ADMINISTRATIVE RECORD

Grace Pacific LLC

Application No. 0923-01 for Initial Permit

400 TPH Hot Mix Asphalt Plant

Located At: Various Temporary Sties, State of Hawaii

Temporary CSP No. 0923-01-CT

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Public Notice

REQUEST FOR PUBLIC COMMENTS
ON DRAFT AIR PERMITS
REGULATING THE EMISSIONS OF AIR POLLUTANTS

(Docket No. 25-CA-PA-16)

Pursuant to Hawaii Revised Statutes (HRS), Chapter 342B-13 and Hawaii Administrative Rules (HAR), Chapter 11-60.1, the Department of Health, State of Hawaii (DOH), is requesting public comments on the following **DRAFT PERMITS** presently under review for:

(1) **Temporary Covered Source Permit (CSP) No. 0923-01-CT**
Application No. 0923-01 for Initial Permit
Grace Pacific LLC
400 TPH Hot Mix Asphalt Plant
Located At: Various Temporary Sites, State of Hawaii
Initial Location: Makakilo Quarry
91-920 Farrington Highway, Kapolei, Island of Oahu
UTM: 596,475 m E, 2,362,050 m N (NAD-83)

(2) **Covered Source Permit (CSP) No. 0089-01-C**
Application No. 0089-10 for Renewal
Par Hawaii Refining, LLC
Maui Terminal
Petroleum Bulk Loading Terminal
Located At: 140-A Hobron Avenue, Kahului, Maui

The **DRAFT PERMIT** is described as follows:

(1) **Temporary Covered Source Permit (CSP) No. 0923-01-CT**

The issuance of Temporary CSP No. 0923-01-CT will grant conditional approval for the operation of a 400 TPH Hot Mix Asphalt Plant powered by a 1,170 kW Volvo Penta diesel engine generator (DEG). The drum mixer/dryer is equipped with a high efficiency baghouse to control particulate matter and water suppression will be used as necessary to minimize fugitive emissions from aggregate handling and storage activities. The drum mixer/dryer and DEG will fire diesel fuel oil No. 2 with a sulfur content no greater than 0.0015% by weight. The Hot Mix Asphalt Plant is subject to 40 Code of Federal Regulations (CFR) Part 60, Subpart I, Standards of Performance for Hot Mix Asphalt Facilities. The 1,170 kW DEG is subject to 40 CFR Part 60, Subpart IIII, Standards of Performance for Stationary Compression Ignition Internal Combustion Engines, and 40 CFR Part 63, Subpart ZZZZ, National Emission Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines.

(2) **Covered Source Permit (CSP) No. 0089-01-C**

The renewal for CSP No. 0089-01-C would grant conditional approval for the continued operation of an existing petroleum loading facility. There are no proposed changes to the facility, except that the applicant has decided not to convert tank No. 2 into an internal floating roof tank, which would comply with NSPS Subpart Kb and allow the storage of gasoline. Tank No. 2 is to remain a fixed roof tank. Petroleum storage tank Nos. 3, 5, 6, and 7 are subject to 40 Code of Federal Regulations (CFR) Part 60, Subpart Kb, Standards of Performance for Volatile Organic Liquid Storage Vessels (including Petroleum Liquid Storage Vessels) for Which Construction, Reconstruction, or Modification Commenced after July 23, 1984. The petroleum truck load rack is subject to 40 CFR Part 60, Subpart XX, Standards of Performance for Bulk Gasoline Terminals. Petroleum storage tank Nos. 3, 5, 6, and 7 and the petroleum truck load rack are both subject to 40 CFR Part 63, Subpart BBBBBB, National Emission Standards for Hazardous Air Pollutants for Source Category: Gasoline Distribution Bulk Terminals, Bulk Plant, and Pipeline Facilities. This permit, if issued, will supersede CSP No. 0089-01-C issued on February 2, 2018, in its entirety.

The **ADMINISTRATIVE RECORDS**, consisting of the **APPLICATION** and non-confidential supporting material from the applicant, the permit review summary, and the **DRAFT PERMIT**, are available for public inspection online at: http://health.hawaii.gov/cab/public-notices/ and during regular office hours, Monday through Friday, 7:45 a.m. to 4:15 p.m., at the following locations:

OAHU:

State of Hawaii
Clean Air Branch
2827 Waimano Home Road, #130
Pearl City, Hawaii 96782

All comments on the draft permits and any request for a public hearing must be in writing, addressed to the Clean Air Branch at the above address and must be postmarked or received by **October 24, 2025.**

Any person may request a public hearing by submitting a written request that explains the party's interest and the reasons why a hearing is warranted. The DOH may hold a public hearing if a hearing would aid in DOH's decision. If a public hearing is warranted, a public notice for the hearing will be published at least thirty (30) days in advance of the hearing.

Interested persons may obtain copies of the administrative record or parts thereof at a copying cost of five (5) cents per page. Please send written requests to the Clean Air Branch listed above or call Mr. Evan Fujimoto at the Clean Air Branch at (808) 586-4200.

Comments on the draft permit should address, but need not be limited to, the permit conditions and the facility's compliance with federal and state air pollution laws, including: (1) the National and State Ambient Air Quality Standards; and (2) HRS, Chapter 342B and HAR, Chapter 11-60.1.

The DOH will make a final decision on the permits after considering all comments and will send notice of the final decision to each person who has submitted comments or requested such notice.

KENNETH S. FINK, MD, MGA, MPH
Director of Health

Draft Permit

DRAFT

CERTIFIED MAIL 25-xxxE CAB
RETURN RECEIPT REQUESTED File No. 0923
(XXXX XXXX XXXX XXXX XXXX)

DATE

Mr. Scott Komatsu
Vice President, Materials
Grace Pacific LLC
P.O. Box 78
Honolulu, Hawaii 96810

Dear Mr. Komatsu:

SUBJECT: Temporary Covered Source Permit (CSP) No. 0923-01-CT
Application No. 0923-01 for Initial Permit
Grace Pacific LLC
400 TPH Hot Mix Asphalt Plant
Located At: Various Temporary Sites, State of Hawaii
Initial Location: Makakilo Quarry, 91-920 Farrington Highway, Kapolei, Island of Oahu
UTM: 596,475 m E, 2,362,050 m N (NAD-83)
Date of Expiration: DATE

The subject temporary CSP is issued in accordance with Hawaii Administrative Rules (HAR), Title 11, Chapter 60.1. The issuance of this permit is based on the plans and specifications that you submitted as part of your application received on December 20, 2024, and additional information received on January 21, 2025, April 7, 2025, July 1, 2025, and August 22, 2025. A receipt for the application filing fee of $1,000.00 is enclosed.

The temporary CSP is issued subject to the conditions/requirements set forth in the following attachments:

Attachment I: Standard Conditions
Attachment II: Special Conditions
Attachment II - INSIG: Special Conditions - Insignificant Activities
Attachment III: Annual Fee Requirements
Attachment IV: Annual Emissions Reporting Requirements

The following forms are enclosed for your use and submittal as required:

Annual Emissions Report Form: Hot Mix Asphalt Plant
Compliance Certification Form
Change of Location Request for a Temporary Source
Monitoring Report Form: HMA Production and Fuel Certification
Monitoring Report Form: Baghouse
Monitoring Report Form: Opacity Exceedances

The following are enclosed for your use in monitoring visible emissions:

Visible Emissions Form Requirements, State of Hawaii
Visible Emissions Form

This permit: (a) shall not in any manner affect the title of the premises upon which the equipment is to be located; (b) does not release the permittee from any liability for any loss due to personal injury or property damage caused by, resulting from or arising out of the design, installation, maintenance, or operation of the equipment; and (c) in no manner implies or suggests that the Department of Health, Clean Air Branch (herein after referred to as Department) or its officers, agents, or employees, assumes any liability, directly or indirectly, for any loss due to personal injury or property damage caused by, resulting from or arising out of the design, installation, maintenance, or operation of the equipment.

If you have any questions, please contact Mr. Evan Fujimoto of the Clean Air Branch at (808) 586-4200.

Sincerely,

JOANNA L. SETO, P.E., CHIEF
Environmental Management Division

EF:tkg

Enclosures

ATTACHMENT I: STANDARD CONDITIONS
TEMPORARY COVERED SOURCE PERMIT NO. 0923-01-CT

Issuance Date: DATE **Expiration Date: DATE**

This permit is granted in accordance with the HAR, Title 11, Chapter 60.1, Air Pollution Control, and is subject to the following standard conditions:

1. Unless specifically identified, the terms and conditions contained in this permit are consistent with the applicable requirement, including form, on which each term or condition is based.

   (Auth.: HAR §11-60.1-90)

2. This permit, or a copy thereof, shall be maintained at or near the source and shall be made available for inspection upon request. The permit shall not be willfully defaced, altered, forged, counterfeited, or falsified.

   (Auth.: HAR §11-60.1-6; SIP §11-60-11)[2]

3. This permit is not transferable whether by operation of law or otherwise, from person to person, from place to place, or from one piece of equipment to another without the approval of the Department, except as provided in HAR, Section 11-60.1-91.

   (Auth.: HAR §11-60.1-7; SIP §11-60-9)[2]

4. A request for transfer from person to person shall be made on forms furnished by the Department.

   (Auth.: HAR §11-60.1-7)

5. In the event of any changes in control or ownership of the facilities to be constructed or modified, this permit shall be binding on all subsequent owners and operators. The permittee shall notify the succeeding owner and operator of the existence of this permit and its conditions by letter, copies of which will be forwarded to the Department and the U.S. Environmental Protection Agency (EPA), Region 9.

   (Auth.: HAR §11-60.1-5, §11-60.1-7, §11-60.1-94)

6. The facility covered by this permit shall be constructed and operated in accordance with the application, and any information submitted as part of the application, for the CSP. There shall be no deviation unless additional or revised plans are submitted to and approved by the Department, and the permit is amended to allow such deviation.

   (Auth.: HAR §11-60.1-2, §11-60.1-4, §11-60.1-82, §11-60.1-84, §11-60.1-90)

7. This permit (a) does not release the permittee from compliance with other applicable statutes of the State of Hawaii, or with applicable local laws, regulations, or ordinances, and (b) shall not constitute, nor be construed to be an approval of the design of the covered source.

   (Auth.: HAR §11-60.1-5, §11-60.1-82)

8. The permittee shall comply with all the terms and conditions of this permit. Any permit noncompliance constitutes a violation of HAR, Chapter 11-60.1, and the Clean Air Act and is grounds for enforcement action; for permit termination, suspension, reopening, or amendment; or for denial of a permit renewal application.

   (Auth.: HAR §11-60.1-3, §11-60.1-10, §11-60.1-19, §11-60.1-90)

9. If any term or condition of this permit becomes invalid as a result of a challenge to a portion of this permit, the other terms and conditions of this permit shall not be affected and shall remain valid.

   (Auth.: HAR §11-60.1-90)

10. The permittee shall not use as a defense in an enforcement action that it would have been necessary to halt or reduce the permitted activity to maintain compliance with the terms and conditions of this permit.

    (Auth.: HAR §11-60.1-90)

11. This permit may be terminated, suspended, reopened, or amended for cause pursuant to HAR, Sections 11-60.1-10 and 11-60.1-98, and Hawaii Revised Statutes (HRS), Chapter 342B-27, after affording the permittee an opportunity for a hearing in accordance with HRS, Chapter 91.

    (Auth.: HAR §11-60.1-3, §11-60.1-10, §11-60.1-90, §11-60.1-98)

12. The filing of a request by the permittee for the termination, suspension, reopening, or amendment of this permit, or of a notification of planned changes or anticipated noncompliance does not stay any permit condition.

    (Auth.: HAR §11-60.1-90)

13. This permit does not convey any property rights of any sort, or any exclusive privilege.

    (Auth.: HAR §11-60.1-90)

14. The permittee shall notify the Department and U.S. EPA, Region 9, in writing of the following dates:

    a. The **anticipated date of initial start-up** for each emission unit of a new source or significant modification not more than sixty (60) days or less than thirty (30) days prior to such date;
    b. The **actual date of construction commencement** within fifteen (15) days after such date; and
    c. The **actual date of start-up** within fifteen (15) days after such date.

    (Auth.: HAR §11-60.1-90)

15. The permittee shall furnish, in a timely manner, any information or records requested in writing by the Department to determine whether cause exists for terminating, suspending, reopening, or amending this permit, or to determine compliance with this permit. Upon request, the permittee shall also furnish to the Department copies of records required to be kept by the permittee. For information claimed to be confidential, the Director of Health (Director) may require the permittee to furnish such records not only to the Department but also directly to the U.S. EPA, Region 9, along with a claim of confidentiality.

    (Auth.: HAR §11-60.1-14, §11-60.1-90)

16. The permittee shall notify the Department in writing, of the **intent to shut down air pollution control equipment for necessary scheduled maintenance** at least twenty-four (24) hours prior to the planned shutdown. The submittal of this notice shall not be a defense to an enforcement action. The notice shall include the following:

    a. Identification of the specific equipment to be taken out of service, as well as its location and permit number;
    b. The expected length of time that the air pollution control equipment will be out of service;
    c. The nature and quantity of emissions of air pollutants likely to be emitted during the shutdown period;
    d. Measures such as the use of off-shift labor and equipment that will be taken to minimize the length of the shutdown period; and
    e. The reasons why it would be impossible or impractical to shut down the source operation during the maintenance period.

    (Auth.: HAR §11-60.1-15; SIP §11-60-16)[2]

17. **In the event any emission unit, air pollution control equipment, or related equipment malfunctions or breaks down in such a manner as to cause the emission of air pollutants in violation of HAR, Chapter 11-60.1, or this permit**, the permittee shall immediately notify the Department of the malfunction or breakdown, unless the protection of personnel or public health or safety demands immediate attention to the malfunction or breakdown and makes such notification infeasible. In the latter case, the notice shall be provided as soon as practicable. Within five (5) working days of this initial notification, the permittee shall also submit, in writing, the following information:

    a. Identification of each affected emission point and each emission limit exceeded;
    b. Magnitude of each excess emission;
    c. Time and duration of each excess emission;
    d. Identity of the process or control equipment causing the excess emission;
    e. Cause and nature of each excess emission;
    f. Description of the steps taken to remedy the situation, prevent a recurrence, limit the excessive emissions, and assure that the malfunction or breakdown does not interfere with the attainment and maintenance of the National Ambient Air Quality Standards and State Ambient Air Quality Standards;

g. Documentation that the equipment or process was at all times maintained and operated in a manner consistent with good practice for minimizing emissions; and
h. A statement that the excess emissions are not part of a recurring pattern indicative of inadequate design, operation, or maintenance.

The submittal of these notices shall not be a defense to an enforcement action.

(Auth.: HAR §11-60.1-16; SIP §11-60-16)[2]

18. The permittee may request confidential treatment of any records in accordance with HAR, Section 11-60.1-14.

(Auth.: HAR §11-60.1-14, §11-60.1-90)

19. This permit shall become invalid with respect to the authorized construction if construction is not commenced as follows:

a. Within eighteen (18) months after the permit takes effect, is discontinued for a period of eighteen (18) months or more, or is not completed within a reasonable time.
b. For phased construction projects, each phase shall commence construction within eighteen (18) months of the projected and approved commencement dates in the permit. This provision shall be applicable only if the projected and approved commencement dates of each construction phase are defined in Attachment II, Special Conditions, of this permit.

(Auth.: HAR §11-60.1-9, §11-60.1-90)

20. The Department may extend the time periods specified in Standard Condition No. 19 upon a satisfactory showing that an extension is justified. Requests for an extension shall be submitted in writing to the Department.

(Auth.: HAR §11-60.1-9, §11-60.1-90)

21. The permittee shall submit fees in accordance with HAR, Chapter 11-60.1, Subchapter 6.

(Auth.: HAR §11-60.1-90)

22. All certifications shall be in accordance with HAR, Section 11-60.1-4.

(Auth.: HAR §11-60.1-4, HAR §11-60.1-90)

23. The permittee shall allow the Director, the Regional Administrator for the U.S. EPA and/or an authorized representative, upon presentation of credentials or other documents required by law:

    a. To enter the premises where a source is located or emission-related activity is conducted, or where records must be kept under the conditions of this permit and inspect at reasonable times all facilities, equipment, including monitoring and air pollution control equipment, practices, operations, or records covered under the terms and conditions of this permit and request copies of records or copy records required by this permit; and
    b. To sample or monitor at reasonable times substances or parameters to ensure compliance with this permit or applicable requirements of HAR, Chapter 11-60.1.

    (Auth.: HAR §11-60.1-11, §11-60.1-90)

24. Within thirty (30) days of **permanent discontinuance of the construction, modification, relocation, or operation of a covered source covered by this permit**, the discontinuance shall be reported in writing to the Department by a responsible official of the source.

    (Auth.: HAR §11-60.1-8; SIP §11-60-10)[2]

25. Each permit renewal application shall be submitted to the Department and the U.S. EPA, Region 9, no less than twelve (12) months and no more than eighteen (18) months prior to the permit expiration date. The Director may allow a permit renewal application to be submitted no less than six (6) months prior to the permit expiration date, if the Director determines that there is reasonable justification.

    (Auth.: HAR §11-60.1-101; 40 CFR §70.5(a)(1)(iii))[1]

26. The terms and conditions included in this permit, including any provision designed to limit a source's potential to emit, are federally enforceable unless such terms, conditions, or requirements are specifically designated as not federally enforceable.

    (Auth.: HAR §11-60.1-93)

27. The compliance plan and compliance certification submittal requirements shall be in accordance with HAR, Sections 11-60.1-85 and 11-60.1-86. As specified in HAR, Section 11-60.1-86, the compliance certification shall be submitted to the Department and the U.S. EPA, Region 9, once per year, or more frequently as set by any applicable requirement.

    (Auth.: HAR §11-60.1-90)

28. **Any document (including reports) required to be submitted by this permit shall be certified as being true, accurate, and complete by a responsible official in accordance with HAR, Sections 11-60.1-1 and 11-60.1-4, and shall be mailed to the following address:**

    State of Hawaii
    Clean Air Branch
    2827 Waimano Home Road, #130
    Pearl City, Hawaii 96782

    Upon request and as required by this permit, all correspondence to the State of Hawaii Department of Health associated with this temporary CSP shall have duplicate copies forwarded to:

    Manager
    Enforcement Division, Air Section
    U.S. Environment Protection Agency, Region 9
    75 Hawthorne Street, ENF-2-1
    San Francisco, CA 94105

    (Auth.: HAR §11-60.1-4, §11-60.1-90)

29. To determine compliance with submittal deadlines for time-sensitive documents, the postmark date of the document shall be used. If the document was hand-delivered, the date received ("stamped") at the Clean Air Branch shall be used to determine the submittal date.

    (Auth.: HAR §11-60.1-5, §11-60.1-90)

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[1]The citations to the Code of Federal Regulations (CFR) identified under a particular condition, indicate that the permit condition complies with the specified provision(s) of the CFR. Due to the integration of the preconstruction and operating permit requirements, permit conditions may incorporate more stringent requirements than those set forth in the CFR.

[2]The citations to the State Implementation Plan (SIP) identified under a particular condition, indicate that the permit condition complies with the specified provision(s) of the SIP.

ATTACHMENT II: SPECIAL CONDITIONS
TEMPORARY COVERED SOURCE PERMIT NO. 0923-01-CT

Issuance Date: DATE **Expiration Date: DATE**

In addition to the Standard Conditions of the temporary CSP, the following Special Conditions shall apply to the permitted facility:

Section A. Equipment Description

1. This permit encompasses the following equipment and associated appurtenances:

   400 TPH Hot Mix Asphalt Plant

   a. 400 TPH Astec double barrel drum mixer/dryer, Model No. RDB-9640, Serial No. 24-194-446982-4-1, with Astec Whisper Jet 110 MMBtu/hr burner, Model No. WJ-100U-O-LP-S, Serial No. 24-194-446982-1-1;
   b. Astec baghouse (pulse jet), Model No. RBH-78-14W, Serial No. 24-194-446982-7-1, servicing the double barrel drum mixer/dryer;
   c. 1,170 kW Volvo Penta diesel engine generator (DEG), Model No. NPV-1100GF, Comprised of two (2) 836 HP Volvo Penta diesel engines, Model No. TWD162GE, Serial No. 2016184304, and Model No. TWD162GE, Serial No. 2016184307;
   d. Six (6) compartment cold feed system, Model No. RCFS-1014-6, Serial No. 24-194-446982-1-1;
   e. Two (2) compartment cold feed system, Model No. RFRB-1014-2, Serial No. 24-194-446982-23-1;
   f. Astec Recycle Asphalt (RAP) scalping screen, Model No. 4x8 VALU KING, Serial No. 245741;
   g. Four (4) 100 ton storage silos, Serial Nos. 24-194-446982-9-1, 24-194-446982-10-1, 24-194-446982-13-1, and 24-194-446982-14-1; and
   h. Various Conveyors.

