POC: | Bo Midro |
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1. Background:

This is an existing stone crushing facility originally permitted under Authority to Construct (ATC) No. A-1161-1026, and later authorized by Covered Source Permit (CSP) No. 0041-01-CT on December 18, 2000. The CSP was renewed on April 8, 2005, and will expire April 7, 2010.

The application to renew CSP No. 0041-01-CT was submitted on February 19, 2009.

This permit renewal review will consider the following items:

- a. The renewal application indicates that the permittee proposes not to exceed total operating hours of 2,080 in any rolling 12-month period as previously permitted.
- b. The stone crushing facility is a stationary plant, according to the applicant, and will not be moved to other job sites. The plant is located at 92-460 Farrington Highway, in Waimanalo Gulch, Ewa, Oahu, the same location that was identified in the original permit application.
- c. The applicant has indicated the 730 TPH Pioneer primary jaw crusher, model 4248, SN 4248 with 503 HP Caterpillar diesel engine, model 3408, SN 67U-16687 was sold and removed from the plant.
- d. There are no other proposed modifications to the existing facility indicated.

2. Equipment Description:

Existing equipment are listed in Table 1a. The applicant is proposing to add the equipment listed in Table 1b, and the applicant proposes to remove from the permit the equipment listed in Table 1c.

Table 1a: Existing Equipment

| Type | Manufac. | Model/Serial No. | Description | Capacity ^a | Fuel |
|-------------------------|----------|-----------------------------|--|-----------------------|---------------------------------|
| Diesel Engines | | | | | |
| Diesel engine generator | Cummins | Model KTA19-G4, SN 37187800 | provides electric power to the secondary impact crusher and provides misc. power | 680 HP | diesel no. 2 (max. 31.7 gal/hr) |

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| Stone Processing Plant | | | | | |
|------------------------|------------|------------------------------------|--|---------|-----------------------------------|
| Pan & grizzly feeder | Simplicity | Model 0A120C SN 5716-0F120C | 57"x16' feeds primary crusher | 200 TPH | driven by the 680 HP DEG |
| 2ndary crusher | Eagle | Model 33D4200Jumbo1400 SN 10930 | impact mill crusher manufacture: 1993 | 450 TPH | driven by the 680 HP DEG |
| 3-deck screen | Simplicity | Model 0A140D SN 3620-HS140D | 6'x20' triple deck screen manufacture: 1993 | 200 TPH | driven by the 680 HP DEG |
| Water sprays | -- | -- | water sprays at various locations | | Hydraulic pressure & gravity flow |
| Conveyor system | -- | -- | various conveyors (14 trans. pts.) | | driven by the 680 HP DEG |

Table 1b: Existing equipment continued.

| Type | Manufacturer | Model/ Serial No. | Year | Description | Power Source |
|--|--------------|-------------------------------------|------|------------------------------|---|
| 500 TPH ^a Vibrating Screen | Powerscreen | Turbo Chieftain 1400, SN 6608038 | 2002 | 2 deck, 11' x 5' ; On tracks | 109 HP Deutz BF4M 1012C diesel engine (insignificant activity) |

Table 1c: Equipment to Be Removed from CSP No. 0041-01-CT

| Type | Manuf. | Model/Serial No. | Description/ date | Capacity ^a | Powered by /Fuel | Disposition |
|-----------------|-------------|-----------------------------|--|-----------------------|---------------------------------|-------------|
| Diesel engine | Caterpillar | Model 3408, SN 67U-16687 | provides mechanical/hydraulic power to the primary crusher | 503 HP | diesel no. 2 (max. 26.2 gal/hr) | Sold |
| Primary crusher | Pioneer | Model 4248, SN 4248-96 | jaw crusher manufacture: 1994 | 730 TPH | driven by the 503 HP DEG | |

^a maximum capacities are from manufacturer through applicant

Fuel: All diesel engines will be fired by diesel fuel oil no. 2, with maximum sulfur content less than 0.5% by weight.

