

CSP 0036-01-CT

TEMPORARY COVERED SOURCE AIR PERMIT (CSP) ENGINEERING REVIEW
RENEWAL APPLICATION NO. 0036-07

REVIEWER PR
DATE 13 OCT 2008

FACILITY Grace Pacific Corporation
186 TPH Asphalt Plant

LOCATION Halawa Valley Road, Aiea, Oahu

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EQUIPMENT One (1) 186 TPH Astec Drum Mixer
Model No. PDM-636-C, Serial No. 85-172;
Manufacturing Date = N/A;

One (1) 655 kW Detroit Diesel Engine
Model No. DDC 655, Serial No. 16 VA 019208
Fuel Consumption = 51.9 gal/hr; Various Fuels
Exhaust Diameter = 0.1016m (twin stack), Height = 6.7m
Velocity = 49.86 m/s; Actual Flow Rate = 1.617 m³/s (per stack); Temp = 705K

One (1) Astec Baghouse
Model No. PBH-30

One (1) 12,000 CFM Astec Fiber Mist Collector
Model No. BSC-16-FBF, Serial No. 06-005;
Manufacturing Date = 2006;

PERMIT BACKGROUND

The applicant has submitted a renewal for temporary CSP 0036-01-CT. With the renewal application Grace Pacific Corporation certifies that no changes have been made in the design or operation of the source as proposed in the initial and any subsequent covered source permit or modification applications.

PROCESS BACKGROUND

Process: SICC 2951

Virgin aggregate material and RAP material are stored in stockpiles on the site. The different sized aggregate materials are transferred to the cold feed bins by way of front end loaders. From the feed bins, a conveyor transports the aggregate to the drum mixer/dryer on a charging belt. A weigh bridge system, which is located near the mid-point of the charging belt, measures the amount of aggregate, in tons per hour, being feed into the drum mixer/dryer.

RAP is transferred to the drum mixer/dryer by way of a charging conveyor equipped with a weigh bridge system, which measures the amount of RAP in tons per hour.

Liquid asphalt cement is stored in a 25,000 gallon storage tank, which is heated by way of a fully automatic electric hot oil heater. Asphalt cement is pumped to the drum mixer as required.

The drum-mixing process heats and blends the aggregate with asphalt cement. The drum mixer exhausts through a baghouse to control particulate emissions. The final product of HMA from the drum mixer is transported by a conveyor to a self-erecting surge bin (SEB) for temporary storage prior to truck loadout. Emissions from the SEB and truck loadout operations are vented to a fiberbed mist eliminator to control organic and inorganic particulate emissions. Other facility emissions occur from raw material storage piles and vehicle travel on paved roads.

The local utility grid supplies electricity to all electrical motors, tank heaters, and lighting in the facility. The DEG is available to support plant operations during time when the grid electricity is not available.

The entire plant is controlled by an operator from the control house. A control system, implemented by computers, automatically regulates the flows of raw materials based on the mix formula and production rate set by the operator. The flow of raw materials are synchronized to allow the computer to adjust the flow of material.

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 New Source Performance Standards

Subchapter 10, Field Citations

This source is **subject to NSPS** (New Source Performance Standards).

40 CFR Part 60, Subpart A – General Provisions

40 CFR Part 60, Subpart I – Standards of Performance for Hot Mix Asphalt Plants

This source is **not subject to NESHAPS** (National Emission Standards for Hazardous Air Pollutants for Source Categories) as no hazardous air pollutants are emitted at significant levels (≥ 10 TPY 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) or 40 CFR 63 applicable to this facility.

This source is **not subject to MACT** (Maximum Achievable Control Technology) since the source is not a major source of hazardous air pollutants (HAPS) emissions (>10 TPY single hap or >25 TPY for total haps).

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; (criteria air pollutant > 100 or 250 TPY as applicable).

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 CERR** (Consolidated Emissions Reporting Requirements) since 40 CFR Part 51, Subpart A – Emissions Inventory Reporting Requirements, determines CERR based on facility wide emissions of each air pollutant at the CERR triggering levels. The emissions do not exceed respective CERR threshold levels. As such, emissions data will not be required to be inputted into the National Emissions Inventory (NEI) database.

The Clean Air Branch requests annual emissions reporting from those facilities that have facility wide emissions exceeding the DOH reporting level(s). Based on current emissions, the facility **is subject to annual emissions reporting** due to *NOX* exceeding the DOH reporting thresholds.