   (Auth.: HAR §11-60.1-3)

2. An identification tag or name plate shall be displayed on the equipment listed above to show model number, serial number, and manufacturer. The identification tag or name plate shall be permanently attached to the equipment at a conspicuous location.

   (Auth.: HAR §11-60.1-5, §11-60.1-90)

Section B. Applicable Federal Regulations

1. The hot mix asphalt plant is subject to the provisions of the following federal regulations:

   a. 40 Code of Federal Regulations (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 I, Standards of Performance for Hot Mix Asphalt Facilities.

(Auth.: HAR §11-60.1-3, §11-60.1-90, §11-60.1-161; 40 CFR §60.1, §60.690)[1]

2. The 1,170 kW DEG 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;
b. 40 CFR Part 60, Standards of Performance for New Stationary Sources, Subpart IIII, Standards of Performance for Stationary Compression Ignition (CI) Internal Combustion Engines (ICE);
c. 40 CFR CFR Part 63, National Emission Standards for Hazardous Air Pollutants for Source Categories, Subpart A, General Provisions; and
d. 40 CFR Part 63, National Emission Standards for Hazardous Air Pollutants for Source Categories, Subpart ZZZZ, National Emissions Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines.

(Auth.: HAR §11-60.1-3, §11-60.1-90, §11-60.1-161; 40 CFR §60.1, §60.4200, §63.1, §63.6585)[1]

3. The permittee shall comply with all of the applicable provisions of these standards, including all emission limits, notification, testing, monitoring, and reporting requirements. The major requirements of these standards are detailed in the Special Conditions of this permit.

(Auth.: HAR §11-60.1-3, §11-60.1-90, §11-60.1-161; 40 CFR Part 60)[1]

Section C. Operational and Emission Limitations

1. Operating Limits

a. The 400 TPH Hot Mix Asphalt Plant shall be limited to a maximum production rate of 540,000 tons of hot mix asphalt in any rolling twelve-month (12-month) period.

(Auth.: HAR §11-60.1-3, §11-60.1-5, §11-60.1-90)

2. Fuel Limits

a. The drum mixer/dryer shall be fired only on diesel fuel oil No. 2 with a maximum sulfur content not to exceed 0.0015% by weight.
b. DEG

i. The DEG shall be fired only on diesel fuel oil No. 2 with a maximum sulfur content not to exceed 0.0015% by weight; and

ii. A minimum cetane index of forty (40) or maximum aromatic content of thirty-five (35) volume percent.

(Auth.: HAR §11-60.1-3, §11-60.1-5, §11-60.1-38, §11-60.1-90)[1]

3. Particulate Matter Emission Limit

The permittee shall not discharge or cause the discharge into the atmosphere from the baghouse servicing the drum mixer/dryer, particulate matter in excess of ninety (90) mg/dscm (0.04 gr/dcsf).

(Auth.: HAR §11-60.1-3, §11-60.1-90, §11-60.1-161; 40 CFR §60.92)[1]

4. Baghouse

a. The baghouse servicing the drum mixer/dryer shall be operated at all times during operation of the drum mixer/dryer. The permittee shall not operate the drum mixer/dryer if a problem affecting baghouse control efficiency is observed at any time. The permittee shall investigate and correct the problem before resuming drum mixer/dryer operation.
b. The minimum stack height for the baghouse servicing the drum mixer/dryer shall be 9.14 meters (29.99 feet) above ground elevation.
c. The baghouse shall be operated within a pressure drop range of two (2) to six (6) inches of water.
d. The permittee shall follow a regular maintenance schedule as recommended by the manufacturer to ensure the following items of the baghouse are operating properly.

i. The filter bags are checked for any tears, holes, abrasions and scuffs, and are replaced as needed;
ii. The cleaning system is maintained and operated, as needed, to minimize particulate buildup or caking on the filter bags;
iii. The hopper is discharged in a timely manner to prevent excessive particulate buildup which could cause compaction, overflow, or plugging;
iv. Other miscellaneous items/equipment essential for effective baghouse operation are maintained; and
v. Routinely check for the presence of visible emissions (VE) from the baghouse during operations and replace filter bags as necessary if VE are observed.

(Auth.: HAR §11-60.1-3, §11-60.1-5, §11-60.1-90)

5. Visible Emissions

   For any six (6) minute averaging period, the DEG and baghouse servicing the drum mixer/dryer shall not exhibit VE of twenty percent (20%) opacity or greater, except as follows: during start-up, shutdown, or equipment breakdown, the DEG and baghouse servicing the drum mixer/dryer may exhibit VE not greater than sixty percent (60%) opacity for a period aggregating not more than six (6) minutes in any sixty (60) minute period.

   (Auth.: HAR §11-60.1-3, §11-60.1-32, §11-60.1-90; 40 CFR §60.92; SIP §11-60-24)[1,2]

6. Fugitive Dust

   a. The permittee shall not cause or permit fugitive dust to become airborne without taking reasonable precautions and shall not cause or permit the discharge of VE of fugitive dust beyond the lot line of the property boundary on which the emissions originate.
   b. The permittee shall take measures to control and minimize fugitive dust (e.g., wet suppression, enclosures, dust screens, etc.) at all material transfer points, stockpiles, plant roads, loading and unloading operations, and throughout the facility. The Department may at any time require the permittee to further abate fugitive dust emissions if an inspection indicates poor or insufficient control.
   c. Water spray systems shall be maintained and utilized, as necessary, during operation of the facility to minimize fugitive dust. The Department at any time may require continuous operation of the water sprays and/or additional water sprays or manual water spraying at pertinent locations if an inspection indicates that more fugitive dust control is needed.

   (Auth.: HAR §11-60.1-3, §11-60.1-5, §11-60.1-33, §11-60.1-90)

7. Maintenance

   The 400 TPH Hot Mix Asphalt Plant, including the drum mixer/dryer, baghouse, and DEG shall be properly maintained and kept in good operating condition at all times with scheduled inspections and maintenance as recommended by the manufacturer, and as needed.

   (Auth.: HAR §11-60.1-3, §11-60.1-5, §11-60.1-90)

8. Location Change

   a. The operation of the equipment covered by this temporary CSP shall involve at least one (1) location change during the term of this permit. **Moving within a single property is not considered a location change.**
   b. Location changes of the equipment shall be in accordance with Attachment II, Section G. For each change in location, the Department reserves the right to impose additional operational controls and restrictions if a site evaluation indicates the controls and/or restrictions are necessary.

   (Auth.: HAR §11-60.1-3, §11-60.1-81, §11-60.1-91)

9. Alternate Operating Scenario

   a. The permittee may replace the DEG with a temporary replacement unit if any repair reasonably warrants the removal of the DEG from its site (i.e., equipment failure, engine overhaul, or any major equipment problems requiring maintenance for efficient operation) and the following provisions are adhered to:

      i. A request for the temporary replacement unit shall be submitted in accordance with Attachment II, Special Condition No. E.7.a;
      ii. The temporary replacement unit must be similar in size with equal or lesser emissions with the exception of an increase in carbon monoxide (CO) emissions not to equal or exceed five (5) tons per year. The Department may allow the increase in CO emissions provided the permittee demonstrates the increase does not affect the source's major source status, compliance with the ambient air quality standards or result in the applicability of any new requirements;
      iii. The temporary replacement unit shall comply with all applicable conditions including all air pollution control equipment requirements, operating restrictions, and emission limits;
      iv. The installation and operation of the temporary replacement unit (and any approved successive replacements) shall not exceed twelve (12) consecutive months, such that the total period in which the DEG is removed from service does not exceed twelve (12) consecutive months;
      v. The DEG shall be repaired and returned to service at the same location in a timely manner; and
      vi. Removal and return information shall be submitted in accordance with Attachment II, Special Condition No. E.7.b.

   b. The Department may require an ambient air quality assessment of the temporary replacement unit, and/or provide a conditional approval to impose additional monitoring, testing, recordkeeping, and reporting requirements to ensure the temporary replacement unit is in compliance with the applicable requirements of the permitted unit being temporarily replaced.
   c. Records shall be maintained in accordance with Attachment II, Special Condition No. D.7.
   d. The terms and conditions under each operating scenario shall meet all applicable requirements, including special conditions of this permit.

   (Auth.: HAR §11-60.1-3, §11-60.1-5, §11-60.1-90)

10. DEG

   a. The minimum stack height for the DEG shall be 2.90 meters (9.51 feet) above ground elevation.
   b. The DEG shall be installed and configured according to the manufacturer's emission related instructions. A copy of the instructions or procedures shall be kept onsite and made available to the Department or its representative(s) upon request;

c. The stationary compression ignition internal combustion engines and control devices shall be operated and maintained according to the manufacturer's emission-related written instructions;
d. DEG emission-related settings changes are allowed only if permitted by the manufacturer; and
e. If the DEG and control devices are not installed, configured, operated, and maintained according to the manufacturer's emission-related written instructions, or emission-related settings are changed in a way that is not permitted by the manufacturer, the permittee shall:

   i. Keep a maintenance plan and records of conducted maintenance;
   ii. To the extent practicable, maintain and operate the engines in a manner consistent with good air pollution control practice for minimizing emissions;
   iii. Conduct an initial performance test to demonstrate compliance with applicable emission standards within one-year (1-year) of startup, or within one-year (1-year) after an engine and control device is no longer installed, configured, operated, and maintained in accordance with the manufacturer's emission-related written instructions, or within one-year (1-year) after emission related settings are changed in a way that is not permitted by the manufacturer; and
   iv. The permittee shall conduct subsequent performance testing every 8,760 hours of engine operation or three (3) years, whichever comes first, thereafter, to demonstrate compliance with the applicable emission standards.

f. The total power output of each engine on the DEG shall not exceed 585 kW (784.5 hp).

(Auth.: HAR §11-60.1-3, §11-60.1-5, §11-60.1-90; 40 CFR §60.4211)

Section D. Monitoring and Recordkeeping Requirements

1. Records

All records, including support information, shall be maintained for at least five (5) years from the date of the monitoring sample, measurement, test, report, or application. Support information includes all maintenance, inspection, and repair records, and copies of all reports required by this permit. These records shall be true, accurate, and maintained in a permanent form suitable for inspection and made available to the Department or its representative(s) upon request.

(Auth.: HAR §11-60.1-3, §11-60.1-11, §11-60.1-90)

2. Production

   The permittee shall maintain records on the total tons of HMA produced and gallons of fuel consumed by the DEG on a monthly and rolling twelve-month (12-month) basis for the purposes of annual emissions reporting.

   (Auth.: HAR §11-60.1-3, §11-60.1-5, §11-60.1-90)

3. Fuel Certification

   Fuel purchase receipts showing the fuel type, sulfur content (percent by weight), cetane index or aromatic content (volume percent), date of delivery, and amount (gallons) of fuel delivered for the drum mixer/dryer and the DEG shall be maintained for purposes of the fuel limits specified in Attachment II, Special Condition No. C.2, and annual emissions reporting. Fuel sulfur content, cetane index, and aromatic content may be demonstrated by providing the supplier's fuel specification sheet for the type of fuel purchased and received.

   (Auth.: HAR §11-60.1-3, §11-60.1-5, §11-60.1-11, §11-60.1-90)

4. Inspection, Maintenance, and Repair Log

   An inspection, maintenance, and repair log shall be maintained for the equipment covered under this permit. Inspection and replacement of parts and repairs shall be well documented. At a minimum, the following records shall be maintained:

   a. The date of the inspection/maintenance/repair work;
   b. A description of the part(s) inspected or repaired;
   c. A description of the findings and any maintenance or repair work performed; and
   d. The name and title of the personnel performing the inspection/work.

   (Auth.: HAR §11-60.1-3, §11-60.1-5, §11-60.1-90)

5. Performance Test

   Performance tests shall be conducted on the plant pursuant to Attachment II, Section F. Test plans, summaries, and results shall be maintained in accordance with the requirements of this section.

   (Auth.: HAR §11-60.1-3, §11-60.1-5, §11-60.1-90)

6. Visible Emissions (VE)

   a. The permittee shall conduct **monthly** (calendar month) VE observations for the DEG by a certified reader in accordance with 40 CFR Part 60, Appendix A, Method 9, or U.S. EPA approved equivalent methods, or alternative methods with prior written approval from the Department and U.S. EPA. For each month, two (2) consecutive six (6) minute observations shall be taken at fifteen (15) second intervals. Records shall be completed and maintained in accordance with the *Visible Emissions Form Requirements.*
   b. Except in those months when performance tests are conducted for the drum mixer/dryer pursuant to Attachment II, Special Conditions, Section F, the permittee shall conduct **monthly** (calendar month), VE observations for the drum mixer/dryer by a certified reader in accordance with 40 CFR Part 60, Appendix A, Method 9, or U.S. EPA approved equivalent methods, or alternative methods with prior written approval from the Department and U.S. EPA. For each month, two (2) consecutive six (6) minute observations shall be taken at fifteen (15) second intervals for each emission point subject to an opacity limit. Records shall be completed and maintained in accordance with the *Visible Emissions Form Requirements.*

   (Auth.: HAR §11-60.1-3, §11-60.1-5, §11-60.1-11, §11-60.1-90)

7. Alternate Operating Scenario

   The permittee shall contemporaneously with making a change from one operating scenario to another, record in a log at the permitted facility, the scenario under which it is operating.

   (Auth.: HAR §11-60.1-3, §11-60.1-5, §11-60.1-90)

8. Baghouse

   a. A pressure gauge shall be operated and maintained to monitor the baghouse pressure differential (inches of water) across the filter bags to determine compliance with Attachment II, Special Condition No. C.4.c.
   b. The permittee shall record in a log the baghouse pressure gauge reading (in inches of water) at least once each operating day.

   (Auth.: HAR §11-60.1-3, §11-60.1-5, §11-60.1-90)

9. Data Acquisition System (DAS)

   a. The permittee shall operate the 400 TPH Hot Mix Asphalt Plant's DAS to continuously monitor, measure, and record the production of hot mix asphalt, in tons, in order to demonstrate compliance with the production limit specified in Attachment II, Special Condition No. C.1. The DAS shall utilize the audit trail function to permanently record a timestamp for each entry of production. Any subsequent change or modification to the production data must be logged with user credentials, timestamps, and reasons. The following information shall be recorded in a log:

i. Daily hot mix asphalt production, in tons, which shall include the date of production;
ii. Total tons of hot mix asphalt produced for each month; and
iii. Total tons of hot mix asphalt produced on a rolling twelve-month (12-month) basis.

b. The permittee shall implement and maintain a written schedule for the calibration, maintenance and quality assurance of the DAS. All records related to calibration, maintenance, and any repairs of the DAS, shall be maintained in the Inspection, Maintenance, and Repair Log of Attachment II, Special Condition No. D.4, including the dates of service, nature of work performed, and results of calibrations.

(Auth.: HAR §11-60.1-3, §11-60.1-5, §11-60.1-11, §11-60.1-90)

Section E. Notification and Reporting Requirements

1. Standard Conditions Reporting

Notification and reporting pertaining to the following events shall be done in accordance with Attachment I, Standard Condition Nos. 14, 16, 17, and 24, respectively:

a. Anticipated date of initial start-up, actual date of construction commencement, and actual date of start-up;
b. Intent to shut down air pollution control equipment for necessary scheduled maintenance;
c. Emissions of air pollutants in violation of HAR, Chapter 11-60.1 or this permit; and
d. Permanent discontinuance of construction, modification, relocation, or operation of the facility covered by this permit.

(Auth.: HAR §11-60.1-8, §11-60.1-15, §11-60.1-16, §11-60.1-90; SIP §11-60-10, §11-60-16)[2]

2. Deviations

The permittee shall report in writing within **five (5) working days** any deviations from permit requirements, including those attributable to upset conditions, the probable cause of such deviations and any corrective actions or preventive measures taken. Corrective actions may include a requirement for additional source testing, more frequent monitoring, or could trigger implementation of a corrective action plan.

(Auth.: HAR §11-60.1-3, §11-60.1-15, §11-60.1-16, §11-60.1-90)

3. Annual Emissions Reports

As required by Attachment IV, Annual Emissions Reporting Requirements, and in conjunction with the requirements of Attachment III, Annual Fee Requirements, the permittee shall report **annually** the total tons per year emitted of each regulated air pollutant, including hazardous air pollutants. The reporting of annual emissions is due within **sixty (60) days** following the end of each calendar year. The following enclosed form shall be used for reporting:

Annual Emissions Report Form: Hot Mix Asphalt Plant

Upon the written request of the permittee, the deadline for reporting of annual emissions may be extended, if the Department determines that reasonable justification exists for the extension.

(Auth.: HAR §11-60.1-3, §11-60.1-5, §11-60.1-11, §11-60.1-90)

4. Monitoring Reports

The permittee shall submit **semi-annually** the following reports to the Department. The reports shall be submitted within **sixty (60) days** after the end of each semi-annual calendar period (January 1 - June 30 and July 1 - December 31), and shall be signed and dated by a responsible official. The following enclosed form shall be used for reporting:

Monitoring Report Form: HMA Production and Fuel Certification
Monitoring Report Form: Baghouse
Monitoring Report Form: Opacity Exceedances

(Auth.: HAR §11-60.1-3, §11-60.1-5, §11-60.1-11, §11-60.1-90)

5. Performance Testing

a. At least **thirty (30) days** prior to conducting a source performance test pursuant to Attachment II, Section F, the permittee shall submit a performance test plan in accordance with Attachment II, Special Condition No. F.7.
b. Within **sixty (60) days** after completion of a source performance test, the permittee shall submit a test report in accordance with Attachment II, Special Condition No. F.9.

(Auth.: HAR §11-60.1-3, §11-60.1-11, §11-60.1-90; 40 CFR §60.8)[1]

6. Compliance Certification

During the permit term, the permittee shall submit at least **annually** to the Department and U.S. EPA, Region 9, the attached **Compliance Certification Form** pursuant to HAR, Subsection 11-60.1-86. The permittee shall indicate whether or not compliance is being met with each term or condition of this permit. The compliance certification shall include, at a minimum, the following information:

a. The identification of each term or condition of the permit that is the basis of the certification;
b. The compliance status;
c. Whether compliance was continuous or intermittent;
d. The methods used for determining the compliance status of the source currently and over the reporting period;
e. Any additional information indicating the source's compliance status with any applicable enhanced monitoring and compliance certification, including the requirements of Section 114(a)(3) of the Clean Air Act or any applicable monitoring and analysis provisions of Section 504(b) of the Clean Air Act;
f. Brief description of any deviations including identifying as possible exceptions to compliance any periods during which compliance is required and in which the excursion or exceedances as defined in 40 CFR Part 64 occurred; and
g. Any additional information as required by the Department, including information to determine compliance.

The compliance certification shall be submitted within **sixty (60) days** after the end of each calendar year and shall be signed and dated by a responsible official.

Upon written request of the permittee, the deadline for submitting the compliance certification may be extended, if the Department determines that reasonable justification exists for the extension.

(Auth.: HAR §11-60.1-4, §11-60.1-86, §11-60.1-90)

7. Alternate Operating Scenario

a. The permittee shall submit a written request and receive prior written approval from the Department before exchanging the DEG with a temporary replacement unit. The written request shall identify, at a minimum, the reasons for the replacement of the DEG from the site of operation and the estimated time period/dates for the temporary replacement, type and size of the temporary unit, emissions data, and stack parameters.
b. Prior to the removal and return of the DEG, the permittee shall submit to the Department written documentation on the removal and return dates and on the make, size, model, and serial numbers for both the temporary replacement unit and the installed unit.