Standard Industrial Classification Code (SICC) listed as 1442 (in application), for Sand and Gravel, however 1429, for Crushed and Broken Stone, Not Elsewhere Classified, seems more appropriate since 1442 does not address crushing operations, thus will use 1429 instead.

Additional background information on the initial application, previous review, and issued permit is available in permit file no. 0041-02.

Issuance of this permit no. **0041-03** will supersede Covered Source Permit (CSP) No. **0041-02-CT**, in its entirety.

3. Air Pollution Controls:

Waterspray bars are used at several points in the process. Water truck used for the storage

piles and roads. Control efficiency of 70% used for wet suppression. Fuel oil no. 2 with a maximum sulfur content of 0.5% by weight will be fired in the diesel engines to lessen the SO₂ emissions.

4. Project:

Process at the stone crushing facility is as follows:

Prior to being loaded into the jaw crusher, the material is run through a screen to separate the fines and dirt from the rocks. Rocks to be crushed are loaded into the feeder of the primary jaw crusher by a front end loader. From the jaw crusher it travels on conveyor belt to the screen. The screen separates the material into different sizes. Different sizes of materials will go to different stock piles via different conveyor belts. Oversize material returns it to the crusher. Water lines connected to a water tower allow water sprays at various locations. A water truck dampens the storage piles and roads to minimize fugitive dust. A weigh scale installed on each of the (3) radial stacker conveyors monitors the amount of stone being processed through the plant.

The 680 HP diesel engine powers the crusher and provides for other electrical needs of the stone processing plant.

Non-resetting hour meters installed on the diesel engine will record the hours of operation of the stone processing operation and portable power screening plant.

5. Applicable Requirements:

a. Hawaii Administrative Rules (HAR)

Chapter 11-59, Ambient Air Quality Standards

Chapter 11-60.1, Subchapter 1, General Requirements

Chapter 11-60.1, 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

Chapter 11-60.1, Subchapter 5, Covered Sources

Chapter 11-60.1, 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

Chapter 11-60.1, Subchapter 8, Standards of Performance for Stationary Sources

11-60.1-161, New Source Performance Standards

Chapter 11-60.1, Subchapter 10 – Field Citations

b. Annual Emissions Reporting:

- (1). Consolidated Emissions Reporting Requirements (CERR) apply if emissions from the facility equal or exceed levels specified in 40 CFR 51, Subpart A, Appendix A, shown in the table below. CERR do not apply because facility emissions are below the CERR

levels.

- (2). Although CERR do not apply, the Department requires annual emissions reporting if total facility-wide emissions of a particular pollutant exceed reporting levels indicated below. These reports are used internally and are not inputted into the CER database. Emissions reporting is required because facility-wide emissions of PM and PM-10 exceed Department of Health (DOH) reporting levels.

The table below summarizes the facility's emissions at its operational limit of 2,080 hr/yr compared to the various threshold levels.

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 (TPY) | | "In-house" Reporting Levels |
|-----------|--------------------------------------|--------------------|-------------------------------|-------------------------------|-----------------------------|
| | | | 1-Year Cycle (Type A Sources) | 3-year Cycle (Type B Sources) | |
| NOx | 17.53 | 40 | ≥ 250 | ≥ 100 | ≥ 25 |
| CO | 2.18 | 100 | ≥ 2500 | ≥ 100 | ≥ 250 |
| SO2 | 2.73 | 40 | ≥ 2500 | ≥ 100 | ≥ 25 |
| PM-10 | 22.39 | 15 | ≥ 250 | ≥ 100 | ≥ 25 |
| PM | 66.15 | 25 | -- | -- | ≥ 25 |
| VOC | 0.58 | 40 | ≥ 250 | ≥ 100 | ≥ 25 |
| HAPs | 0.03 | -- | -- | -- | ≥ 5 |