This source is **not subject to BACT** (Best Available Control Technology) analysis because this is an existing source with no proposed modifications. BACT analysis is required for new noncovered sources and significant modifications to noncovered sources that have the potential to emit or increase emissions above significant levels.

TOTAL EMISSIONS

Total facility emissions are summarized within the immediate table below.

Table 1: Total Facility Emissions and Trigger Levels (TPY)					
Pollutant	Proposed Emissions based on OPR LIMITS	Emissions based on 8,760 hr/yr (ANNUAL – NO LIMIT)	Significant BACT Level	CERR Level	DOH Level
CO	54.3	54.3	100	1000	250
NOx	44.3	44.3	40	100	25
PM-30(TSP)	14.1	9,135	25	-	25
PM-10	10.7	--	15	100	25
PM-2.5	10.7	--	-	100	-
SOx	8.8	8.8	40	100	25
TOC/VOC	16.6	16.26	40	100	25
HAPs	3.0	3.0	-	5	5

Facility emissions determined in the 10/22/04 review of Grace Pacific's renewal application remain unchanged except for a decrease in PM, PM-10, and PM-2.5 emissions from load-out and silo-filling activities.

Table 2: Facility Emissions Breakdown (TPY)							
Pollutant	Drum Mixer	Cooking Oil	DEG	Agg. Handling & Piles	Load-Out	Silo-Filling	Total
CO	42.32	4.70	6.42	--	0.44	0.38	54.3
NOx	17.90	2.18	24.18	--	--	--	44.3
PM	10.74	--	0.53	2.77	0.01	0.01	14.1
PM-10	7.49	--	0.43	2.77	0.01	0.01	10.7
PM-2.5	7.49	--	0.43	2.77	0.01	0.01	10.7
SO2	4.93	--	3.82	--	--	--	8.8
VOC/TOC	10.42	0.29	0.68	--	1.27	3.97	16.6
HAPS	2.91	--	0.01	--	0.03	0.06	3.0

Proposed emissions are based on the following hours of operation:

Equipment	Limited Hours of Operation
Drum Mixer	3,500 hr/yr
DEG	2,080 hr/yr

INSIGNIFICANT ACTIVITIES (CSP) / EXEMPTIONS (NSP)

Two (2) Fuel Storage Tanks
Capacity = 5,000 gal

One (1) Asphalt Storage Tank
Capacity = 25,000 gal

One (1) Astec Hot Oil Heater
Model No. HAO-25PE

ALTERNATIVE OPERATING SCENERIOS

None.

FACILITY EMISSIONS CALCULATIONS

Note: All (**UPDATED**) emission factors were obtained and verified from AP-42, Table 3.3-1 10/96 edition, Emission Factors For Uncontrolled Gasoline and Diesel Industrial Engines. Sulfur emission factor from AP-42, Table 3.4-1 10/96 edition, Gaseous Emission Factors for Large Stationary Diesel and all Stationary Dual-Fuel Engines. Emission Factors For Hot Drum Mixer through Baghouse from AP-42, Table 11.1-3 4/04 edition. Emission Factors For SEB Filling Operations through Fiberbed Mist Collectot from AP-42, Table 11.1-14 and Table 11.1-15 4/04 edition.

AIR QUALITY ASSESSMENT

An ambient air quality analysis (AAQA) is generally performed for new or modified sources. Since no modification that will increase emissions is proposed for this existing facility, an assessment was not performed for this application review.

Facility emissions determined in the 10/22/04, 2006, and October 2008 review of Grace Pacific's renewal application remain unchanged except for a decrease in PM, PM-10, and PM-2.5 emissions from load-out and silo-filling activities.

FACILITY IDENTIFICATION

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, or is subject to NSPS requirements. This facility is **not a major source** since potential emissions, considering operating limits and pollution controls, are below these levels.

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. This facility **is a synthetic minor source** because potential emissions do exceed the major source threshold when the facility is operated at its maximum capacity continuously for 8,760 hours per year.

CONCLUSION

Based on the information submitted by Grace Pacific Corporation, it is the determination of the Department of Health (DOH) that the proposed facility will be in compliance with the Hawaii Administrative Rules (HAR), Chapter 11-60.1 and State and Federal ambient air quality standards.

Issuance of temporary CSP No. 0036-01-CT is recommended based on the proposed operating restrictions by the applicant to reduce NOx emissions and meet state ambient air quality standards (SAAQS).