(Auth.: HAR §11-60.1-3, §11-60.1-5, §11-60.1-90)

8. Stack Height

a. The permittee shall submit to the Department written notification of the final constructed stack height of the baghouse servicing the drum-mixer/dryer **within fifteen (15) days** following the initial start-up of the asphalt plant.

b. The permittee shall submit to the Department written notification of the final constructed stack height of the DEG **within fifteen (15) days** following the initial start-up of the unit.

(Auth.: HAR §11-60.1-3, §11-60.1-5, §11-60.1-90)

Section F. Testing Requirements

1. Initial and Annual Performance Testing

Within **sixty (60) days** after achieving the maximum production rate at which the 400 TPH Hot Mix Asphalt Plant will be operated, but not later than **180 days** after initial start-up, and **annually** thereafter, the permittee shall conduct or cause to be conducted performance tests on the 400 TPH Hot Mix Asphalt Plant. Performance tests shall be conducted at the maximum expected operating capacity of the 400 TPH Hot Mix Asphalt Plant and shall be conducted for the emissions of particulate matter and the determination of opacity. Test results shall be reported in accordance with the test methods set forth in 40 CFR Part 60, Appendix A, and the procedures in 40 CFR §60.8. The following test methods or U.S. EPA approved equivalent methods, or alternate methods with prior written approval from the Department and U.S. EPA shall be used:

a. Performance test for particulate matter emissions shall be conducted using 40 CFR Part 60, Methods 1-5. For Method 5, the sampling time for each run shall be at least sixty (60) minutes and the minimum sample volume shall be at least 0.90 dscm (31.8 dscf).
b. Performance tests to determine opacity shall be conducted using 40 CFR Part 60, Method 9.

(Auth.: HAR §11-60.1-3, §11-60.1-11, §11-60.1-90, §11-60.1-161; 40 CFR §60.8, §60.93; SIP §11-60-15)[1,2]

2. Particulate Matter Test Runs

The performance test for the emissions of particulate matter shall consist of three (3) separate runs using the applicable test method. For the purpose of determining compliance with an applicable regulation, the arithmetic mean of the results from the three (3) runs shall apply. At a minimum, the following operating parameters shall be provided in the performance test report:

a. For each run, the hot mix asphalt production rate in tons/hour shall be provided. The permittee shall document the method by which the asphalt production rate was determined.

b. The pressure drops across the baghouse, in inches of water, shall be recorded and reported for each run. There shall be one (1) reading per run unless the value changes, then the reading shall be continuous.

(Auth.: HAR §11-60.1-3, §11-60.1-11, §11-60.1-90; 40 CFR §60.8; SIP §11-60-15)[1,2]

3. Test Method 1 Conditions

Note that Method 1 cannot be used under the following conditions:

a. Cyclonic or swirling gas flow at the sampling location;
b. Stack or duct with a diameter less than twelve (12) inches or a cross-sectional area less than 113 square inches; or
c. Sampling location less than two (2) stack diameters downstream or less than a half diameter upstream from a flow disturbance.

(Auth.: HAR §11-60.1-3, §11-60.1-11, §11-60.1-90)

4. Emissions Reporting

Particulate matter emissions shall be reported in two (2) categories:

a. Front half (filter and probe); and
b. Front and back-half (probe, filter, and impingers). When conducting back half clean-up, all connectors and tubing of the back-half sampling train up to and including the first impinger shall be properly rinsed with acetone. Connecting glassware after the first impinger and the other impingers shall be rinsed with water. All rinses shall be included in the analysis for back half.

(Auth.: HAR §11-60.1-3, §11-60.1-11, §11-60.1-90)

5. Emission Rate

For each run, the emission rate of particulate matter shall be determined by the equation pounds/hour = Qs x cs, where Qs = volumetric flow rate of the total effluent in dscf/hr as determined in accordance with Method 2, and cs = concentration of particulate matter in pounds/dscf as determined in accordance with Method 5.

(Auth.: HAR §11-60.1-3, §11-60.1-11, §11-60.1-90)

6. Performance Test Expense and Monitoring

The performance tests shall be made at the expense of the permittee. All performance tests may be monitored by the Department.

(Auth.: HAR §11-60.1-3, §11-60.1-11, §11-60.1-90)

7. Performance Test Plan

   At least **thirty (30) days** prior to conducting a performance test, the permittee shall submit a written performance test plan to the Department and U.S. EPA, Region 9, that includes date(s) of the test, test duration, test locations, test methods, source operation, locations of VE readings, and other parameters that may affect the test results. Such a plan shall conform to U.S. EPA guidelines including quality assurance procedures. A test plan or quality assurance plan that does not have the approval of the Department may be grounds to invalidate any test and require a retest.

   (Auth.: HAR §11-60.1-3, §11-60.1-11, §11-60.1-90; 40 CFR §60.8; SIP §11-60-15)[1,2]

8. Deviations

   Any deviations from these conditions, test methods, or procedures may be cause for rejection of the test results unless such deviations are approved by the Department before the tests.

   (Auth.: HAR §11-60.1-3, §11-60.1-11, §11-60.1-90)

9. Performance Test Report

   Within **sixty (60) days** after completion of the performance test, the permittee shall submit to the Department and U.S. EPA, Region 9, the test report which shall include the operating conditions of the facility at the time of the test (e.g., operating rate in tons/hr, pressure drop readings, etc.), summarized test results, comparative results with the permit emission limits, other pertinent support calculations, and field/laboratory data.

   (Auth.: HAR §11-60.1-3, §11-60.1-11, §11-60.1-90; 40 CFR §60.8; SIP §11-60-15)[1,2]

10. Performance Test Waiver

    Upon written request and justification, the Department may waive the requirement for, or a portion of, a specific performance test. The waiver request is to be submitted prior to the required test and must include documentation justifying such action. Documentation should include, but is not limited to, the results of the prior performance test indicating compliance by a wide margin, documentation of continuing compliance, and further that operations of the source have not changed since the previous source test.

    (Auth.: HAR §11-60.1-3, §11-60.1-90)

Section G. Change of Location Requirements

1. For all location changes, the permittee shall submit the enclosed **Change of Location Request for a Temporary Source** form to the Department for approval **at least thirty (30) days prior to the change in location**, or such lesser time as designated and approved by the Department.

   (Auth.: HAR §11-60.1-3, §11-60.1-91)

2. With each change of location request, the permittee shall submit to the Department:

   a. A map of the proposed new temporary location showing the property boundary, fence lines, location of the equipment on the property, and the location of any other air pollution sources owned and operated by the permittee at the new location, and the location of all structures within one hundred (100) meters (330 feet) of the equipment; and
   b. An area map showing the proposed new temporary location.

   (Auth.: HAR §11-60.1-3, §11-60.1-91)

3. The applicable filing fee shall be submitted to the Department with each change in location request and made payable to the **Clean Air Special Fund-COV**.

   (Auth.: HAR §11-60.1-3, §11-60.1-91)

4. The permittee shall submit any additional information as requested by the Department of Health, which may include an ambient air quality impact analysis of the equipment at the new location.

   (Auth.: HAR §11-60.1-3, §11-60.1-91)

5. Prior to any relocation, the Department shall approve, conditionally approve, or deny in writing each location change. If the Department denies a location change, the applicant may appeal the decision pursuant to HRS, Chapter 91.

   (Auth.: HAR §11-60.1-3, §11-60.1-91)

6. The change of location approval, or a copy thereof, shall be maintained near the source and shall be made available for inspection upon request by the Department.

   (Auth.: HAR §11-60.1-3, §11-60.1-91)

7. At each of the authorized locations, the permittee shall operate in accordance with this temporary covered source permit and all applicable requirements.

   (Auth.: HAR §11-60.1-3, §11-60.1-91)

Section H. Agency Notification

Any document (including reports) required to be submitted by this CSP shall be done in accordance with Attachment I, Standard Condition No. 28.

(Auth.: HAR §11-60.1-4, §11-60.1-90)

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[1] The citations to the Code of Federal Regulations (CFR) identified under a particular condition, indicate that the permit condition complies with the specified provision(s) of the CFR. Due to the integration of the preconstruction and operating permit requirements, permit conditions may incorporate more stringent requirements than those set forth in the CFR.

[2] The citations to the State Implementation Plan (SIP) identified under a particular condition, indicate that the permit condition complies with the specified provision(s) of the SIP.

ATTACHMENT II – INSIG
SPECIAL CONDITIONS – INSIGNIFICANT ACTIVITIES
TEMPORARY COVERED SOURCE PERMIT NO. 0923-01-CT

Issuance Date: DATE **Expiration Date: DATE**

In addition to the Standard Conditions of the temporary CSP, the following Special Conditions shall apply to the permitted facility:

Section A. Equipment Description

This attachment encompasses insignificant activities listed in HAR §11-60.1-82(f) and (g) for which provisions of this permit and HAR, Subchapter 2, General Prohibitions apply.

(Auth.: HAR §11-60.1-3)

Section B. Operational Limitations

1. The permittee shall take measures to operate applicable insignificant activities in accordance with the provisions of HAR, Subchapter 2 for VE, fugitive dust, incineration, process industries, sulfur oxides from fuel combustion, storage of volatile organic compounds, volatile organic compound water separation, pump and compressor requirements, and waste gas disposal.

   (Auth.: HAR §11-60.1-3, §11-60.1-82, §11-60.1-90)

2. The Department may at any time require the permittee to further abate emissions if an inspection indicates poor or insufficient controls.

   (Auth.: HAR §11-60.1-3, §11-60.1-5, §11-60.1-82, §11-60.1-90)

Section C. Monitoring and Recordkeeping Requirements

1. The Department reserves the right to require monitoring, recordkeeping, or testing of any insignificant activity to determine compliance with the applicable requirements.

   (Auth.: HAR §11-60.1-3, §11-60.1-90)

2. All records shall be maintained for at least five (5) years from the date of any required monitoring, recordkeeping, testing, or reporting. These records shall be true, accurate and maintained in a permanent form suitable for inspection and made available to the Department or its authorized representative upon request.

   (Auth.: HAR §11-60.1-3, §11-60.1-11, §11-60.1-90)

Section D. Notification and Reporting

Compliance Certification

During the permit term, the permittee shall submit at least **annually** to the Department and U.S. EPA, Region 9, the attached **Compliance Certification Form** pursuant to HAR §11-60.1-86. The permittee shall indicate whether or not compliance is being met with each term or condition of this permit. The compliance certification shall include, at a minimum, the following information:

1. The identification of each term or condition of the permit that is the basis of the certification;
2. The compliance status;
3. Whether compliance was continuous or intermittent;
4. The methods used for determining the compliance status of the source currently and over the reporting period;
5. Any additional information indicating the source's compliance status with any applicable enhanced monitoring and compliance certification including the requirements of Section 114(a)(3) of the Clean Air Act or any applicable monitoring and analysis provisions of Section 504(b) of the Clean Air Act;
6. Brief description of any deviations including identifying as possible exceptions to compliance any periods during which compliance is required and in which the excursion or exceedances as defined in 40 CFR Part 64 occurred; and
7. Any additional information as required by the Department including information to determine compliance.

The compliance certification shall be submitted within **sixty (60) days** after the end of each calendar year and shall be signed and dated by a responsible official.

Upon written request of the permittee, the deadline for submitting the compliance certification may be extended, if the Department determines that reasonable justification exists for the extension.

In lieu of addressing each emission unit as specified in the **Compliance Certification Form**, the permittee may address insignificant activities as a single unit provided compliance is met with all applicable requirements. If compliance is not totally attained, the permittee shall identify the specific insignificant activity and provide the details associated with the noncompliance.

(Auth.: HAR §11-60.1-4, §11-60.1-86, §11-60.1-90)

Section E. Agency Notification

Any document (including reports) required to be submitted by this temporary CSP shall be done in accordance with Attachment I, Standard Condition No. 28.

(Auth.: HAR §11-60.1-4, §11-60.1-90)

ATTACHMENT III: ANNUAL FEE REQUIREMENTS
TEMPORARY COVERED SOURCE PERMIT NO. 0923-01-CT

Issuance Date: DATE **Expiration Date: DATE**

The following requirements for the submittal of annual fees are established pursuant to HAR, Title 11, Chapter 60.1, Air Pollution Control. Should HAR, Chapter 60.1, be revised such that the following requirements are in conflict with the provisions of HAR, Chapter 60.1, the permittee shall comply with the provisions of HAR, Chapter 60.1:

1. Annual fees shall be paid in full:

   a. Within **120 days** after the end of each calendar year; and
   b. Within **thirty (30) days** after the permanent discontinuance of the covered source.

2. The annual fees shall be determined and submitted in accordance with HAR, Chapter 11-60.1, Subchapter 6.

3. The annual emissions data for which the annual fees are based shall accompany the submittal of any annual fees and be submitted on forms furnished by the Department.

4. The annual fees and the emission data shall be mailed to:

State of Hawaii
Clean Air Branch
2827 Waimano Home Road, #130
Pearl City, Hawaii 96782

ATTACHMENT IV: ANNUAL EMISSIONS REPORTING REQUIREMENTS
TEMPORARY COVERED SOURCE PERMIT NO. 0923-01-CT

Issuance Date: DATE **Expiration Date: DATE**

In accordance with the HAR, Title 11, Chapter 60.1, Air Pollution Control, the permittee shall report to the Department of Health the nature and amounts of emissions.

1. Complete the attached form(s):

   Annual Emissions Report Form: Hot Mix Asphalt Plant

2. The reporting period shall be from January 1 to December 31 of each year. All reports shall be submitted to the Department within **sixty (60) days** after the end of each calendar year and shall be mailed to the following address:

   State of Hawaii
   Clean Air Branch
   2827 Waimano Home Road, #130
   Pearl City, Hawaii 96782

3. The permittee shall retain the information submitted, including all emission calculations. These records shall be in a permanent form suitable for inspection, retained for a minimum of five (5) years, and made available to the Department upon request.

4. Any information submitted to the Department without a request for confidentiality shall be considered public record.

5. In accordance with HAR, Section 11-60.1-14, the permittee may request confidential treatment of specific information, including information concerning secret processes or methods of manufacture, by submitting a written request to the Director and clearly identifying the specific information that is to be accorded confidential treatment.

ANNUAL EMISSIONS REPORT FORM
HOT MIX ASPHALT PLANT
TEMPORARY COVERED SOURCE PERMIT NO. 0923-01-CT

Issuance Date: DATE **Expiration Date: DATE**

In accordance with the Hawaii Administrative Rules, Title 11, Chapter 60.1, Air Pollution Control, the permittee shall report to the Department of Health the nature and amounts of emissions:

(Make Copies for Future Use)

For Period:_____ Date:_____

Company Name:_____

Facility Name:_____

Equipment Location:_____

I certify that I have knowledge of the facts herein set forth, that the same are true, accurate, and complete to the best of my knowledge and belief, and that all information not identified by me as confidential in nature shall be treated by the Department of Health as public record.

Responsible Official (Print):_____

Title:_____

Responsible Official (Signature):_____

1. Report the total tons of the hot mix asphalt (HMA) produced during the reporting period:

Equipment	HMA Produced (tons/yr)
Drum Mixer/Dryer	

2. Report the maximum sulfur content and total fuel consumed of each type of fuel fired in the drum mixer/dryer for the calendar year:

Equipment Description	Types of Fuel Fired	Maximum Sulfur Content (% by Weight)	Total Fuel Consumption (gallon/year)
Drum Mixer/Dryer			

3. Report the maximum sulfur content and total fuel consumed of each type of fuel fired in the 1,170 kW DEG for the calendar year:

Equipment Description	Types of Fuel Fired	Maximum Sulfur Content (% by Weight)	Total Fuel Consumption (gallon/year)
1,170 kW DEG			

COMPLIANCE CERTIFICATION FORM
TEMPORARY COVERED SOURCE PERMIT NO. 0923-01-CT
(PAGE 1 OF ___)

Issuance Date: DATE **Expiration Date: DATE**

In accordance with the Hawaii Administrative Rules (HAR), Title 11, Chapter 60.1, Air Pollution Control, the permittee shall report to the Department of Health the following certification at least **annually**, or more frequently as requested by the Department.

(Make Copies of the Compliance Certification Form for Future Use)

For Period: _____ Date: _____

Company/Facility Name: _____

Responsible Official (Print): _____

Title: _____

Responsible Official (Signature): _____

I certify that I have knowledge of the facts herein set forth, that the same are true, accurate, and complete to the best of my knowledge and belief, and that all information not identified by me as confidential in nature shall be treated by Department of Health as public record. I further state that I will assume responsibility for the construction, modification, or operation of the source in accordance with the HAR, Title 11, Chapter 60.1, Air Pollution Control, and any permit issued thereof.

COMPLIANCE CERTIFICATION FORM
TEMPORARY COVERED SOURCE PERMIT NO. 0923-01-CT
(CONTINUED, PAGE 2 OF ___)

Issuance Date: DATE **Expiration Date: DATE**

The purpose of this form is to evaluate whether or not the facility was in compliance with the permit terms and conditions during the covered period. If there were any deviations to the permit terms and conditions during the covered period, the deviation(s) shall be certified as *intermittent compliance* for the particular permit term(s) or condition(s). Deviations include failure to monitor, record, report, or collect the minimum data required by the permit to show compliance. In the absence of any deviation, the particular permit term(s) or condition(s) may be certified as *continuous compliance*.

Instructions:
Please certify Sections A, B, and C below for continuous or intermittent compliance. Sections A and B are to be certified as a group of permit conditions. Section C shall be certified individually for each operational and emissions limit condition as listed in the Special Conditions section of the permit (list all applicable equipment for each condition). Any deviations shall also be listed individually and described in Section D. The facility may substitute its own generated form in verbatim for Sections C and D.

A. Attachment I, Standard Conditions

Permit term/condition	Equipment	Compliance
All standard conditions	All Equipment listed in the permit	☐ Continuous ☐ Intermittent

B. Special Conditions - Monitoring, Recordkeeping, Reporting, Testing, and INSIG

Permit term/condition	Equipment	Compliance
All monitoring conditions	All Equipment listed in the permit	☐ Continuous ☐ Intermittent
Permit term/condition All recordkeeping conditions	Equipment All Equipment listed in the permit	Compliance ☐ Continuous ☐ Intermittent
Permit term/condition All reporting conditions	Equipment All Equipment listed in the permit	Compliance ☐ Continuous ☐ Intermittent
Permit term/condition All testing conditions	Equipment All Equipment listed in the permit	Compliance ☐ Continuous ☐ Intermittent
Permit term/condition All INSIG conditions	Equipment All Equipment listed in the permit	Compliance ☐ Continuous ☐ Intermittent

COMPLIANCE CERTIFICATION FORM
TEMPORARY COVERED SOURCE PERMIT NO. 0923-01-CT
(CONTINUED, PAGE ___ OF ___)

Issuance Date: DATE **Expiration Date: DATE**

C. Special Conditions - Operational and Emissions Limitations

Each permit term/condition shall be identified in chronological order using attachment and section numbers (e.g., Attachment II, B.1, Attachment IIA, Special Condition No. B.1.f, etc.). Each equipment shall be identified using the description stated in Section A of the Special Conditions (e.g., Unit No., Model No., Serial No., etc.). Check all methods (as required by permit) used to determine the compliance status of the respective permit term/condition.