^a Based on 2,080 hr/yr operations for following equipment at one site:

1 DEGs-- 680 HP Cummins; 4.34 Mmbtu/hr

Crusher-- 450 TPH Eagle secondary crusher

Screen-- 500 TPH Powerscreen Turbo Chieftain

c. Compliance Data System (CDS)

CDS is an inventory system for covered sources subject to annual inspections. This source is subject to CDS because this facility is a covered source.

d. New Source Performance Standards (NSPS)

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 Nonmetallic Mineral Processing Plants

The stone processing plant is subject to NSPS Subpart OOO, since the manufacture dates of the Simplicity primary crusher and the Eagle secondary crusher are both after August 1983 (NSPS trigger date of Subpart OOO) and the stone processing plant has a maximum capacity of greater than 150 TPH.

The proposed 500 TPH Chieftain screening plant is also subject to Subpart OOO because it

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was manufactured after August 1983 and will be used together with the stone processing plant periodically. Note: 40 CFR part 60 subpart IIII Standards of Performance for Stationary Combustion Ignition Internal Combustion Engines is not applicable for the 680 HP diesel engine because it was manufactured before April 1, 2006.

e. PSD Applicability (HAR Chapter 11-60.1 Air Pollution Control, Subchapter. 7 PSD Review)

PSD applies to major stationary sources in an attainment area which emit or have the potential to emit 250 TPY (or 100 TPY for 28 named source categories) of any regulated pollutant, or to such sources making a major modification involving a significant net emissions. 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.

f. MACT Requirements (40 CFR Part 63)

MACT is not applicable, because the facility is not a major source of hazardous air pollutants, nor does the facility belong to a source category for which a standard has been promulgated under 40 CFR Part 63.

g. NESHAP Requirements (40 CFR Part 61 & 63)

The facility is not subject to any standard under 40 CFR Part 61 and 63. Note: 40 CFR Part 63 subpart ZZZZ is not applicable because the total facility Hazardous Air Pollutants emitted are below the requirement.

h. BACT Requirements

BACT analysis applies to new facilities or modifications to existing facilities which exceed significant emission levels. Modification to this existing facility involves the removal of the 730 TPH jaw crusher with 503 HP diesel engine which does not result in any increase in emissions. Thus, a BACT analysis is not applicable.

i. Compliance Assurance Monitoring (CAM) Requirements (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 stationary 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.

Emission units are any part or activity of a stationary source that emits or has the potential to emit any air pollutant. The facility is exempt from CAM provisions because this source is not a major source.

6. Insignificant Activities:

The following are insignificant activities at the facility:

- 1 - 1,000 gallon diesel fuel storage tank;
- 1 - 500 gallon diesel fuel storage tank;
- 1 - 74 gallon diesel fuel storage tank (for the Chieftain screen's diesel engine);
- 1 - 124 gallon hydraulic fluid tank (for the Chieftain screen).

HAR 11-60.1-82(f)(1) deems as insignificant 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.

- 1 - Duetz diesel engine runs the Turbo Chieftain 500 TPH power screen. Consumes a maximum of 5.57 gal/hr of diesel fuel no. 2, with a heating value of 137,030 Btu/gal and wt. of 7.1 lb/gal (per AP-42, Section 3.3/3.4) which yields 0.763 MMBtu/hr.

HAR 11-60.1-82(f)(2) deems as insignificant, fuel burning equipment (other than smoke house generators) less than 1 MMBtu/hr, except where the total heat input capacity of all individually insignificant equipment exceeds 5 MMBtu/hr when operated within the facility and controlled by a single owner or operator.

The above insignificant activities are subject to the Special Conditions in Attachment II - INSIG.