Permit term/condition	Equipment	Method	Compliance
		☐ monitoring ☐ recordkeeping ☐ reporting ☐ testing ☐ none of the above	☐ Continuous ☐ Intermittent
		☐ monitoring ☐ recordkeeping ☐ reporting ☐ testing ☐ none of the above	☐ Continuous ☐ Intermittent
		☐ monitoring ☐ recordkeeping ☐ reporting ☐ testing ☐ none of the above	☐ Continuous ☐ Intermittent
		☐ monitoring ☐ recordkeeping ☐ reporting ☐ testing ☐ none of the above	☐ Continuous ☐ Intermittent
		☐ monitoring ☐ recordkeeping ☐ reporting ☐ testing ☐ none of the above	☐ Continuous ☐ Intermittent
		☐ monitoring ☐ recordkeeping ☐ reporting ☐ testing ☐ none of the above	☐ Continuous ☐ Intermittent

COMPLIANCE CERTIFICATION FORM
TEMPORARY COVERED SOURCE PERMIT NO. 0923-01-CT
(CONTINUED, PAGE ___ OF ___)

Issuance Date: DATE **Expiration Date: DATE**

D. Deviations

Permit Term/ Condition	Equipment / Brief Summary of Deviation	Deviation Period time (am/pm) & date (mo/day/yr)	Date of Written Deviation Report to DOH (mo/day/yr)
		Beginning: Ending:	
		Beginning: Ending:	
		Beginning: Ending:	
		Beginning: Ending:	
		Beginning: Ending:	
		Beginning: Ending:	
		Beginning: Ending:	

(Make Additional Copies if Needed)

CHANGE OF LOCATION REQUEST
FOR A TEMPORARY SOURCE
TEMPORARY COVERED SOURCE PERMIT NO. 0923-01-CT
(PAGE 1 OF 3)

Issuance Date: DATE **Expiration Date: DATE**

In accordance with the Hawaii Administrative Rules, Title 11, Chapter 60.1, Air Pollution Control, the permittee shall provide the following information to the Department of Health:

(Make Copies for Future Use)

1. For all location changes, the permittee shall complete and submit this change of location request form to the Department of Health for approval **at least thirty (30) days prior to the change of location**, or such lesser time as designated and approved by the Department of Health.

2. With each change of location request, the permittee shall submit to the Department of Health:

   a. A map of the proposed new temporary location showing:

      i. The property boundary;
      ii. Fence lines;
      iii. Location of the equipment on the property;
      iv. The location of any other air pollution sources owned and operated by the permittee at the new location; and
      v. The location of all structures within 100 meters (330 feet) of the equipment; and

   b. An area map showing the proposed new temporary location.

3. The permittee shall submit a filing fee with each change in location request. The filing fee shall be made payable to the **Clean Air Special Fund-COV** and is as follows:

   Covered Sources
   _X_ $100.00 for Non-Air Toxic
   ____ $300.00 for Air Toxic

4. The permittee shall submit any additional information as requested by the Department of Health, which may include an ambient air quality impact analysis of the equipment at the new location.

5. This **Change of Location Request for a Temporary Source** form shall be mailed to the following address:

State of Hawaii
Clean Air Branch
2827 Waimano Home Road, #130
Pearl City, Hawaii 96782

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1. Prior to any relocation, the Department of Health shall approve, conditionally approve, or deny in writing each location change. If the Department of Health denies a location change, the applicant may appeal the decision pursuant to HRS, Chapter 91.
2. The change of location approval, or a copy thereof, shall be maintained near the source and shall be made available for inspection upon request by the Department of Health.
3. At each new authorized location, the permittee shall operate in accordance with the current Temporary CSP and all applicable requirements.

CHANGE OF LOCATION REQUEST
FOR A TEMPORARY SOURCE
TEMPORARY COVERED SOURCE PERMIT NO. 0923-01-CT
(CONTINUED, PAGE 2 OF 3)

Issuance Date: DATE **Expiration Date: DATE**

1. Company Name:
2. Mailing Address:
   City: State: Zip Code:
   Phone Number:
3. Name of Owner/Owner's Agent:
   Title: Phone Number:
4. Equipment Description (identify each equipment to be relocated):
5. Current Location of Equipment:
6. **New Location Information**
   a. Street Address:
   b. City: Zip Code: Island:
   c. For sites with no street address, provide:
      Description of location:
      or, Tax map key:
      or, UTM Coordinates:
      Horizontal Datum:
   d. Plant manager/contact: Phone:
   e. Proposed start date at new location:
   f. Estimated project duration at new location:
   g. Identify other air pollution sources owned and operated by the permittee at the new location, if any:
   h. Brief description of the work to be performed:

CHANGE OF LOCATION REQUEST
FOR A TEMPORARY SOURCE
TEMPORARY COVERED SOURCE PERMIT NO. 0923-01-CT
(CONTINUED, PAGE 3 OF 3)

Issuance Date: DATE **Expiration Date: DATE**

i. List structures within **100 meters (330 feet)** of the equipment and which have heights greater than forty percent (40%) of the equipment stack height. In the following table, provide the structure height, length, width, and distance to the equipment stack at the new site. If there are no applicable structures, specify "none."

Structure	Distance from Stack (ft)	Height (ft)	Length (ft)	Width (ft)

j. Provide estimated distances to the nearest residence and/or occupied establishments (e.g. schools, businesses, etc.):

Distance[1]	Identify if residence, school, business, etc.

[1]Include units, e.g. feet, miles

I certify that I have knowledge of the facts herein set forth, that the same are true, accurate, and complete to the best of my knowledge and belief, and that all information not identified by me as confidential in nature shall be treated by the Department of Health as public record. I further state that no modifications will be made to the equipment and operational methods will remain similar as permitted under the current temporary covered source permit at this new location.

Responsible Official (Print):_____ Date:_____

Title:_____

Responsible Official (Signature):_____

MONITORING REPORT FORM
HMA PRODUCTION AND FUEL CERTIFICATION
TEMPORARY COVERED SOURCE PERMIT NO. 0923-01-CT
(PAGE 1 OF 2)

Issuance Date: DATE **Expiration Date: DATE**

In accordance with the Hawaii Administrative Rules (HAR), Title 11, Chapter 60.1, Air Pollution Control, the permittee shall report to the Department of Health the following information **semi-annually**:

(Make Copies for Future Use)

For Reporting Period: _____ Date: _____

Company Name: _____

Facility Name: _____

Equipment Location: _____

I certify that I have knowledge of the facts herein set forth, that the same are true, accurate and complete to the best of my knowledge and belief, and that all information not identified by me as confidential in nature shall be treated by the Department of Health as public record.

Responsible Official (print): _____

Title: _____ Phone Number: _____

Responsible Official (Signature): _____

1. Report the total quantity of hot mix asphalt (HMA) produced by the drum mixer/dryer for the reporting period:

Month	Total HMA Produced [tons] Monthly Basis	Total HMA Produced [tons] 12-Month Rolling Basis
January		
February		
March		
April		
May		
June		
July		
August		
September		
October		
November		
December		

MONITORING REPORT FORM
HMA PRODUCTION AND FUEL CERTIFICATION
TEMPORARY COVERED SOURCE PERMIT NO. 0923-01-CT
(CONTINUED, PAGE 2 OF 2)

Issuance Date: DATE **Expiration Date: DATE**

In accordance with the HAR, Title 11, Chapter 60.1, Air Pollution Control, the permittee shall report to the Department of Health the following information semi-annually:

2. Report the maximum sulfur content of each type of fuel fired in the drum mixer/dryer for the reporting period:

Equipment Description	Types of Fuel Fired	Maximum Sulfur Content (% by Weight)
Drum Mixer/Dryer		

3. Report the maximum sulfur content of each type of fuel fired in the 1,170 kW DEG for the reporting period and the minimum cetane index or maximum aromatic content of the diesel No. 2 fuel oil fired:

Equipment Description	Types of Fuel Fired	Maximum Sulfur Content (% by Weight)	Minimum Cetane Index	Maximum Aromatic Content (Volume %)
1,170 kW DEG				

MONITORING REPORT FORM
BAGHOUSE
TEMPORARY COVERED SOURCE PERMIT NO. 0923-01-CT

Issuance Date: DATE **Expiration Date: DATE**

In accordance with the Hawaii Administrative Rules, Title 11, Chapter 60.1, Air Pollution Control, the permittee shall report to the Department of Health the following information **semi-annually**:

(Make Copies for Future Use)

For Period:_____ Date:_____

Company Name:_____

Facility Name:_____

Equipment Location:_____

I certify that I have knowledge of the facts herein set forth, that the same are true, accurate, and complete to the best of my knowledge and belief, and that all information not identified by me as confidential in nature shall be treated by the Department of Health as public record.

Responsible Official (Print):_____

Title:_____ Phone Number:_____

Responsible Official (Signature):_____

Report all incidents the pressure differential of the baghouse was outside the range of two (2) to six (6) inches of water for the reporting period.

Date	Pressure Drop (Inches)	Duration (hours)	Comments/Corrective Action Taken

Please indicate if no such incidents occurred.

MONITORING REPORT FORM
OPACITY EXCEEDANCES
TEMPORARY COVERED SOURCE PERMIT NO. 0923-01-CT

Issuance Date: DATE **Expiration Date: DATE**

In accordance with the Hawaii Administrative Rules, Title 11, Chapter 60.1, Air Pollution Control, the permittee shall report to the Department of Health the following information **semi-annually**:

(Make Copies for Future Use)

For Period:_____ Date:_____

Company Name:_____

Facility Name:_____

Equipment Location:_____

I certify that I have knowledge of the facts herein set forth, that the same are true, accurate, and complete to the best of my knowledge and belief, and that all information not identified by me as confidential in nature shall be treated by the Department of Health as public record.

Responsible Official (Print):_____

Title:_____

Responsible Official (Signature):_____

Visible Emissions:

Report the following on the lines provided below: all date(s) and six (6) minute average opacity reading(s) which the opacity limit was exceeded during the monthly observations; or if there were no exceedances during the monthly observations, then write “no exceedances” in the comment column.

EQUIPMENT or EMISSION POINT DESCRIPTION	SERIAL/ID NO.	DATE	6 MIN. AVER. (%)	COMMENTS

VISIBLE EMISSIONS FORM REQUIREMENTS
STATE OF HAWAII
TEMPORARY COVERED SOURCE PERMIT NO. 0923-01-CT

Issuance Date: DATE **Expiration Date: DATE**

The ***Visible Emissions (VE) Form*** shall be completed **monthly** (*each calendar month*) for each equipment subject to opacity limits by a certified reader in accordance with 40 CFR Part 60, Appendix A, Method 9, or U.S. EPA approved equivalent methods, or alternative methods with prior written approval from the Department of Health and U.S. EPA. The VE Form shall be completed as follows:

1. VE observations shall take place during the day only. The opacity shall be noted in five percent (5%) increments (e.g., 25%).

2. Orient the sun within a 140 degree sector to your back. Provide a source layout sketch on the VE Form using the symbols as shown.

3. For VE observations of stacks, stand at least three (3) stack heights but not more than a quarter mile from the stack.

4. For VE observations of fugitive emissions from the plant, stand at least 4.57 meters (15 feet) from the VE source, but not more than a quarter mile from the VE source.

5. Two (2) consecutive six (6) minute observations shall be taken at fifteen (15) second intervals for each stack or emission point.

6. The six (6) minute average opacity reading shall be calculated for each observation.

7. If possible, the observations shall be performed as follows:

    a. Read from where the line of sight is at right angles to the wind direction.
    b. The line of sight shall not include more than one (1) plume at a time.
    c. Read at the point in the plume with the greatest opacity (without condensed water vapor), ideally while the plume is no wider than the stack diameter.
    d. Read the plume at fifteen (15) second intervals only. Do not read continuously.
    e. The equipment shall be operating at the maximum permitted capacity.

8. If the equipment was shut-down for that period, briefly explain the reason for shut-down in the comment column.

The permittee shall retain the completed VE Forms for recordkeeping. These records shall be in a permanent form suitable for inspection, retained for a minimum of five (5) years, and made available to the Department of Health, or their representative upon request.

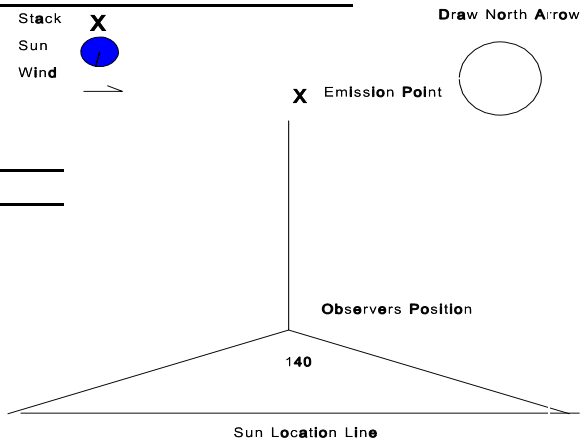
Any required initial and annual performance test performed in accordance with Method 9 by a certified reader shall satisfy the respective equipment's VE monitoring requirements for the month the performance test is performed.

VISIBLE EMISSIONS FORM
TEMPORARY COVERED SOURCE PERMIT NO. 0923-01-CT

Issuance Date: DATE **Expiration Date: DATE**

(Make Copies for Future Use for Each Stack or Emission Point)

Company Name:_____
For stacks, describe equipment and fuel:_____
For fugitive emissions from crushers, describe:
Fugitive emission point:_____
Plant Production (tons/hr):_____
(During observation)



Site Conditions:
Emission point or stack height above ground (ft):_____
Emission point or stack distance from observer (ft):_____
Emission color (black or white):_____
Sky conditions (% cloud cover):_____
Wind speed (mph):_____
Temperature (°F):_____
Observer Name:_____
Certified? (Yes/No):_____

Observation Date and Start Time:_____

	Seconds				
MINUTES	0	15	30	45	COMMENTS
1					
2					
3					
4					
5					
6					
Six (6) Minute Average Opacity Reading (%):					

Observation Date and Start Time:_____

	Seconds				
MINUTES	0	15	30	45	COMMENTS
1					
2					
3					
4					
5					
6					
Six (6) Minute Average Opacity Reading (%):					

Draft Review Summary

DRAFT

PERMIT APPLICATION REVIEW
TEMPORARY COVERED SOURCE PERMIT (CSP) NO. 0923-01-CT

Application No.:	Application No. 0923-01 for Initial Permit
Organization:	Grace Pacific LLC
Facility:	400 TPH Hot Mix Asphalt (HMA) Plant
Mailing Address:	P.O. Box 78 Honolulu, Hawaii 96810-0078
Location:	Various Temporary Sites, State of Hawaii
Initial Location:	Makakilo Quarry 91-920 Farrington Highway, Kapolei, Island of Oahu UTM: 596,475 m E, 2,362,050 m N (NAD-83)
SIC Code:	2951 (Asphalt Paving Mixtures and Blocks)
Responsible Official:	Mr. Scott Komatsu Vice President, Materials (808) 674-8383

Equipment:

400 TPH Hot Mix Asphalt Plant

a. 400 TPH Astec double barrel drum mixer/dryer, Model No. RDB-9640, Serial No. 24-194-446982-4-1, with Astec Whisper Jet 110 MMBtu/hr burner, Model No. WJ-100U-O-LP-S, Serial No. 24-194-446982-1-1;
b. Astec baghouse (pulse jet), Model No. RBH-78-14W, Serial No. 24-194-446982-7-1, servicing the double barrel drum mixer/dryer;
c. 1,170 kW Volvo Penta diesel engine generator (DEG), Model No. NPV-1100GF, Comprised of two (2) 836 HP Volvo Penta diesel engines, Model No. TWD162GE, Serial No. 2016184304, and Model No. TWD162GE, Serial No. 2016184307;
d. Six (6) compartment cold feed system, Model No. RCFS-1014-6, Serial No. 24-194-446982-1-1;
e. Two (2) compartment cold feed system, Model No. RFRB-1014-2, Serial No. 24-194-446982-23-1;
f. Astec Recycle Asphalt (RAP) scalping screen, Model No. 4x8 VALU KING, Serial No. 245741;
g. Four (4) 100 ton storage silos, Serial Nos. 24-194-446982-9-1, 24-194-446982-10-1, 24-194-446982-13-1, and 24-194-446982-14-1; and
h. Various Conveyors.

Background:

Grace Pacific LLC submitted an application for an initial temporary CSP to operate a 400 TPH portable HMA Plant. The plant will be powered by a 1,170 kW Volvo Penta diesel engine generator (DEG). The DEG is a single enclosed body container and is made up of two (2) 836 hp Volvo Penta diesel engines, however the maximum output of the engines are limited by the manufacturer to 585 kW (784.5 hp). The container has two (2) emissions stacks, one (1) for each engine. The double barrel drum mixer/dryer and 1,170 kW DEG will be fired on only diesel fuel with a sulfur content not to exceed 0.0015% by weight.

Since the proposed 400 TPH HMA plant facility is on the same property as the rock crushing and screening plants permitted under Temporary CSP No. 0045-01-C/CT, the Clean Air Branch requested the applicant to demonstrate that the rock crushing and screening plants facility is not a support facility to the proposed 400 TPH HMA plant. On January 27, 2025, Grace Pacific LLC submitted a memorandum in response, outlining the following points:

1. Different Industrial Groupings

   Environmental Protection Agency's (EPA's) Prevention of Significant Deterioration (PSD) (40 Code of Federal Regulations (CFR) Part 52.21) defines "stationary source" as "any building, structure, facility, or installation which emits or may emit any air pollutant subject to regulation under the Act" and further defines "building, structure, facility or installation" as "all of the pollutant-emitting activities which belong to the same industrial grouping, are located on one or more contiguous or adjacent properties, and are under the control of the same person (or persons under common control). Although both facilities are on the same property and under common control, the facilities belong to distinct major industrial groups as the 400 TPH HMA Plant has an SIC code of 2951 while the crushing and screening operations have an SIC code of 1429. EPA rules define a stationary source, in part, by belonging to the same industrial grouping.

2. Less than fifty percent (50%) Output Dedication and Operational Independence

   In an EPA support facility determination letter dated August 25, 1999[1], EPA guidance establishes a presumption of a support facility relationship when greater than fifty percent (50%) of the output or services of one facility are dedicated to another. Projected aggregate utilization data, as presented in Table 1 of the memorandum, demonstrate that the proportion of the Makakilo Quarry's aggregate output intended for the HMA Plant consistently remains below this fifty percent (50%) threshold. Based on the data, an average of approximately 22.44% of the aggregate produced will be supplied to the 400 TPH HMA plant.

   Additionally, even if the fifty percent (50%) test is not met, the determination letter lists the following considerations:

   a. The degree to which the supporting activity receives materials or services from the primary activity (which indicates a mutually beneficial arrangement between the primary and secondary activities);
   b. The degree to which the primary activity exerts control over the support activity's operations;

c. The nature of any contractual arrangements between the facilities; and
d. The reasons for the presence of the support activity on the same site as the primary activity (e.g., whether the support activity would exist at that site but for the primary activity).

While Grace Pacific owns both the aggregate crushing and screening plants and the HMA plant within the Makakilo Quarry property, the 400 TPH HMA plant serves the asphalt paving market and operates independently of the quarry's aggregate output. Additionally, the relocatable plant also plans to move to more efficient project locations as needed.

[1]EPA letter dated August 25, 1999. Support Facility Determination...Oscar Mayer and Madison Gas and Electric (https://www.epa.gov/sites/default/files/2015-07/documents/oscar.pdf).

Based on the provided documentation and supporting information, the CAB does not consider the rock crushing and screening plants permitted under Temporary CSP No. 0045-01-C/CT a support facility to the proposed 400 TPH HMA plant. Although convenient that the HMA plant is located on the same property as the rock crushing and screening plants, the HMA plant does not need to be on the same property as the rock crushing and screening plants in order for both facilities to fulfill their intended operational purposes.

Process:
Virgin aggregates are conveyed to a drum mixer/dryer. Asphalt cement (AC), stored in a heated tank, is pumped into the drum mixer. The virgin aggregate is dried and superheated within the drum, then combined with the AC in the mixing zone to produce the final asphalt mixture. If included, recycled asphalt pavement (RAP) is also introduced into the mix. The completed hot mix asphalt is then discharged to elevating conveyors, which transports it to storage silos for truck loading.

Air Pollution Control:

The double barrel drum mixer/dryer is equipped with a baghouse to control particulate matter emissions. Water sprays from a water truck will also be used to control fugitive dust from stockpiles, access roads, and facility grounds. The 1,170 kW DEG is EPA Tier 4F certified.

Applicable and Non-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

New Source Performance Standards (NSPS) / National Emission Standards for Hazardous Air Pollutants (NESHAP)
This source is subject to 40 Code of Federal Regulations (CFR) Part 60, NSPS, Subpart I — Standards of Performance for Hot Mix Asphalt Facilities because the 400 TPH hot mix asphalt plant will commence construction or modification after June 11, 1973.

This source is subject to 40 CFR Part 60, Subpart IIII – Standards of Performance for Stationary Compression Ignition Internal Combustion Engines, because the 1,170 kW DEG commenced construction after July 11, 2005, and was manufactured after April 1, 2006. For the purposes of Subpart III, the date that construction commences is the date the engine is ordered. Per the manufacturer's data, the engines were manufactured in 2024. The engines must meet the emission standards and certification requirements of this subpart. Manufacturer's specifications indicate the DEG is EPA Tier 4 Final certified.

This source is not subject to 40 CFR Part 61, NESHAP. There are no standards in 40 CFR Part 61 applicable to this facility.

This source is subject to 40 CFR Part 63, Subpart ZZZZ – National Emissions Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines (RICE), because the 1,170 kW DEG is a new stationary RICE. A stationary RICE located at an area source of HAP emissions is new if you commenced construction of the stationary RICE on or after June 12, 2006. A new stationary RICE located at an area source must meet the requirements of this part by meeting the requirements of 40 CFR Part 60 Subpart IIII. No further requirements apply for such engines under this part.

Prevention of Significant Deterioration (PSD)
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)
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 one hundred percent (100%) of the major source level; and
(5) Not otherwise be exempt from CAM.

Air Emissions Reporting Requirements (AERR)
This source is not subject to AERR, 40 CFR Part 51, Subpart A. As shown in the table below, potential emissions from the facility, with limitations, are less than the triggering levels.

Pollutant	Limited Emissions (tons/yr)	AERR Trigger Level (Type B) (tons/yr)
SO_2	2.99	≥100 TPY
VOC	16.14	≥100 TPY
NO_x	26.14	≥100 TPY
CO	85.48	≥1000 TPY
PM_{10}	10.53	≥100 TPY
$PM_{2.5}$	7.51	≥100 TPY

CAB In-House Annual Emissions Reporting
The facility is subject to in-house annual emissions reporting because this facility holds a CSP.

CAB in-house annual emissions reporting is required for: 1) all facilities holding a CSP; and 2) noncovered source facilities with a potential to emit, based on permit limits, equal to or above the CAB in-house annual emissions reporting trigger levels.

Best Available Control Technology (BACT)
This source is not subject to a BACT analysis.

A BACT analysis is required for new sources and significant modifications to sources that have the potential to emit or increase emissions above significant levels, as defined in HAR §11-60.1-1, considering any limitations. Potential emissions from the facility with limitations will not exceed significant levels.

Pollutant	Limited Emissions (tons/yr)	BACT Threshold Significant Amounts (TPY)
CO	85.48	100
NO_X	26.14	40
SO_2	2.99	40
PM	20.45	25
PM_{10}	10.53	15
$PM_{2.5}$	7.51	10
VOC	16.14	40

Although not subject to a BACT analysis, emission controls include the use of wet suppression, water hoses, water truck, etc., to minimize fugitive dust emissions from aggregate handling and storage activities. The drum mixer/dryer is equipped with a high efficiency baghouse which greatly removes particulate matter, and the 1,170 kW DEG is EPA Tier 4F certified.

Insignificant Activities:

Diesel Engine

The 110kW/148 hp Perkins DEG is insignificant in accordance with HAR §11-60.1-82(f)(2) because the DEG has a heat input capacity of less than one million BTU per hour. The max fuel consumption of the DEG is 6.3 gal/hr based on manufacturer's data.

> Maximum heat input for the DEG is calculated as 6.3 gal/hr x 137,030 btu/gal = 863,289 btu/hr.

The 110 kW DEG will be fired on diesel fuel oil No. 2 with a maximum sulfur content of 0.0015% by weight. Carbon monoxide (CO), nitrogen oxides (NO_x), particulate matter 10 micrometers in diameter and smaller (PM_{10}) and volatile organic compounds (VOC) emissions were based on emission factors from AP-42, Section 3.3 (10/96) – Gasoline and Diesel Industrial Engines. Sulfur dioxide (SO_2) emissions were based on the mass-balance method. Per AP-42, Appendix B.2 (1/95), when emission factors were not available, it was assumed that PM_{10} = ninety-six percent (96%) of PM and particulate matter 2.5 micrometers in diameter and smaller ($PM_{2.5}$) = ninety percent (90%) of PM.

Hot Oil Heater

The 2.0 MMBtu/hr hot oil heater is insignificant in accordance with HAR §11-60.1-82(f)(7), because emissions of each regulated air pollutant are less than two (2) tons per year. The hot oil heater will operate on either diesel fuel oil No. 2 with a maximum sulfur content of 0.0015% by weight, or liquefied petroleum gas (LPG), specifically propane. Emissions were based on emission factors from AP-42, Section 1.3 (5/10) – Fuel Oil Combustion. Emission calculations were conducted for both fuel options, and the table below reflects the most conservative values.

Insignificant Activities			
Pollutant	**110 kW DEG Emissions (TPY) (8,760 hr/yr)**	**2.0 MMBtu/hr Hot Oil Heater Emissions (TPY) (8,760 hr/yr)**	**Total Insignificant Emissions (TPY)**
CO	3.59	0.72	4.31
NO_X	16.68	1.28	17.95
SO_2	0.01	0.01	0.02
PM	1.22	0.13	1.35
PM_{10}	1.17	0.07	1.24
$PM_{2.5}$	1.10	0.06	1.16
VOC	1.36	0.10	1.46
HAPs	0.015	0.005	0.02
CO_2e	565.21	1309.85	1875.06

Alternate Operating Scenarios:

The permittee may replace the 1,1700 kW DEG with a temporary replacement unit of similar size with equal or lesser emissions, with the exception of CO emissions, if any repair reasonably warrants the removal of the DEG from its site (i.e., equipment failure, engine overhaul, or any major equipment problems requiring maintenance for efficient operation).

Project Emissions:

Limited Emissions from the facility are based on the annual production limit of 540,000 tons of HMA in any rolling twelve-month (12-month) period, operating at a maximum capacity of 400 TPH.

Drum Mixer through Baghouse

Emissions are based on the maximum capacity of the drum mixer to process 400 TPH of HMA. Emission factors (lb/ton) for CO, NO_X, PM, PM_{10}, $PM_{2.5}$, VOC, and HAPs for Diesel fuel No. 2 are from AP-42, Section 11.1 (3/04) – Hot Mix Asphalt Plants.

Drum Mixer through Baghouse		
Pollutant	**Limited Emissions (tons/yr)**	**Emissions (TPY) (8,760 hr/yr)**
CO	35.10	227.76
NO_X	14.85	96.36
SO_2	2.97	19.27
PM	8.91	57.82
PM_{10}	6.21	40.30
$PM_{2.5}$	5.94	38.54
VOC	8.64	56.06
HAPs	2.38	15.42
CO_2e	12,238.02	79,411.18

[1]The highest single HAP emission was Nickel at 0.11 tpy. Since the highest single HAP emission is less than 10 tpy, this facility is not a synthetic minor source for HAP.

Hot Mix Asphalt Silo Filling

Emissions from HMA silo filling were calculated using emission factors from AP-42, Section 11.1 (3/04) – Hot Mix Asphalt Plants. The default values for asphalt volatility and HMA temperature of -0.5 and 325 ˚F, respectively, were used. VOCs were assumed to be one hundred percent (100%) of total organic carbon (TOC) per AP-42, Table 11.1-16. Total PM is assumed to be predominantly $PM_{2.5}$ since emissions consist of condensed vapors per AP-42, Table 11.1-14, Footnote b.

HMA Silo Filling Operation		
Pollutant	**Limited Emissions (tons/yr)**	**Emissions (TPY) (8,760 hr/yr)**
CO	0.32	2.07
PM	0.23	1.47
PM_{10}	0.16	1.03
$PM_{2.5}$	0.16	1.03
VOC	3.29	21.35
HAPs	0.051	0.33

Hot Mix Asphalt Truck Loadout

Emissions from HMA truck loadout operations were calculated using emission factors from AP-42, Section 11.1 (3/04) – Hot Mix Asphalt Plants. The default values for asphalt volatility and HMA temperature of -0.5 and 325 ˚F, respectively, were used. VOCs were assumed to be ninety-four percent (94%) of TOC per AP-42, Table 11.1-16. Total PM is assumed to be predominantly $PM_{2.5}$ since emissions consist of condensed vapors per AP-42, Table 11.1-14, Footnote b.

HMA Truck Loadout Operation		
Pollutant	**Limited Emissions (tons/yr)**	**Emissions (TPY) (8,760 hr/yr)**
CO	0.36	2.36
PM	0.23	1.51
PM_{10}	0.14	0.91
$PM_{2.5}$	0.14	0.91
VOC	1.06	6.85
HAPs	0.026	0.17

1,170 kW Volvo Penta DEG

CO, NOx, PM, and VOC emissions were based on manufacturer specifications provided by the applicant. SO_2 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. The DEG is fired on diesel fuel oil No. 2 with a maximum sulfur content of 0.0015% by weight. Per AP-42, Appendix B.2 (1/95), PM_{10} was assumed to be ninety-six percent (96%) of PM and $PM_{2.5}$ was assumed to be ninety percent (90%) of PM.

1,170 kW DEG	
Pollutant	**Emissions (TPY) (8,760 hr/yr)**
CO	49.69
NO_X	11.29
SO_2	0.02
PM	0.44
PM_{10}	0.42
$PM_{2.5}$	0.40
VOC	3.15
HAPs	0.06
CO_2e	5687.97

Aggregate Handling

Emissions were based on the maximum capacity of the plant. Aggregate handling includes the RAP scalping screen and conveyor transfer points. Emissions were based on emission factors from using AP-42, Section 11.19.2 (8/04) – Crushed Stone Processing and Pulverized Mineral Processing. A seventy percent (70%) control efficiency was assumed for water suppression to control fugitive dust as estimated in AP-42, Section 11.19.1.2 (11/95) – Emissions and Controls.

Aggregate Handling		
Pollutant	**Limited Emissions (tons/yr)**	**Emissions (TPY) (8,760 hr/yr)**
PM	3.98	25.81
PM_{10}	1.42	9.23
$PM_{2.5}$	0.60	3.87

Storage Piles

Storage pile emissions were calculated for the plant operating at maximum capacity. Emissions from storage piles are based on emission factors from AP-42, Section 13.2.4 – Aggregate handling and Storage Piles. Water suppression provides a seventy percent (70%) control efficiency.

Storage Piles		
Pollutant	**Limited Emissions (tons/yr)**	**Emissions (TPY) (8,760 hr/yr)**
PM	2.44	15.80
PM_{10}	1.15	7.47
$PM_{2.5}$	0.17	1.13

Vehicle Travel on Unpaved Roads

The maximum capacity of the plant was used to calculate emissions for vehicle travel on unpaved roads. Emissions were based on emission factors from AP-42, Section 13.2.2 (11/06) – Unpaved Roads. A seventy percent (70%) control efficiency was assumed for water suppression to control fugitive dust.

Vehicle Travel on Unpaved Roads		
Pollutant	**Limited Emissions (tons/yr)**	**Emissions (TPY) (8,760 hr/yr)**
PM	4.23	27.42
PM_{10}	1.030	6.69
$PM_{2.5}$	0.11	0.69

Total Emissions

A summary of the facility's total potential emissions are shown in the tables below:

Total Emissions (Limited) (TPY)								
Pollutant	Drum Mixer	HMA Silo Filling	HMA Load out	1,170 kW DEG	Aggregate Handling	Storage Piles	Unpaved Roads	Total Facility
CO	35.10	0.32	0.36	49.69	-	-	-	85.48
NO_X	14.85	-	-	11.29	-	-	-	26.14
SO_2	2.97	-	-	0.02	-	-	-	2.99
PM	8.91	0.23	0.23	0.44	3.98	2.44	4.23	20.45
PM_{10}	6.21	0.16	0.14	0.42	1.42	1.15	1.03	10.53
$PM_{2.5}$	5.94	0.16	0.14	0.40	0.60	0.17	0.11	7.51
VOC	8.64	3.29	1.06	3.15	-	-	-	16.14
HAPs	2.38	0.05	0.03	0.06	-	-	-	2.51

Total Emissions (8,760 hr/yr) (TPY)								
Pollutant	Drum Mixer	HMA Silo Filling	HMA Load out	1,170 kW DEG	Aggregate Handling	Storage Piles	Unpaved Roads	Total Facility
CO	227.76	2.07	2.36	49.69	-	-	-	281.89
NO_X	96.36	-	-	11.29	-	-	-	107.65
SO_2	19.27	-	-	0.02	-	-	-	19.29
PM	57.82	1.47	1.51	0.44	25.81	15.80	27.42	130.27
PM_{10}	40.30	1.03	0.91	0.42	9.23	7.47	6.69	66.04
$PM_{2.5}$	38.54	1.03	0.91	0.40	3.87	1.13	0.69	46.57
VOC	56.06	21.35	6.85	3.15	-	-	-	87.41
HAPs	15.42[1]	0.33	0.17	0.06	-	-	-	15.98

[1]The highest single HAP emission was Nickel at 0.11 tpy. Since the highest single HAP emission is less than 10 tpy, this facility is not a synthetic minor source for HAP.

Pollutant	Limited Emissions (TPY)	Unlimited Emissions (TPY) [8,760 hr/yr]	Total Insignificant Emissions (TPY)	Total Limited Emissions (TPY)	Total Unlimited Emissions (TPY) [8,760 hr/yr]	Major Source Applicability (TPY)
CO	85.48	281.89	4.31	89.79	286.20	100
NO_x	26.14	107.65	17.95	44.09	125.60	100
SO_2	2.99	19.29	0.02	3.01	19.31	100
PM	20.45	129.22	1.35	21.80	130.57	-
PM_{10}	10.53	66.04	1.24	11.78	67.29	100
$PM_{2.5}$	7.51	46.57	1.16	8.67	47.73	100
VOC	16.14	87.41	1.46	17.59	88.87	100
HAPs	2.51	15.98	0.02	2.53	16.00	10 TPY single HAP or 25 TPY combined HAPs

Synthetic Minor Source:

A synthetic minor source means a source that otherwise has the potential to emit regulated New Source Review (NSR) pollutants in the amounts at or above the thresholds for major sources but has taken restrictions, so that its potential to emit is less than such amounts for major sources. This facility is a synthetic minor source for the purposes of Title V because potential CO and NO_x emissions would exceed major source thresholds if operated without limitations for 8,760 hours per year. This facility is a synthetic minor source for the purposes of PSD because potential CO emissions would exceed major stationary source levels if operated without limitations for 8,760 hours per year.

With the imposed limits and considering insignificant activity emissions, the facility's potential emissions for CO, with limits (and considering emissions from insignificant activities), is above eighty percent (80%) of the Title V major source threshold, thus it is classified as an SM-80 source.

Ambient Air Quality Assessment:

An ambient air quality impact assessment (AAQIA) was required to demonstrate the facility will comply with the State and National Ambient Air Quality Standards (SAAQS and NAAQS). The applicant performed an assessment of the potential ambient air quality impacts using U.S. EPA air quality model AERMOD. The HMA plant's baghouse was modeled as a point source. The 1,170 kW DEG is a single enclosed body container and is made up of two (2) 836 hp Volvo Penta diesel engines, however the maximum output of the engines are limited by the manufacturer to 585 kW (784.5 hp). The container has two (2) emissions stacks, one (1) for each engine. Each engine was modeled as a point source. The 110 kW DEG and hot oil heater are considered insignificant activities pursuant to HAR §11-60.1-82(f)(2), and §11-60.1-82(f)(7), respectively. Therefore, an ambient air quality impact analysis is not required for the 110 kW DEG or the hot oil heater system. Despite this exemption, the applicant included the hot oil heater in their assessment and modeled it as a point source.

AAQIA Background

The Lakes Environmental AERMOD (v.23132) program was used by the applicant to determine maximum pollutant impacts from the facility. The model assumptions are listed below:

1. Elevated terrain was used, and the terrain data was taken from the U.S. Geological Survey website (National Elevation Dataset) and was imported directly into the modeling software. Data resolution is one (1) arc-second (thirty (30) meters) with NAD-83 as the horizontal datum;
2. Rural dispersion parameters were applied;
3. Receptor grid spacing was set at the following intervals:

    a. 25 m spaced receptors along the property boundary to which public access is restricted by a combination of fencing, steep terrain, and dense vegetation;
    b. 25 m spaced receptors centered on the project property out to 0.75 km;
    c. 100 m spaced receptors from 0.75 km to 1.5 km;
    d. 500 m spaced receptors from 1.5 km to 5.0 km, and;
    e. 1,000 m spaced receptors from 5.0 km to 10 km.

4. Buildings at/near the facility were incorporated into the model to evaluate downwash effects of nearby structures. Building inputs were obtained from the applicant;
5. Five (5) years of meteorological surface data from the nearest National Weather Service (NWS) station was used. The NWS data was obtained from the Kalaeloa Airport (PHJR) for Years 2019-2023; and
6. The Ambient Ratio Method Version 2 (ARM2) conversion of NO_x to nitrogen dioxide (NO_2)) was utilized to determine the NO_2 impacts. The default values of the minimum and maximum NO_2/NO_x ratio of 0.5 and 0.9, respectively, were used in the analysis.

Emission Rates and Stack Parameters

The emission rates and stack parameters used in this analysis, as provided by the permittee, are detailed in the tables below.

Source	Emission Rates (g/s)					Stack Parameters			
	SO_2	NO_x	CO	PM_{10}	$PM_{2.5}$	Height (m)	Diameter (m)	Flow Rate (m^3/s)	Temp (°K)
Drum Mixer Baghouse	5.54E-01	2.772	6.552	1.17	1.11	9.14	1.28	36.84	388.71
1,170 kW DEG Stack A	3.31E-04	0.162	0.715	6.08E-03	5.70E-03	2.90	0.21	1.89	695.93
1,170 kW DEG Stack B	3.31E-04	0.162	0.715	6.08E-03	5.70E-03	2.90	0.21	1.89	695.93
Hot oil Heater	3.92E-04	0.037	0.021	1.99E-03	1.53E-03	2.87	0.305	0.65	588.71

Results

The tables below show that the predicted ambient air quality impacts from the operation of the equipment at the proposed initial location should comply with SAAQS and NAAQS.

Predicted Ambient Air Quality Impacts							
Air Pollutant	Averaging Period	Modeled Impact[1,2] ($\mu g/m^3$)	Background[3] ($\mu g/m^3$)	Total Impact ($\mu g/m^3$)	SAAQS ($\mu g/m^3$)	NAAQS ($\mu g/m^3$)	% Standard
CO	1-hour	763.90	916.48	1680.38	10,000	40,000	16.80%
	8-hour	430.10	458.24	888.34	5,000	10,000	17.77%
NO_2	1-hour	129.00	43.28	172.28	--	188	91.64%
	Annual	21.40	6.21	27.61	70	100	39.44%
PM_{10}	24-hour	24.73	76.00	100.73	150	150	67.15%
	Annual	3.56	16.70	20.26	50	--	40.52%
$PM_{2.5}$	24-hour	22.49	8.03	30.52	--	35	87.20%
	Annual	3.08	3.70	6.78	--	9	75.33%
SO_2	1-hour	64.27	16.68	80.95	--	196	41.09%
	3-hour	22.69	39.31	62.00	1,300	1,300	4.77%
	24-hour	11.24	5.24	16.48	365	365	4.52%
	Annual	1.35	2.62	3.97	80	80	4.96%

[1] The maximum concentrations from the model were used for all averaging periods for CO, the annual averaging period for NO_2, all averaging period for PM_{10}, the annual averaging period for $PM_{2.5}$, and the 3-hour, 24-hour, and annual averaging period for SO_2.

[2] The 1-hour NO_2 modeled impact was based on the 5-year average of the 8th highest (98th-percentile) values for NO_2. The 24-hour $PM_{2.5}$ modeled impact was based on the 5-year average of the 8th highest (98th-percentile) values for $PM_{2.5}$. The 1-hour SO_2 modeled impact was based on the 5-year average of the 4th highest (99th percentile) values for SO_2.

[3] Background concentrations were taken from the State of Hawaii Air Quality Data Annual Summary 2021-2023. The concentrations were taken from the Kapolei monitoring station for CO, NO_2, PM_{10}, $PM_{2.5}$, and SO_2. The 1-hour SO_2 is the 99th percentile averaged over three (3) years. The 1-hour NO_2 and 24-hour $PM_{2.5}$ are the 98th percentile averaged over three (3) years. The annual $PM_{2.5}$ is the annual mean averaged over three (3) years. 3-year maximums were used for 3-hour SO_2, 24-hour SO_2, annual SO_2, annual NO_2, 24-hour PM_{10}, annual PM_{10}, 1-hour CO, and 8-hour CO.