7. Alternative Operating Scenarios:

The applicant requested that an alternate operating scenario to allow the permitted diesel engine (680 HP Cummins DE) 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:

Fugitive dust emissions are generated from the work yard (vehicle traffic on unpaved roads and storage piles), quarrying, truck loading and unloading operations, conveyors, crusher, and a screening plant. Point source emissions of NO_x (Nitrogen Oxides), SO₂ (Sulfur Dioxides), CO (Carbon Monoxide), VOC (Volatile Organic Compounds), PM, and PM₁₀ are generated by the diesel engines. Emissions were calculated assuming the worst-case scenario where the 500 TPH Chieftain screen is operated in conjunction with the stone processing plant, and all the equipment are operating at their maximum material process rates.

Rock Crushing Operations.

Particulate matter emissions from crushed stone processing at the facility are summarized below and calculations are shown in Enclosure (1). Control efficiencies of 70% were assumed at the crushers and at all loading and transfer points in the crushing process. Emission calculations were based on the plant's equipment listed below operating at their maximum capacities at an unrestricted 8,760 hr/yr, and for 2,080 hrs/yr per the applicant's proposal.

| <u>Equipment</u> | <u>Description</u> | <u>Max. mat'l Rate (TPH)</u> |
|------------------|--------------------|------------------------------|
| Simplicity | Grizzly feeder | 200 |

| | | |
|-------------|--------------------|-----|
| Eagle Jumbo | Secondary crusher | 450 |
| Simplicity | 3-deck screen | 200 |
| Conveyors | 14 transfer points | -- |

| SUMMARY- Rock Crushing | | |
|-------------------------------|------------------------|-------------|
| Pollutant | Emissions (TPY) | |
| | 8,760 hr/yr | 2,080 hr/yr |
| PM | 43.05 | 10.22 |

| | | |
|--------|-------|------|
| PM-10 | 15.79 | 3.75 |
| PM-2.5 | 6.48 | 1.54 |

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

Screening Operations.

PM emissions from the screening process are summarized below and calculations are shown in Enclosure (2). Control efficiencies of 70% were assumed at the screen and at all loading and transfer points in the screening process. Emission calculations were based on the maximum capacity of the Turbo Chieftain screen (500 TPH) operating unrestricted 8,760 hr/yr and 2,080 hrs/yr per the applicant's proposal.

Summary -- Screening Operations

| Pollutant | Emissions (TPY) | |
|------------------|------------------------|-------------|
| | 8,760 hr/yr | 2,080 hr/yr |
| PM | 24.47 | 5.81 |
| PM-10 | 8.68 | 2.06 |
| PM-2.5 | 3.67 | 0.87 |

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

Stockpiles and Aggregate Handling

Worst case emissions from aggregate handling and storage piles were calculated for both the crushing and screening operations. Calculations were based on the highest maximum capacity of the crusher (450 TPH) and the maximum capacity of the screen (500 TPH), operating at 8,760 hr/yr (unrestricted) and at 2,080 hr/yr (proposed limit by the applicant). A water spray efficiency of 70% was also assumed in all cases. Particulate emissions are summarized below and shown in Enclosure (3). All emissions were calculated using AP-42, Section 13.2.4 (1/95), Aggregate Handling and Storage Piles.

Stockpile Emissions from Rock Crushing Operations

| Pollutant | Material Rate (TPH) | Emissions (TPY) | |
|------------------|----------------------------|------------------------|-------------|
| | | 8,760 hr/yr | 2,080 hr/yr |
| PM-2.5 | 450 | 2.48 | 0.59 |
| PM-10 | 450 | 7.92 | 1.88 |
| PM | 450 | 16.73 | 3.97 |

Stockpile Emissions from Power Screening Operations

| Pollutant | Material Rate (TPH) | Emissions (TPY) | |
|------------------|----------------------------|------------------------|-------------|
| | | 8,760 hr/yr | 2,080 hr/yr |
| PM-2.5 | 500 | 2.77 | 0.66 |
| PM-10 | 500 | 8.80 | 2.09 |
| PM | 500 | 18.62 | 4.42 |

Combined Stockpile Emissions from Crushing & Screening Operations

| Pollutant | Emissions (TPY) | |
|------------------|------------------------|-------------|
| | 8,760 hr/yr | 2,080 hr/yr |
| PM | 35.36 | 8.4 |
| PM-10 | 16.72 | 3.97 |
| PM-2.5 | 5.25 | 1.25 |

Vehicle Travel on Unpaved Roads

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

- a. Calculations for vehicle miles traveled (VMT) per year were based 0.4 miles round-trip travel per load into and out of the facility, an average truck's load capacity of 15 tons, and the maximum production rate of the facility (500 TPH) for conservatism.

| Operating hrs/yr | VMT (Miles/year) | |
|------------------|--------------------|---------------------|
| | Crushing (450 TPH) | Screening (500 TPH) |
| 8760 | 105120 | 116800 |
| 2080 | 24960 | 27733 |

- b. An s (silt content of road) value of 10% for a processing plant road.
- d. A W (mean vehicle weight) value of 33.5 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 above criteria, and are shown in enclosure (3) and summarized as follows:

Emissions from Vehicle Travel on Unpaved Roads

| Facility | Pollutant | EF (lb/VMT) | Unlimited (8,760 hr/yr) | | Unlimited (2,080 hr/yr) | |
|-------------------------------|-----------|-------------|-------------------------|----------------|-------------------------|----------------|
| | | | VMT (miles/yr) | Emission (TPY) | VMT (miles/yr) | Emission (TPY) |
| Crushing 450 TPH | PM-2.5 | 0.450 | 105,120 | 7.09 | 24,960 | 1.68 |
| | PM-10 | 2.933 | 105,120 | 46.25 | 24,960 | 10.98 |
| | PM | 9.931 | 105,120 | 156.59 | 24,960 | 37.18 |
| Screening Plant 500 TPH | PM-2.5 | 0.450 | 116,800 | 7.88 | 27,733 | 1.87 |
| | PM-10 | 2.933 | 116,800 | 51.39 | 27,733 | 12.20 |
| | PM | 9.931 | 116,800 | 173.99 | 27,733 | 41.31 |

If crusher and screener are operating at same facility, amount of material trucked is limited to material thruput at the facility. The highest value which is "screening" was used.

Diesel Engine Emissions.

- a. Emissions from the crusher's 680 HP Cummins diesel engine are based on the following and are shown in enclosure (5) and summarized in the table below:
 - Fuel consumption rate of 31.7 gal/hr.
 - Diesel fuel has a heating value of 137,000 BTU/gal and contains 0.5% Sulfur.

Emissions from 680 HP Cummins diesel engine

| Pollutant | Emission (lb/hr) | Emission (TPY) | |
|------------------------------|------------------|----------------------------------|-----------------------------|
| | | w/ No Permit Limit (8,760 hr/yr) | Permit Limits (2,080 hr/yr) |
| NO _x ^b | 13.492 | 59.095 | 14.032 |
| CO ^b | 1.379 | 6.040 | 1.434 |
| SO ₂ | 2.233 | 9.779 | 2.322 |
| PM-2.5 ^a | 0.135 | 0.591 | 0.140 |
| PM-10 ^b | 0.150 | 0.657 | 0.156 |
| PM ^b | 0.150 | 0.657 | 0.156 |
| TOC ^b | 0.277 | 1.213 | 0.288 |
| HAPs | | 8.22E-02 | 1.95E-02 |

^a PM-2.5 = 90% of PM (AP 42, Appendix B-2, pg B.2-11, 9/90)

^b Emission rates for NO_x, CO, PM and HC are from mfg's exhaust chemistry provided by applicant.

b. Emissions from the Turbo Chieftain screen's exempt 109 HP Duetz diesel engine are based on the following and are shown in enclosure (5) and summarized in the table below:

- Fuel consumption rate of 5.57 gal/hr.
- Diesel fuel has a heating value of 137,000 BTU/gal and contains 0.5% Sulfur.