[4] Annual data was calculated based on the proposed 540,000 tons of hot mix asphalt in any rolling twelve-month (12-month) period production limit operating at maximum capacity of 400 tons/hr.

Significant Permit Conditions:

1. Operating Limits

   The 400 TPH Hot Mix Asphalt Plant shall be limited to a maximum production rate of 540,000 tons of hot mix asphalt in any rolling twelve-month (12-month) period.

   Reason: The limit was proposed by the applicant to limit CO, NOx, and PM emissions below significant levels. The limit also results in maximum potential emissions below Title V trigger levels.

2. Fuel Limits

   a. The drum mixer/dryer shall be fired only on diesel fuel oil No. 2 with a maximum sulfur content not to exceed 0.0015% by weight.
   b. DEG

      i. The DEG shall be fired only on diesel fuel oil No. 2 with a maximum sulfur content not to exceed 0.0015% by weight; and
      ii. A minimum cetane index of forty (40) or maximum aromatic content of thirty-five (35) volume percent.

   Reason: Fuel requirements proposed by the applicant.

3. Particulate Matter Emission Limit

   The permittee shall not discharge or cause the discharge into the atmosphere from the baghouse servicing the drum mixer/dryer, particulate matter in excess of ninety (90) mg/dscm (0.04 gr/dscf).

   Reason: The Hot Mix Asphalt Plant is subject to 40 CFR Part 60, Subpart I.

Conclusion and Recommendations:

Grace Pacific LLC, submitted an initial application to install and operate a 400 TPH HMA Plant powered by an 1,170 kW DEG. Potential emissions were based on operation of the equipment at maximum capacity with a limited production rate of 540,000 tons of hot mix asphalt in any rolling twelve-month (12-month) period. Based on the results from the ambient air quality impact analysis, this facility should be in compliance with NAAQS and SAAQS. The equipment, if operated in accordance with the permit, shows compliance with air regulations. Recommend issuance of the temporary CSP subject to the incorporation of the significant permit conditions, thirty (30) day public comment period, and forty-five (45) day EPA review period.

Evan Fujimoto
July 10, 2025

Application
and
Supporting Information

From:	Harry Johnson
To:	Fujimoto, Evan
Cc:	Scott Komatsu; Jarrad Alcantara; Jarred Hernden
Subject:	[EXTERNAL] RE: 0923-01 - Grace Pacific - 400 TPH HMA Plant - Permit Draft
Date:	Tuesday, August 26, 2025 10:39:18 AM

Thank you Evan, much appreciated.

Aloha

Harry

From: Fujimoto, Evan <evan.fujimoto@doh.hawaii.gov>
Sent: Tuesday, August 26, 2025 10:28 AM
To: Harry Johnson <hjohnson@gracepacific.com>
Cc: Scott Komatsu <skomatsu@gracepacific.com>; Jarrad Alcantara <jalcantara@gracepacific.com>; Jarred Hernden <jhernden@gracepacific.com>
Subject: Re: 0923-01 - Grace Pacific - 400 TPH HMA Plant - Permit Draft

Hi Harry,

Understood. FYI the emissions calculations will be based on the 400 TPH processing capacity of the Plant, limited by the 540,000 tpy production limit. I'll make the change then forward to my supervisor today.

thank you,
Evan Fujimoto

Environmental Engineer | Clean Air Branch

Hawai'i State Department of Health | Ka 'Oihana Olakino

2827 Waimano Home Road, #130 | Pearl City, HI 96782

Office: (808) 586-4200

From: Harry Johnson <hjohnson@gracepacific.com>
Sent: Tuesday, August 26, 2025 10:12 AM

To: Fujimoto, Evan <evan.fujimoto@doh.hawaii.gov>
Cc: Scott Komatsu <skomatsu@gracepacific.com>; Jarrad Alcantara <jalcantara@gracepacific.com>; Jarred Hernden <jhernden@gracepacific.com>
Subject: [EXTERNAL] Re: 0923-01 - Grace Pacific - 400 TPH HMA Plant - Permit Draft

Hi Evan,

For the 4X8 scalping screen, there is not a TPH designation. This screen is simply used in line and is part of the additive (RAP) feed system.

Aloha

Harry

From: Fujimoto, Evan <evan.fujimoto@doh.hawaii.gov>
Sent: Tuesday, August 26, 2025 8:50:49 AM
To: Harry Johnson <hjohnson@gracepacific.com>
Cc: Scott Komatsu <skomatsu@gracepacific.com>; Jarrad Alcantara <jalcantara@gracepacific.com>; Jarred Hernden <jhernden@gracepacific.com>
Subject: Re: 0923-01 - Grace Pacific - 400 TPH HMA Plant - Permit Draft

Hi Harry,

Responses to your comments below:

1. Added all the additions to model and serial nos. per your comments;
2. "This requirement is unusual. Does our tier 4 DEG really require a stack test?"
    a. Attachement II, Section C.10.(e) refers to the DEG and control devices if they are not installed, configured, operated, and maintained according to the manufacturer's emission-related written instructions, or emission-related settings are changed in a way that is not permitted by the manufacturer. If the newly installed DEG is installed, configured, operated, and maintained according to the manufacturer, then the testing in this case would not be applicable.
3. "Is this the same style test as the "initial performance test"?"
    a. Yes, Please refer to Section F which refers to the test methods set forth in 40 CFR Part 60, Appendix A, and the procedures in 40 CFR §60.8

If there are no other comments or questions on your end, I'll go ahead and send it over to my supervisor for final approval and then it will go ahead and get processed for the EPA 45-day review period and concurrent 30 day public notice period.

Thank you,

Evan Fujimoto

Environmental Engineer | Clean Air Branch

Hawai'i State Department of Health | Ka 'Oihana Olakino

2827 Waimano Home Road, #130 | Pearl City, HI 96782

Office: (808) 586-4200

From: Harry Johnson <hjohnson@gracepacific.com>
Sent: Friday, August 22, 2025 4:15 PM
To: Fujimoto, Evan <evan.fujimoto@doh.hawaii.gov>
Cc: Scott Komatsu <skomatsu@gracepacific.com>; Jarrad Alcantara <jalcantara@gracepacific.com>; Jarred Hernden <jhernden@gracepacific.com>
Subject: [EXTERNAL] RE: 0923-01 - Grace Pacific - 400 TPH HMA Plant - Permit Draft

Hi Evan,

Attached you will find draft CSP 0923-01-CT with my comments. You should have already received the replacement application fee check.

Please take a look and let me know if you have any questions.

Aloha and Mahalo,

Harry

From: Fujimoto, Evan <evan.fujimoto@doh.hawaii.gov>
Sent: Tuesday, August 12, 2025 3:46 PM

To: Harry Johnson <hjohnson@gracepacific.com>
Subject: 0923-01 - Grace Pacific - 400 TPH HMA Plant - Permit Draft

Hi Harry,

Please see the attached draft Permit for the 400 TPH HMA Plant. If you could please let me know if you have any comments or questions on the draft permit prior to issuing for public comment and the concurrent EPA 45-day review period I would greatly appreciate it.

Thank you,
Evan Fujimoto
Environmental Engineer | Clean Air Branch
Hawai'i State Department of Health | Ka 'Oihana Olakino
2827 Waimano Home Road, #130 | Pearl City, HI 96782
Office: (808) 586-4200

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From: Harry Johnson
To: Fujimoto, Evan
Subject: [EXTERNAL] RE: 0923-01 - 400 TPH Hot Mix Asphalt Plant - Draft Comments/Questions
Date: Monday, July 7, 2025 4:05:16 PM

Hi Evan,

Thank you.

Aloha!

Harry

From: Fujimoto, Evan <evan.fujimoto@doh.hawaii.gov>
Sent: Monday, July 7, 2025 8:35 AM
To: Harry Johnson <hjohnson@gracepacific.com>
Subject: Re: 0923-01 - 400 TPH Hot Mix Asphalt Plant - Draft Comments/Questions

Hi Harry,

Sorry for the delayed reply, was out of the office a couple of days last week. Thank you for the responses to the questions, based on the information I'll go ahead and makes some updates to the drafts and get them back to my supervisor today. After looking over my changes we should have a draft for you guys to review shortly prior to sending to EPA for comment.

As far as the DAS, I believe it is sufficient in monitoring compliance with the tonnage limit. As mentioned in my previous email on 7/1, I am going to include a permit condition referencing the use of the DAS to ensure compliance.

Feel free to let me know if you have any questions.

Thank you,
Evan Fujimoto
Environmental Engineer | Clean Air Branch
Hawai'i State Department of Health | Ka 'Oihana Olakino
2827 Waimano Home Road, #130 | Pearl City, HI 96782
Office: (808) 586-4200

From: Harry Johnson <hjohnson@gracepacific.com>
Sent: Wednesday, July 2, 2025 2:23 PM
To: Fujimoto, Evan <evan.fujimoto@doh.hawaii.gov>
Subject: [EXTERNAL] RE: 0923-01 - 400 TPH Hot Mix Asphalt Plant - Draft Comments/Questions

Hi Evan,

I was able to figure out that Maui Paving Camp 10 is covered by CSP 0040-01-CT. I also found the reference to the "cell tech meter" but still don't know what it is exactly. I tried to figure it out online but am now 100% sure this is not the correct equipment to monitor our production in the new plant. This is what google AI says about it:

"Based on the provided context, the term "cell tech meter" does not appear to be a standard term related to monitoring the production rate (tons/hour) of an AC (Air Conditioning or Asphalt Concrete) plant.
The search results discuss various types of meters and monitoring systems, including:

- AC Current Meters: These measure the electrical current draw of an HVAC system, which can be used for performance monitoring and troubleshooting.
- Anode Cell Monitoring Systems: These systems monitor the amp draw of individual "TechCELLs," used in processes like electroplating, to assess their performance.
- Power Meters: Multifunction power meters like those from Electro Industries/GaugeTech are used to monitor overall energy consumption, demand, and power quality in buildings and industrial facilities.
- Production Monitoring Systems: Systems like Evocon are designed to track various aspects of manufacturing production, including production volume and cycle times.
- Flow Meters: While not specifically mentioned in the context of "cell tech meters," mass flow meters are used in industrial processes to measure the flow of materials like gases or powders, which could be related to production rates.

In summary, there is no evidence to suggest that "cell tech meter" is a specific type of meter for monitoring the tons/hour production rate of an AC plant. The term "cell tech" may be specific to a particular application or industry not covered by the provided results.
To understand the specific requirement in Special Condition No. C.1.a, you would need to consult the full text of the document containing this condition. This document would likely describe the specific type of monitoring equipment required to demonstrate compliance. "

What did you think about the info I sent yesterday about the DAS? Please lmk…

Aloha and Mahalo,

Harry

From: Harry Johnson

Sent: Tuesday, July 1, 2025 9:34 AM
To: Fujimoto, Evan <evan.fujimoto@doh.hawaii.gov>
Subject: RE: 0923-01 - 400 TPH Hot Mix Asphalt Plant - Draft Comments/Questions

Hi Evan,

Are you sure about Permit 0040-01-CT being GP's? I don't have any record of permit 0040-01-CT being owned by GP. Which plant is this exactly?

For the Data Acquisition System (DAS), it basically works as follows.

1. Purpose of a Data Acquisition System in Asphalt Plants
The primary goal of a DAS in an asphalt plant is to:

- **Collect real-time data** from various parts of the plant during production.
- **Store, process, and report** the data in a way that supports operations, maintenance, and regulatory compliance.
- Provide a **verifiable audit trail** of production totals and other key metrics.

2. Core Components of a DAS for Asphalt Plants
a. Sensors and Data Inputs
Sensors are installed throughout the plant to measure:

- **Aggregate weights** via belt scales or load cells.
- **Asphalt binder flow** through flow meters.
- **Total mixed product** output through weigh hoppers or continuous flow weighers.

b. Programmable Logic Controller (PLC) / Central Controller
This unit processes real-time data from the sensors and orchestrates the plant's operation (e.g., timing of material feeds, burner control, etc.).
c. Human-Machine Interface (HMI) / SCADA System
This is where operators view system performance and manage production. It often includes visual dashboards, alarms, and manual override capabilities.
d. Data Logger / Historian
This is the "memory" of the DAS. It logs data such as:

- Timestamps for each batch or continuous production run
- Total HMA tonnage per shift/day/week/month
- Cumulative totals across custom time periods (like a rolling 12 months)

e. Communication and Storage
Data can be stored locally (e.g., on PLCs or servers) or remotely (e.g., in cloud-based systems). Remote storage allows for redundancy, off-site access, and integration with compliance systems.
3. How the DAS Ensures Compliance with a Rolling 12-Month Limit
The **rolling 12-month limit** of **540,000 tons of HMA** is a regulatory requirement that doesn't align with calendar years—it shifts every month (or even daily), always counting the most recent 12 months.
a. Tonnage Tracking Logic

The DAS uses cumulative production totals to calculate HMA output. Every time a batch is produced or continuous production runs, the exact tonnage is recorded with a **timestamp**.

b. Rolling Window Calculation

At any given time, the system computes the **sum of all production from the most recent 12 months**. This involves:

- Pulling data from logs covering the previous 365 days.
- Summing all HMA tonnage entries in that time window.
- Comparing the total against the 540,000-ton limit.

c. Alerts and Threshold Warnings

The DAS can be configured to issue warnings when:

- The plant is approaching a preset percentage of the 540,000-ton limit (e.g., 90%, 95%).
- The rolling total is exceeded.

This gives operators and management time to plan production adjustments or take corrective actions.

d. Automated Compliance Reports

The DAS can automatically generate reports showing:

- Monthly production totals.
- Rolling 12-month totals.
- Historical compliance data (auditable).
- Graphs and tables showing trends.

These reports can be exported in formats like PDF, Excel, or CSV for submission to regulators.

4. Ensuring Accuracy and Integrity

To maintain data accuracy and reliability, the system incorporates:

a. Calibration and Verification

- **Belt scales, flow meters, and load cells** must be regularly calibrated.
- The DAS can log calibration dates and notify operators when calibration is due.

b. Audit Trails

- Each data entry is timestamped.
- Changes to production data (manual overrides, for instance) are logged with user credentials, timestamps, and reasons.

c. Security and Access Control

- Access to the DAS is password protected and role-based.
- Only authorized personnel can adjust system parameters or extract sensitive reports.

5. Example Scenario

If today is **July 1, 2025**, the DAS will calculate total HMA production from **July 2, 2024 through July 1, 2025**. If the total is **539,000 tons**, the system might issue a **"Near Limit" warning**, and no more than **1,000 tons** should be produced today unless some earlier production "drops off" the 12-month window tomorrow.

6. Integration with Other Systems

A modern DAS can integrate with:

- **Plant management systems** (e.g., job order systems, inventory management).

Environmental monitoring systems (e.g., emissions monitoring for air quality compliance).

- **Remote monitoring dashboards** for owners or corporate offices.

Summary

A Data Acquisition System in an asphalt plant is a comprehensive solution for tracking production, managing operations, and ensuring regulatory compliance. It ensures adherence to a **rolling 12-month production cap** by:

- Accurately logging real-time tonnage data
- Computing rolling 12-month totals dynamically
- Issuing alerts when nearing or exceeding thresholds
- Providing verifiable and audit-friendly records

With proper calibration, security, and reporting, a DAS is a reliable tool that supports both operational efficiency and environmental compliance.

LMK if this helps at all?

Aloha and Mahalo,

Harry

From: Fujimoto, Evan <evan.fujimoto@doh.hawaii.gov>
Sent: Tuesday, July 1, 2025 8:00 AM
To: Harry Johnson <hjohnson@gracepacific.com>
Subject: Re: 0923-01 - 400 TPH Hot Mix Asphalt Plant - Draft Comments/Questions

Hi Harry,

I'm personally unsure of what it exactly looks like, however that monitoring condition suggestion of the cell tech meter was taken from another Grace Pacific Permit 0040-01-CT to monitor and record the production rate (tons/hour) of the AC Plant on the permit.

Can you please explain how the DAS for the plant works and how it would accurately be able to ensure compliance with the 540,000 tons of HMA produced in any rolling 12 month period limit?

Thank you,

Evan Fujimoto
Environmental Engineer | Clean Air Branch
Hawai'i State Department of Health | Ka 'Oihana Olakino
2827 Waimano Home Road, #130 | Pearl City, HI 96782
Office: (808) 586-4200

From: Harry Johnson <hjohnson@gracepacific.com>
Sent: Monday, June 30, 2025 3:33 PM
To: Fujimoto, Evan <evan.fujimoto@doh.hawaii.gov>
Subject: [EXTERNAL] RE: 0923-01 - 400 TPH Hot Mix Asphalt Plant - Draft Comments/Questions

Hi Evan,

Thank you for getting this done.

a. "The permittee shall operate and maintain a cell tech meter to monitor and record the production rate (tons/hour) of the HMA plant"

When you say "cell tech meter", what exactly do you have in mind? Could you provide an example of this tech as I am unfamiliar. I was thinking that the DAS for the plant would track and database the required data to make this determination.
LMK
Aloha and Mahalo,
Harry

From: Fujimoto, Evan <evan.fujimoto@doh.hawaii.gov>
Sent: Monday, June 30, 2025 3:13 PM
To: Harry Johnson <hjohnson@gracepacific.com>
Subject: 0923-01 - 400 TPH Hot Mix Asphalt Plant - Draft Comments/Questions

Hi Harry,

I received the draft documents back from my supervisor and after reviewing, there are a few comments and questions I am hoping you can address to move this forward:

2. Can you please confirm there are no other Hot Mix Asphalt Plants on the property or on an adjacent property to the proposed facility location.
3. Emissions and Modeling Emission Rates for the 1,100 kW DEG were calculated based on each engine having a 784.5 hp rating or a total combined rating of 1569 hp, however based on the submitted Engine Emissions data sheet, each engine has a 836 hp rating with a combined 1672 hp rating. Can you please advise why the emissions calculations and modeling rates were based on 784.5 hp per engine? Is the Engine Emissions data sheet submitted for the correct engine?
    a. If the Emissions data sheet is correct and the engine rating is 836 hp, can you

please update and submit the revised calculations as well as an updated Ambient Air Quality Assessment that reflects the correct emission rates of the source.

4. In order to ensure the production limit of 540,000 tons of HMA in any rolling 12-month period, we would like to propose the following monitoring requirement:
    a. The permittee shall operate and maintain a cell tech meter to monitor and record the production rate (tons/hour) of the HMA plant
5. Please confirm that this is an acceptable method for monitoring compliance with the 540,000 ton limit. If you would like to propose an alternative monitoring method that would accurately monitor and record production from the plant we would be happy to discuss.

Please feel free to let me know if you have any questions.

Thank you,

Evan Fujimoto
Environmental Engineer | Clean Air Branch
Hawai'i State Department of Health | Ka 'Oihana Olakino
2827 Waimano Home Road, #130 | Pearl City, HI 96782
Office: (808) 586-4200

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From: Fujimoto, Evan
To: Harry Johnson
Cc: Scott Komatsu; Lori Bernard; Jarrad Alcantara; Jarred Hernden; Ka Ua Cale
Subject: Re: 0923-01 - 400 TPH Hot mix asphalt plant Follow up Questions
Date: Monday, April 7, 2025 3:45:24 PM
Attachments: image001.png

No worries, Thanks!

Evan Fujimoto
Environmental Engineer | Clean Air Branch
Hawai'i State Department of Health | Ka 'Oihana Olakino
2827 Waimano Home Road, #130 | Pearl City, HI 96782
Office: (808) 586-4200

From: Harry Johnson <hjohnson@gracepacific.com>
Sent: Monday, April 7, 2025 3:44 PM
To: Fujimoto, Evan <evan.fujimoto@doh.hawaii.gov>
Cc: Scott Komatsu <skomatsu@gracepacific.com>; Lori Bernard <lbernard@gracepacific.com>; Jarrad Alcantara <jalcantara@gracepacific.com>; Jarred Hernden <jhernden@gracepacific.com>; Ka Ua Cale <mcale@gracepacific.com>
Subject: [EXTERNAL] RE: 0923-01 - 400 TPH Hot mix asphalt plant Follow up Questions

Hi Evan,

Sorry about that. See below;

1100 kW Volvo Penta serial no; DEG #1 Model: TWD1672GE Serial: 2016184304 – DEG #2 Model: TWD1672GE Serial: 2016184307

Aloha!

Harry

From: Fujimoto, Evan <evan.fujimoto@doh.hawaii.gov>
Sent: Monday, April 7, 2025 3:42 PM
To: Harry Johnson <hjohnson@gracepacific.com>
Cc: Scott Komatsu <skomatsu@gracepacific.com>; Lori Bernard <lbernard@gracepacific.com>; Jarrad Alcantara <jalcantara@gracepacific.com>; Jarred Hernden <jhernden@gracepacific.com>; Ka Ua Cale <mcale@gracepacific.com>

Subject: Re: 0923-01 - 400 TPH Hot mix asphalt plant Follow up Questions

Hi Harry,

I didn't see the Serial number for the 1,100 kW DEG on the list. Can you please send that when you get a chance?

Thank you,
Evan Fujimoto
Environmental Engineer | Clean Air Branch
Hawai'i State Department of Health | Ka 'Oihana Olakino
2827 Waimano Home Road, #130 | Pearl City, HI 96782
Office: (808) 586-4200

From: Harry Johnson <hjohnson@gracepacific.com>
Sent: Monday, April 7, 2025 1:28 PM
To: Fujimoto, Evan <evan.fujimoto@doh.hawaii.gov>
Cc: Scott Komatsu <skomatsu@gracepacific.com>; Lori Bernard <lbernard@gracepacific.com>; Jarrad Alcantara <jalcantara@gracepacific.com>; Jarred Hernden <jhernden@gracepacific.com>; Ka Ua Cale <mcale@gracepacific.com>
Subject: [EXTERNAL] RE: 0923-01 - 400 TPH Hot mix asphalt plant Follow up Questions

Hi Evan,

Attached you will find the equipment list with model and serial numbers for the various equipment to be incorporated into the new 400 TPH HMA plant at the Makakilo Quarry. Please take a look and let me know if you have any questions or need any further information.

Aloha!

Harry

From: Fujimoto, Evan <evan.fujimoto@doh.hawaii.gov>
Sent: Monday, April 7, 2025 11:55 AM
To: Harry Johnson <hjohnson@gracepacific.com>
Cc: Scott Komatsu <skomatsu@gracepacific.com>; Lori Bernard <lbernard@gracepacific.com>; Jarrad Alcantara <jalcantara@gracepacific.com>; Jarred Hernden <jhernden@gracepacific.com>; Ka Ua Cale <mcale@gracepacific.com>

Subject: Re: 0923-01 - 400 TPH Hot mix asphalt plant Follow up Questions

Hi Harry,

I apologize for not including this previously, but if you could also please include in the information on the burner on the double barrel drum mixer. Including the type of burner, MMBtu/hr, and associated Model no.

Thank you,
Evan Fujimoto
Environmental Engineer | Clean Air Branch
Hawai'i State Department of Health | Ka 'Oihana Olakino
2827 Waimano Home Road, #130 | Pearl City, HI 96782
Office: (808) 586-4200

From: Harry Johnson <hjohnson@gracepacific.com>
Sent: Monday, April 7, 2025 11:25 AM
To: Fujimoto, Evan <evan.fujimoto@doh.hawaii.gov>
Cc: Scott Komatsu <skomatsu@gracepacific.com>; Lori Bernard <lbernard@gracepacific.com>; Jarrad Alcantara <jalcantara@gracepacific.com>; Jarred Hernden <jhernden@gracepacific.com>; Ka Ua Cale <mcale@gracepacific.com>
Subject: [EXTERNAL] RE: 0923-01 - 400 TPH Hot mix asphalt plant Follow up Questions

Hi Evan,

I have sent your request up the chain to see about getting the info you are requesting. I will stay on top of this request to make sure we get the info to you as soon as humanly possible.

Aloha and Mahalo,

Harry

From: Fujimoto, Evan <evan.fujimoto@doh.hawaii.gov>
Sent: Monday, April 7, 2025 10:36 AM
To: Harry Johnson <hjohnson@gracepacific.com>
Cc: Scott Komatsu <skomatsu@gracepacific.com>; Lori Bernard <lbernard@gracepacific.com>; Jarrad Alcantara <jalcantara@gracepacific.com>; Jarred Hernden <jhernden@gracepacific.com>; Ka Ua Cale <mcale@gracepacific.com>

Subject: Re: 0923-01 - 400 TPH Hot mix asphalt plant Follow up Questions

Hi Harry,

Thanks for the responses, there were a few more questions sent back on 3/12/25, I was hoping you could please answer these as well:

1. Can you please provide the missing model and serial numbers for the following equipment:
    1. Astec drum mixer model no and serial no;
    1. Astec Bag house serial no;
    1. 1100 kW Volvo Penta serial no;
2. Can you please provide a list of the HMA storage system equipment and associated sizes;
    1. for example, number of cold feed bins, silos, SEB, etc, and their sizes;
3. Can you please provide the manufacturer's data for the insignificant 100 kW DEG.

While I am unable to give you an exact time as to when the permit will be issued, it has been made clear to my supervisor that this permit would like to be expedited as indicated in your previously sent letter. Based on the information I received today, and receipt of the additional requested information (above), I should be able to get the draft documents finalized in the next few days and to my supervisor for her review. Following any comments, I will make the necessary changes and will then forward the draft documents to you for any comments, prior to sending the documents to the mandatory EPA 45-day review period and concurrent 30-day public notice period. If no comments are received from EPA after their review, we will process the documents for issuance.

Thank you,
Evan Fujimoto
Environmental Engineer | Clean Air Branch
Hawai'i State Department of Health | Ka 'Oihana Olakino
2827 Waimano Home Road, #130 | Pearl City, HI 96782
Office: (808) 586-4200

From: Harry Johnson <hjohnson@gracepacific.com>

Sent: Monday, April 7, 2025 10:01 AM
To: Fujimoto, Evan <evan.fujimoto@doh.hawaii.gov>
Cc: Scott Komatsu <skomatsu@gracepacific.com>; Lori Bernard <lbernard@gracepacific.com>; Jarrad Alcantara <jalcantara@gracepacific.com>; Jarred Hernden <jhernden@gracepacific.com>; Ka Ua Cale <mcale@gracepacific.com>
Subject: [EXTERNAL] RE: 0923-01 - 400 TPH Hot mix asphalt plant Follow up Questions

Hi Evan,

See Below...

1. Based on the submitted calculations in the application, emissions for the 400 HMA Plant were based on a max production of 540,000 tons per year. Can you please confirm that Grace pacific is proposing that the 400 TPH HMA Plant will be limited to a max production of 540,000 tons of HMA per year? Confirmed, 540,000 Tons per year is a reasonable production limit for GP.
2. The insignificant hot oil heater's emissions were calculated for burning both diesel fuel oil No.2 and LPG. Can you please confirm that Grace pacific intends to fire the hot oil heater on either diesel fuel oil no. 2 or LPG? For the oil heater we would like the option to be able to use both types of fuel. We prefer to use LPG but must use diesel #2 sometimes depending on the situation. In the past we have experienced a LPG shortage where we have been forced to use diesel #2. Our current plan is to use diesel #2 when we first start using the plant, then setup our LPG supply and start using that once the LPG tanks are installed at the facility. Also, because fuel is a commodity and prices fluctuate depending on the market, we need the option to choose between the most cost effective fuel to use at any point in time.
3. Based on the submitted manufacturer's data, it is my understanding that the 1100 kW DEG is made up of two (2) 836 hp Volvo Penta diesel engines each with their own stack out of the housing container. Do you know if the 1100 kW DEG needs both of the 836 hp engines to be running simultaneously in order to operate properly or can the engines run independently for the DEG to provide power? For example, if one of the 836 hp engines were to breakdown, would the DEG still be able to provide the necessary power to the HMA plant? Yes, this gen set consists of 2 generators with 2 separate exhaust stacks. If one of the engines/generators is off line, this would not be enough power to operate the plant. Both engines need to be running to power up the HMA plant. We don't foresee any situation where we would only run one of the two engines at any given time.

Can you give us a realistic projected timeframe of when we could expect approval and issuance of this permit? We were hoping for this application to be expedited as mentioned in the submittal cover letter.

Aloha and Mahalo,

Harry

From: Fujimoto, Evan <evan.fujimoto@doh.hawaii.gov>
Sent: Friday, April 4, 2025 10:59 AM
To: Harry Johnson <hjohnson@gracepacific.com>
Subject: Fw: 0923-01 - 400 TPH Hot mix asphalt plant Follow up Questions

Hi Harry,

Please see below email correspondence with Jarrad. If you could please answer the questions below from our previous emails i would greatly appreciate it!

Thank you,
Evan Fujimoto
Environmental Engineer | Clean Air Branch
Hawai'i State Department of Health | Ka 'Oihana Olakino
2827 Waimano Home Road, #130 | Pearl City, HI 96782
Office: (808) 586-4200

From: Fujimoto, Evan <evan.fujimoto@doh.hawaii.gov>
Sent: Thursday, March 20, 2025 10:54 AM
To: Jarrad Alcantara <jalcantara@gracepacific.com>
Subject: Re: 0923-01 - 400 TPH Hot mix asphalt plant Follow up Questions

Hi Jarrad,

A couple more questions I'm hoping you can provide the answers to:

1. Based on the submitted calculations in the application, emissions for the 400 HMA Plant were based on a max production of 540,000 tons per year. Can you please confirm that Grace pacific is proposing that the 400 TPH HMA Plant will be limited to a max production of 540,000 tons of HMA per year?
2. The insignificant hot oil heater's emissions were calculated for burning both diesel fuel oil No.2 and LPG. Can you please confirm that Grace pacific intends to fire the hot oil heater on either diesel fuel oil no. 2 or LPG?

3. Based on the submitted manufacturer's data, it is my understanding that the 1100 kW DEG is made up of two (2) 836 hp volvo penta diesel engines each with their own stack out of the housing container. Do you know if the 1100 kW DEG needs both of the 836 hp engines to be running simultaneously in order to operate properly or can the engines run independently for the DEG to provide power? For example, if one of the 836 hp engines were to breakdown, would the
   DEG still be able to provide the necessary power to the HMA plant?

Please let me know if you have any questions and thank you for your help.

Thank you,
Evan Fujimoto
Environmental Engineer | Clean Air Branch
Hawai'i State Department of Health | Ka 'Oihana Olakino
2827 Waimano Home Road, #130 | Pearl City, HI 96782
Office: (808) 586-4200

From: Jarrad Alcantara <jalcantara@gracepacific.com>
Sent: Wednesday, March 12, 2025 10:19 AM
To: Fujimoto, Evan <evan.fujimoto@doh.hawaii.gov>
Subject: [EXTERNAL] RE: 0923-01 - 400 TPH Hot mix asphalt plant Follow up Questions

Hey Evan,

Ok. I'll try and get that information to you by this week.

Jarrad Alcantara
EHS Safety Manager
Cell: (808) 286-1790
Email: jalcantara@gracepacific.com

From: Fujimoto, Evan <evan.fujimoto@doh.hawaii.gov>
Sent: Wednesday, March 12, 2025 10:05 AM
To: Jarrad Alcantara <jalcantara@gracepacific.com>
Subject: Re: 0923-01 - 400 TPH Hot mix asphalt plant Follow up Questions

Hi Jarrad,

There's no deadline, I will just need the information prior to completing the draft permit.

Thank you,
Evan Fujimoto
Environmental Engineer | Clean Air Branch
Hawai'i State Department of Health | Ka 'Oihana Olakino
2827 Waimano Home Road, #130 | Pearl City, HI 96782
Office: (808) 586-4200

From: Jarrad Alcantara <jalcantara@gracepacific.com>
Sent: Wednesday, March 12, 2025 10:01 AM
To: Fujimoto, Evan <evan.fujimoto@doh.hawaii.gov>
Subject: [EXTERNAL] RE: 0923-01 - 400 TPH Hot mix asphalt plant Follow up Questions

Hey Evan,

No problem. Is there a deadline for me to send you this information?

Jarrad Alcantara
EHS Safety Manager
Cell: (808) 286-1790
Email: jalcantara@gracepacific.com

From: Fujimoto, Evan <evan.fujimoto@doh.hawaii.gov>
Sent: Wednesday, March 12, 2025 9:52 AM
To: Jarrad Alcantara <jalcantara@gracepacific.com>
Subject: 0923-01 - 400 TPH Hot mix asphalt plant Follow up Questions

Hi Jarrad,

I was wondering if you could assist in providing the following information in regards to the

permit application for the 400 TPH Hot mix asphalt plant:

1. Can you please provide the missing model and serial numbers for the following equipment:
    a. Astec drum mixer model no and serial no;
    b. Astec Bag house serial no;
    c. 1100 kW Volvo Penta serial no;
2. Can you please provide a list of the HMA storage system equipment and associated sizes;
    a. for example, number of cold feed bins, silos, SEB, etc, and their sizes;
3. Can you please provide the manufacturer's data for the insignificant 100 kW DEG.

Feel free to let me know if you have any questions.

Thank you,
Evan Fujimoto
Environmental Engineer | Clean Air Branch
Hawai'i State Department of Health | Ka 'Oihana Olakino
2827 Waimano Home Road, #130 | Pearl City, HI 96782
Office: (808) 586-4200

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HAND DELIVERED
JAN 21 2025

Grace Pacific LLC
G P Roadway Solutions • GLP Asphalt

January 16, 2025

Ms. Marianne Rossio, Manager
Clean Air Branch
Environmental Management Division
Hawaii Department of Health
P.O. Box 3378
Honolulu, Hawaii 96801-3378

Subject: **Application for a Temporary Covered Source Permit [CSP]**
Makakilo Quarry 400 TPH Hot Mix Asphalt Plant – Support Facility Response
Grace Pacific LLC

Dear Ms. Rossio:

Grace Pacific LLC (GP) is submitting additional information as requested by the Department of Health Clean Air Branch for the application for a Temporary Covered Source Permit (CSP) for a 400 ton per hour (TPH) Hot Mix Plant to be located at the Makakilo Quarry. Makakilo Quarry's aggregate crushing and screening plant (permitted under 0045-01-C/CT) is a not deemed a support facility to the newly proposed 400 TPH Hot Mix Asphalt Plant (HMA Plant) as per the provided information. Please find the enclosed the Trinity Consultants Memorandum regarding the 400 TPH Hot Mix Asphalt Plant – Support Facility Response which provides details to support that the two facilities are separate sources.

Please note that all the sales information in Table 1 of the enclosed Trinity Consultants Memorandum RE: 400 TPH Hot Mix Asphalt Plant – Support Facility Response is confidential Grace Pacific LLC information.

If there are any questions regarding this application, please contact Jodie Cordero at 808-561-3368, jcordero@gracepacific.com or me at 808-306-7991, skomatsu@gracepacific.com.

This cover letter and enclosure are submitted and certified by the responsible official (as defined in HAR 11-§60.1-1):

Name (Last): Komatsu (First): Scott
Title: Vice President of Materials, Grace Pacific LLC
Phone: 808-306-7991
Mailing Address: Grace Pacific LLC, P.O. Box 78, Honolulu, HI 96810-0078

MD 24453

Certification by Responsible Official (pursuant to HAR 11-§60.1-4):

I certify that I have knowledge of the facts herein set forth, that the same are true, accurate and complete to the best of my knowledge and belief, and that all information not identified by me as confidential in nature shall be treated by the Department of Health as public record. I further state that I will assume responsibility for the construction, modification, or operation of the source in accordance with the Hawaii Administrative Rules (HAR), Title 11, Chapter 60.1, Air Pollution Control, and any permit issued thereof.

Name (Print/Type): Scott Komatsu

(Signature): Scott Komatsu Date: 1/17/25

Sincerely,

Scott Komatsu
Vice President Materials

Enclosure: Trinity Consultants Memorandum RE: 400 TPH Hot Mix Asphalt Plant – Support Facility Response

c: Lori Bernard, Asphalt Plants Manager
Jay Obrey, Quarry Operations Manager
Jodie Cordero, Risk Manager
Stephen Beene, Trinity Consultants
Chief (AIR-3) Permits Office, Air Division, U.S. EPA Region 9

Trinity Consultants

MEMORANDUM

To: Evan Fujimoto, Hawai'i State Department of Health

cc: Jodie Cordero, Grace Pacific LLC, and Scott Komatsu, Grace Pacific LLC

From: J. Stephen Beene, Trinity Consultants

Date: January 16, 2025

RE: 400 TPH Hot Mix Asphalt Plant – Support Facility Response

In response to your January 9, 2025, email to Jodie Cordero requesting a demonstration of whether the Makakilo Quarry's aggregate crushing and screening plant (permitted under 0045-01-C/CT) is a support facility to the newly proposed 400 TPH Hot Mix Asphalt Plant (HMA Plant), we have reviewed EPA guidance[1] and are providing the following response.

EPA's Prevention of Signification Deterioration (PSD) (40 CFR 52.21) and Title V (40 CFR 70.2) rules define a stationary source as any building, structure, facility, or installation that emits or may emit a regulated air pollutant and further defines "building, structure, facility or installation" as all of the pollutant-emitting activities which belong to the same industrial grouping (Standard Industrial Classification (SIC) code), are located on one or more contiguous or adjacent properties, and are under common control. The Makakilo Quarry's aggregate crushing and screening plant SIC code is 1429 (Crushed and Broken Stone, Not Elsewhere Classified), and the HMA Plant SIC code is 2951 (Asphalt Paving Mixtures and Blocks). Therefore, the facilities have separate major industrial groups (as defined by the first two digits of the SIC Code) and don't meet the above criteria for a stationary source.

The "support facility" link is discussed in the preamble of PSD and Title V regulations but is not codified outside the provision for the Oil and Gas Extraction industrial grouping (SIC Major Group 13). EPA guidance states, "where more than 50% of the output or services provided by one facility is dedicated to another facility that it supports, then a support facility relationship is presumed to exist." Less than 50% of the Makakilo Quarry's aggregate crushing and screening plant will be supplied to the HMA Plant. Please see Table 1 for projected aggregate utilization based upon a similar HMA Plant's past aggregate utilization sales.

Table 1: Projected HMA Plant Aggregate Utilization

A	B	C	D	E
Year	Aggregate Sold to HMA Plant (Tons)	Aggregate Sold to Other Customers (Tons)	Total Aggregate Sold (Tons)	Percent (%) of Total Sold to HMA Plant (B/D=E)
2024	206,193	801,834	1,008,027	20.5%
2023	295,260	830,834	1,126,030	26.2%
2022	244,061	567,062	811,123	30.1%
2021	111,972	765,963	877,935	12.8%
2020	154,775	528,981	683,756	22.6%

[1] EPA letter dated August 25, 1999. Support Facility Determination... Oscar Mayer and Madison Gas and Electric (https://www.epa.gov/sites/default/files/2015-07/documents/oscar.pdf).

12700 Park Central Dr, Ste 600, Dallas, TX 75251
P 800.229.6655 / P 972.661.8100 / F 972.385.9203

In addition to the 50% test, the following factors are also listed:

1. the degree to which the supporting activity receives materials or services from the primary activity (which indicates a mutually beneficial arrangement between the primary and secondary activities);
2. the degree to which the primary activity exerts control over the support activity's operations;
3. the nature of any contractual arrangements between the facilities; and
4. the reasons for the presence of the support activity on the same site as the primary activity (e.g., whether the support activity would exist at that site but for the primary activity).

Although both the aggregate crushing and screening plant and HMA Plant are located in the Makakilo Quarry and owned and operated by Grace Pacific, the HMA Plant serves a different market (asphalt paving), and production is not dependent exclusively on output from the Grace Pacific aggregate crushing and screening plant. The HMA Plant is relocatable and is being permitted as a Temporary Covered Source, and it is intended that the plant be moved if a new, more efficient location is identified for a project. Grace Pacific operates several HMA Plants which are moved around the islands as needed.