Emissions from exempt 109 HP Duetz diesel engine

| Pollutant | Emission (lb/hr) | Emission (TPY) | |
|---------------------|------------------|-------------------------------|----------------------------|
| | | No Permit Limit (8,760 hr/yr) | Permit Limit (2,080 hr/yr) |
| NOX | 3.365 | 14.74 | 3.50 |
| CO | 0.725 | 3.17 | 0.75 |
| SO ₂ | 0.392 | 1.72 | 0.41 |
| PM-2.5 ^a | 0.213 | 0.93 | 0.22 |
| PM-10 | 0.237 | 1.04 | 0.25 |
| PM | 0.237 | 1.04 | 0.25 |
| TOC | 0.275 | 1.20 | 0.29 |
| HAPs | | 2.31E-02 | 5.48E-03 |

^a PM-2.5 = 90% of PM (AP 42, Appendix B-2, pg B.2-11, 9/90)

^b Emission rates for NO_x, CO, PM and HC are from mfg's exhaust chemistry provided by applicant.

Facility-wide Emissions

Facility-wide emissions from the facility operating 2,080 hr/yr are tabulated below and at enclosure (6). The worst-case scenario of all of the applicant's equipment operating at the same site was assumed in calculating facility-wide emissions.

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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. The maximum potential emissions of the facility, when operating within the limit of 2,080 hrs/yr, do not exceed major source levels as required by regulations. The tabulation shows that the majority of emissions are particulate matter, fugitive in nature, and are mostly generated by vehicle traffic on the unpaved roads.

| FACILITY-WIDE EMISSIONS (TPY)-- Operating 2,080 Hr/yr | | | | | | | |
|---|---------------------|----------------------|-----------------|----------------|-----------|----------------|--------------------------------------|
| Pollutant | INSIG Diesel Engine | 680 HP Diesel Engine | 450 TPH Crusher | 500 TPH Screen | Stockpile | Vehicle Travel | Total Emissions (Excluding Insig DE) |
| NOx | 3.50 | 14.03 | -- | -- | -- | -- | 17.53 |
| CO | 0.75 | 1.43 | -- | -- | -- | -- | 2.18 |
| SO2 | 0.41 | 2.32 | -- | -- | -- | -- | 2.73 |
| PM-2.5 | 0.22 | 0.14 | 1.54 | 0.87 | 1.25 | 1.87 | 5.89 |
| PM-10 | 0.25 | 0.16 | 3.75 | 2.06 | 3.97 | 12.20 | 22.39 |
| PM | 0.25 | 0.16 | 10.22 | 5.81 | 8.40 | 41.31 | 66.15 |
| VOC | 0.29 | 0.29 | -- | -- | -- | -- | 0.58 |
| HAPs | 5.48E-03 | 0.020 | -- | -- | -- | -- | 0.03 |

9. Synthetic Minor Source:

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 non-major through federally enforceable permit conditions. This facility is a synthetic minor, since emissions would exceed major source levels (100 TPY) for NOx, PM and PM-10 if operated without permit limits. (See table below)

| FACILITY-WIDE EMISSIONS (TPY)-- Operating 8,760 Hr/yr | | | | | | | |
|---|---------------------|----------------------|-----------------|----------------|-----------|----------------|--------------------------------------|
| Pollutant | INSIG Diesel Engine | 680 HP Diesel Engine | 450 TPH Crusher | 500 TPH Screen | Stockpile | Vehicle Travel | Total Emissions (Excluding Insig DE) |
| NOx | 14.74 | 59.09 | -- | -- | -- | -- | 73.83 |
| CO | 3.17 | 6.04 | -- | -- | -- | -- | 9.21 |
| SO2 | 1.72 | 9.77 | -- | -- | -- | -- | 11.49 |
| PM-2.5 | 0.93 | 0.59 | 6.48 | 3.67 | 5.25 | 7.88 | 24.81 |
| PM-10 | 1.04 | 0.66 | 15.79 | 8.68 | 16.72 | 51.39 | 94.27 |
| PM | 1.04 | 0.66 | 43.05 | 24.47 | 35.36 | 173.99 | 278.57 |
| VOC | 0.29 | 1.21 | -- | -- | -- | -- | 1.50 |
| HAPs | 2.31E-02 | 0.082 | -- | -- | -- | -- | 0.11 |

10. Air Quality Assessment:

Screen3 modeling program was used by the Department of Health (DOH) during the initial permit application process to predict concentration levels from the 680 HP diesel engine running the stone processing plant in complex (greatest impacts in complex terrain valley/simple) terrain, since the nearest ambient air is 126 meters away on the side of the valley.

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All model calculations were obtained using the regulatory default mode. Rural land use was assumed, and default meteorological conditions were used. Building downwash was not assumed from the jaw crusher for which the diesel engine stack height does not meet Good Engineering Practice (GEP) stack height guidelines (applicant's GEP analysis), because concentrations are higher without the downwash impacts.

The results of the Air Quality Impact Analysis (AQIA) in the original permit review showed that the emissions impact from the facility will comply with State and Federal ambient air quality standards (AAQS). The AAQS for nitrogen dioxide (NO₂) were met by including an hour limit in the original permit: "The total operating hours of the stone processing plant shall not exceed 2,496 hours in any rolling twelve (12) month period." Because the facility is operating in the same location (Waimanalo Gulch, Oahu) with the same 680 HP diesel engine, and with a proposed lower hour limit of 2,080 hrs/year, another AQIA is not necessary for this application review.

The DOH air modeling guidance does not require an air quality impact analysis for fugitive emissions and intermittent releases of particulates from sources such as the screening plant and stone processing plant.

11. Significant Permit Conditions:

The stone processing plant (including the primary crusher, secondary crusher, 3-deck screen, and conveyor transfer points, as well as the Turbo Chieftain screen, (if used together with the crusher) is subject to conditions of NSPS, 40 CFR Part 60 Subpart OOO. Applicant will meet federal and state regulations by having water sprays in the stone processing plant. The following conditions shall apply:

Condition: The facility, including the stone processing facility and the portable screening plant, shall be limited to operating hours of 2,080 hours in any rolling twelve month period.

Purpose: This operation limit was proposed by the applicant based on his past and anticipated operations. This restriction is required to meet NAAQS and SAAQS for NO₂, and to keep NO_x, PM and PM-10 emissions under 100 TPY, which is a requirement of temporary covered source facilities.

Condition: The 680 HP and the insignificant 109 HP diesel engines shall have hour meters to record the engines' running time.

Purpose: Condition is required to monitor the facility's equipment operational limit of 2,080 hours per rolling 12-month period. The 680 HP diesel engine, the 450 TPH rock crusher, and the 500 TPH screen are all subject to this operational limit.

12. Conclusion and Recommendations:

West Oahu Aggregate Company, Incorporated, currently operates a stone processing plant permitted under CSP No. 0041-01-CT. The renewal and modification of this permit will allow the continued operation of the plant with existing diesel engine and portable power screening plant.

Conservatism used in the emissions estimates includes the following:

- Used the maximum capacities of the equipment when calculating emissions from them.
- According to the applicant, these maximum production rates are about 2 to 3 times greater than the actual throughput rates (actual production rate is around 200 TPH).

Based on the information supplied by West Oahu Aggregate Company, Incorporated, it is the preliminary determination of the DOH that the proposed project will not cause or contribute to a violation of any State or National ambient air quality standard. Renewal and modification of the Covered Source Permit is recommended based on the review of the information provided by the applicant and subject to significant permit conditions, public comments, and USEPA review. Issuance of this permit renewal and modification will supersede Covered Source Permit (CSP) No. **0041-01-CT** in its entirety.

Ryan Go 4/1/2009