In summary, the Makakilo Quarry's aggregate crushing and screening plant and the proposed HMA Plant are separate stationary sources for the following reasons:

(1) The Makakilo Quarry's aggregate crushing and screening plant and the proposed HMA Plant do not belong to the same SIC code major group.

(2) Less than 50% of the Makakilo Quarry's aggregate crushing and screening plant output will be used by the proposed HMA Plant.

(3) The operations of the two stationary sources are independent, and the location of the proposed HMA Plant may not always be at the Makakilo Quarry.

HAND DELIVERED
DEC 2 0 2024

Grace Pacific LLC
G P Roadway Solutions • GLP Asphalt

December 19, 2024

Ms. Marianne Rossio, Manager
Clean Air Branch
Environmental Management Division
Hawaii Department of Health
P.O. Box 3378
Honolulu, Hawaii 96801-3378

Subject: **Application for a Temporary Covered Source Permit [CSP]**
Makakilo Quarry 400 TPH Hot Mix Asphalt Plant
Grace Pacific LLC

Dear Ms. Rossio:

Grace Pacific LLC (GP) is pleased to submit this application for a Temporary Covered Source Permit for a 400 ton per hour (TPH) Hot Mix Asphalt (HMA) Plant. The Air Quality Impact Analysis is also enclosed. Upon start of the review please contact me to download the large air modeling files that is the basis for the Air Quality Impact Analysis. Additionally, a check in the amount of $1,000 is attached for the application fee.

GP seeks to operate the HMA Plant by end of March 2025 and respectfully requests an expedient review. If there are any questions regarding this application, please contact me at 808-561-3368, jcordero@gracepacific.com.

Sincerely,

Jodie Cordero

Jodie Cordero
Risk Manager/Environmental Specialist

Enclosures: Air Quality Impact Assessment
Application fee check

c: Scott Komatsu, Vice President Materials
Lori Bernard, Asphalt Plants Manager
Jay Obrey, Quarry Operations Manager
Stephen Beene, Trinity Consultants
Chief (AIR-3) Permits Office, Air Division, U.S. EPA Region 9

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MD24127

HAND DELIVERED
DEC 20 2024

File / Application No.:_____

S-1: Standard Air Pollution Control Permit Application Form

(Covered Source Permit and Noncovered Source Permit)

State of Hawaii
Department of Health
Environmental Management Division
Clean Air Branch
P. O. Box 3378 • Honolulu, HI 96801-3378 • Phone: (808) 586-4200

1. Company Name: Grace Pacific LLC

2. Facility Name (if different from the Company): 400 TPH Hot Mix Asphalt Plant

3. Mailing Address: P.O. Box 78

   City: Honolulu State: HI Zip Code: 96810-0078

   Phone Number: 808-674-8383

4. Name of Owner/Owner's Agent: Mr. Scott Komatsu (Owner's Agent)

   Title: Vice President, Materials Phone: (808) 674-8383

   Mailing Address: Grace Pacific LLC; P.O. Box 78

   City: Honolulu State: HI Zip Code: 96810-0078

5. Plant Site Manager/Other Contact: Jodie Cordero

   Title: Risk Manager/Environmental Specialist Phone: (808) 561-3368

   Mailing Address: Grace Pacific LLC; P.O. Box 78

   City: Honolulu State: HI Zip Code: 96810-0078

6. Permit Application Basis: (Check appropriate boxes)
   - ■ Initial Permit for a New Source
   - ☐ Initial Permit for an Existing Source
   - ☐ Renewal of Existing Permit
   - ☐ General Permit
   - ■ Temporary Source
   - ☐ Transfer of Permit
   - ☐ Modification to a Covered Source: → Is modification? ☐ Significant ☐ Minor ☐ Uncertain
   - ☐ Modification to a Noncovered Source

7. If renewal or modification, include existing permit number: _____

8. Does the Proposed Source require a County Special Management Area Permit? ☐ Yes ■ No

9. Type of Source (Check One):
   - ■ Covered Source
   - ☐ Covered & PSD Source
   - ☐ Noncovered Source
   - ☐ Uncertain

10. Standard Industrial Classification Code (SICC), if known: 2951

11. Proposed Equipment/Plant Location (e.g. street address): Makakilo Quarry, 91-920 Farrington Highway

City: Kapolei State: HI Zip Code: 96707

UTM Coordinates (meters): East: 596475 North: 2362050

UTM Zone: 4 UTM Horizontal Datum: ☐ Old Hawaiian ☐ NAD-27 ■ NAD-83

12. General Nature of Business: Production of Hot Mix Asphalt

13. Date of Planned Commencement of Installation or Modification: Upon approval of modification

14. Is ***any*** of the equipment to be leased to another individual or entity? ☐ Yes ■ No

15. Type of Organization: ☐ Corporation ☐ Individual Owner ☐ Partnership

☐ Government Agency (Government Facility Code: _____)

■ Other: Limited Liability Company (LLC)

Any applicant for a permit who fails to submit any relevant facts or who has submitted incorrect information in any permit application shall, upon becoming aware of such failure or incorrect submittal, promptly submit such supplementary facts or corrected information. In addition, an applicant shall provide additional information as necessary to address any requirements that become applicable to the source after the date it filed a complete application, but prior to the issuance of the noncovered source permit or release of a draft covered source permit. (HAR § 11-60.1-64 & 11-60.1-84)

RESPONSIBLE OFFICIAL (as defined in §11-60.1-1):

Name (Last): Komatsu (First): Scott (MI): _____

Title: Vice President, Materials Phone: (808) 674-8383

Mailing Address: P.O. Box 78

City: Honolulu State: HI Zip Code: 96810-0078

CERTIFICATION by Responsible Official (pursuant to §11-60.1-4):

I certify that I have knowledge of the facts herein set forth, that the same are true, accurate and complete to the best of my knowledge and belief, and that all information not identified by me as confidential in nature shall be treated by the Department of Health as public record. I further state that I will assume responsibility for the construction, modification, or operation of the source in accordance with the Hawaii Administrative Rules (HAR), Title 11, Chapter 60.1, Air Pollution Control, and any permit issued thereof.

NAME (Print/Type): Scott Komatsu

(Signature): Scott Komatsu Date: 12/17/24

FOR AGENCY USE ONLY:

File/Application No: _____

Island: _____

Date Received: _____

Submit the following documents as part of your application:

A. The ***Emissions Units Table***, filled in as completely as possible. Use separate sheets of paper as needed. General instructions include the following:

1. Identify each **emission point** with a unique number for this plant site, consistent with emission point identification used on the location drawing and previous permits; if known, provide the SICC number. Emission points shall be identified and described in sufficient detail to establish the basis for **fees** and applicability of requirements of HAR, Chapter 11-60.1. Examples of emission point names are: heater, vent, boiler, tank, baghouse, fugitive, etc. Abbreviations may be used.
   a. For each emission point use as many lines as necessary to list regulated and hazardous air pollutant data. For hazardous air pollutants, also list the Chemical Abstracts Service number (CAS#).
   b. Indicate the emission points that discharge together for any length of time.
   c. The **Equipment Date** is the date of equipment construction, reconstruction, or modification. Provide supporting documentation.

2. State the **maximum emission rates** in terms sufficient to establish compliance with the applicable requirements and standard reference test methods. Provide all supporting emission calculations and assumptions:
   a. Include all regulated and hazardous air pollutants and air pollutants for which the source is major, as defined in HAR §11-60.1-1. Examples of regulated pollutant names are: Carbon Monoxide (CO), Nitrogen Oxides (NO_X), Sulfur Dioxide (SO_2), Volatile Organic Compounds (VOC), particulate matter (PM), and particulate less than 10 microns (PM_{10}). Abbreviations may be used.
   b. Include fugitive emissions.
   c. **Pounds per hour (#/HR)** is the maximum potential emission rate expected by applicant.
   Tons per year is the annual maximum potential emissions expected by the applicant, taking into account the typical operating schedule.

3. Describe ***Stack Source Parameters***:
   a. **Stack Height** is the height above the ground.
   b. **Direction** refers to the exit direction of stack emissions: up, down or horizontal.
   c. **Flow Rate** is the actual, not the calculated, flow rate.

4. Provide any additional information, if applicable, as follows:
   a. If combinations of different fuels are used that cause any of the stack source parameters to differ, complete one row for each possible set of stack parameters and identify each fuel in the **Equipment Description**.
   b. For a rectangular stack, indicate the length and width.
   c. Provide any information on stack parameters or any stack height limitations developed pursuant to Section 123 of the Clean Air Act.

B. A **process flow diagram** identifying all equipment used in the process, including the following:
   1. Identify and describe each emission point.
   2. Identify the locations of safety valves, bypasses, and other such devices which when activated may release air pollutants to the atmosphere.

C. A **facility location map**, drawn to a reasonable scale and showing the following:
   1. The property involved and all structures on it. Identify property/fence lines plainly.
   2. Layout of the facility.
   3. Location and identification of the proposed emissions unit on the property.
   4. Location of the property and equipment with respect to streets and all adjacent property. Show the location of all structures within 325 meters of the applicant's emissions unit. Provide the building dimensions (height, length, and width) of all structures that have heights greater than 40% of the stack height of the emissions unit.

D. Provide a description of any proposed modifications or permit revisions. Include any justification or supporting information for the proposed modifications or permit revisions.

Attachment S-1a: Responses to Emissions Units Table Instructions for Form S-1

A.1. Emission Point Identification and Description	See Forms S-1 and Attachment S-1b.
A.2. Maximum Emission Rates	See Forms S-1 and Attachment S-1b.
A.3. Stack Parameters	See Forms S-1
A.4. Additional Information	See Attachment S-1a.
B. Process Flow Diagram	See Figure S-1.1.
C. Facility Location Map	See Figure S-1.2 and S-1.3.
D. Proposed Revisions	None.

FIGURE S-1.1
PROCESS FLOW DIAGRAM

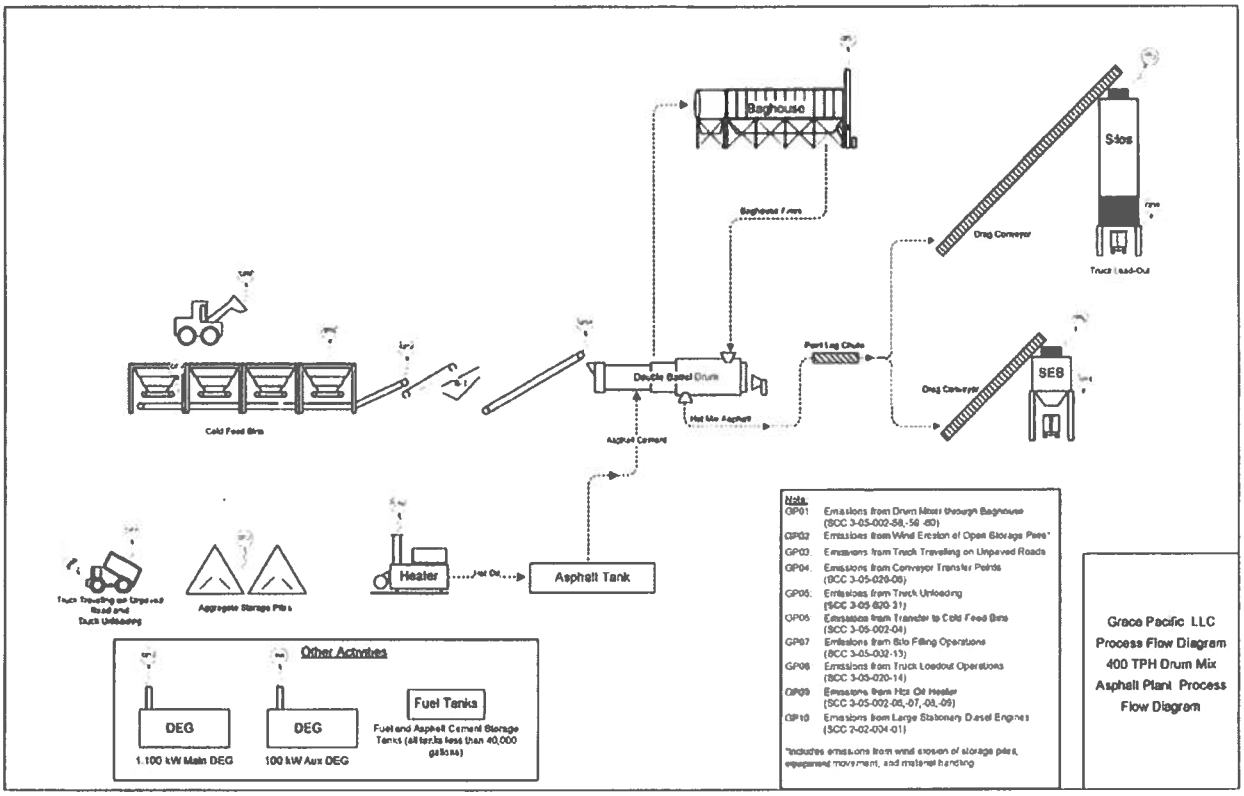


FIGURE S-1.2 LOCATION MAP

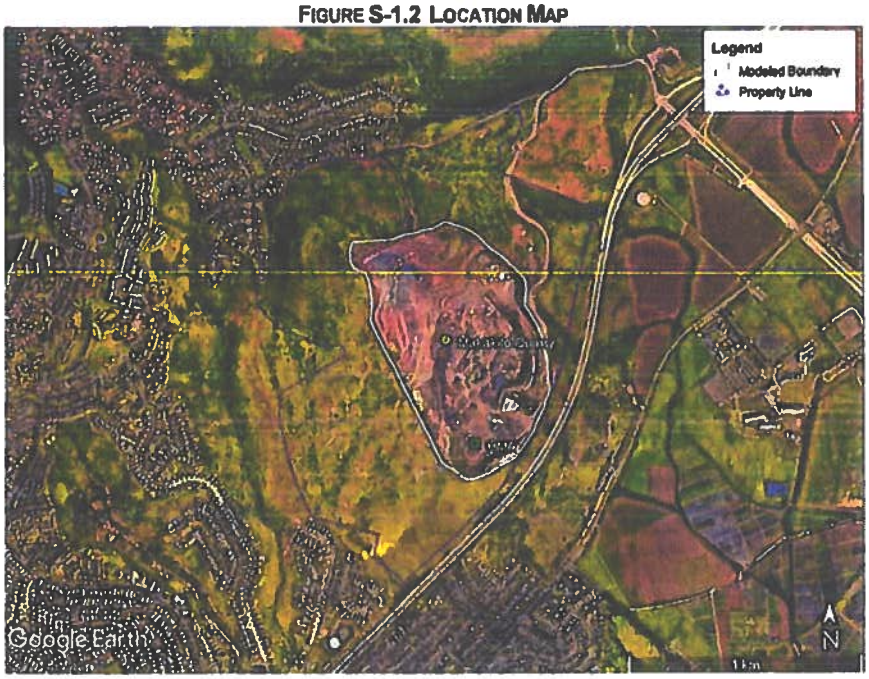


FIGURE S-1.3 PLOT PLAN

ATTACHMENT S-1B – EMISSION CALCULATIONS

Table S-1b-1. Summary of Potential Emissions

Facility Name: Grace Pacific LLC - Hot Mix Asphalt Plant
Equipment Location: Makakilo Quarry, Oahu
Plant Description: 400 TPH Hot Mix Asphalt Plant

Emission Point	Process Description	Potential to Emit								
		Total PM	PM-10	PM-2.5	CO	NOx	SO_2	VOC	HAPs	CO_2e
		(ton/yr)								(mt/yr)
GP01	Drum Mixer through Baghouse	9.0	6.3	6.3	35.1	14.9	3.0	8.6	2.4	8,194
GP02	Wind Erosion of Open Storage Piles	4.5	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
GP03	Truck Travelling on Unpaved Roads	5.1	1.3	0.1	n/a	n/a	n/a	n/a	n/a	n/a
GP04	Conveyor Transfer Points and Screening	0.75	0.249	0.028	n/a	n/a	n/a	n/a	n/a	n/a
GP05	Truck Unloading	0.0025	0.0013	0.0004	n/a	n/a	n/a	n/a	n/a	n/a
GP06	Transfer to Cold Feed Bins	2.2	1.0	0.2	n/a	n/a	n/a	n/a	n/a	n/a
GP07	Silo Filling	0.16	n/a	n/a	0	n/a	n/a	3.3	0.050	n/a
GP08	Truck Loadout	0.14	n/a	n/a	0	n/a	n/a	1.06	0.024	n/a
GP09	Hot Oil Heater	0.21	0.21	0.21	0.72	1.28	0.01	0.08	0.003	1,320
GP10	1,100 kW Diesel Engine Generator	0.88	0.88	0.88	49.69	11.29	0.061	3.15	0.064	6,097
Total Potential Emissions		**22.9**	**10.0**	**7.7**	**86.2**	**27.4**	**3.0**	**16.2**	**2.5**	**15,611**

TABLE S1b-2. EMISSION CALCULATION FROM DRUM MIXER THROUGH BAGHOUSE (GP01)

Facility Name: **Grace Pacific LLC - Hot Mix Asphalt Plant**
Equipment Location: **Makakilo Quarry, Oahu**
Plant Description: **400 TPH Hot Mix Asphalt Plant**

INPUT

Max. Operating Hours	4,368 hours/year
Max. Production / Year:	540,000 tons/year
Max Production / Hour:	400.0 tons/hour
Max Heat Input / Hour:	110 MMBtu/hr

Pollutant	Emission Factor	Emissions		Category	Source
	lb/ton HMA	lb/hour	ton/year		
total PM	0.033	13.4	9.0	Fabric Filter	AP42 Table 11.1-3 and 11.1-4 (3/04)
PM 10	0.023	9.3	6.3		
PM-2.5	0.023	9.3	6.3		
CO	0.130	52.0	35.1	No. 2 Fuel Oil	AP42 Table 11.1-7 (3/04)
NOx	0.055	22.0	14.9		
SO_2	0.011	4.4	3.0		
CO_2	33	13,200	8,910		
VOC	0.032	12.8	8.6		AP42 Table 11.1-8 (3/04)
CH_4	0.012	4.8	3.2		
N_2O	5.11E-04	0.20	0.14		AP42 Table 1.3-8 (5/10)
Non PAH HAPs					
Benzene	3.90E-04	0.16	0.11	No. 2 Fuel Oil with fabric filter	AP42 Table 11.1-10 (3/04)
Ethylbenzene	2.40E-04	0.096	0.065		
Formaldehyde	3.10E-03	1.24	0.84		
Hexane	9.20E-04	0.37	0.25		
Isooctane	4.00E-05	0.016	0.011		
Methyl chloroform	4.80E-05	0.019	0.013		
Toluene	2.90E-03	1.16	0.78		
Xylene	2.00E-04	0.080	0.054		
Total non-PAH HAPs	**7.84E-03**	**3.14**	**2.12**		
PAH HAPs					
2-Methylnaphthalene	1.70E-04	0.0680	0.0459	No. 2 Fuel Oil with fabric filter	AP42 Table 11.1-10 (3/04)
Acenaphthene	1.40E-06	5.60E-04	3.78E-04		
Acenaphthylene	2.20E-05	8.80E-03	5.94E-03		
Anthracene	3.10E-06	1.24E-03	8.37E-04		
Benzo(a)anthracene	2.10E-07	8.40E-05	5.67E-05		
Benzo(a)pyrene	9.80E-09	3.92E-06	2.65E-06		
Benzo(b)fluoranthene	1.00E-07	4.00E-05	2.70E-05		
Benzo(e)pyrene	1.10E-07	4.40E-05	2.97E-05		
Benzo(g,h,i)perylene	4.00E-08	1.60E-05	1.08E-05		
Benzo(k)fluoranthene	4.10E-08	1.64E-05	1.11E-05		
Chrysene	1.80E-07	7.20E-05	4.86E-05		
Fluoranthene	6.10E-07	2.44E-04	1.65E-04		
Fluorene	1.10E-05	4.40E-03	2.97E-03		
Indeno(1,2,3-cd)pyrene	7.00E-09	2.80E-06	1.89E-06		
Naphthalene	6.50E-04	0.260	0.176		
Perylene	8.80E-09	3.52E-06	2.38E-06		
Phenanthrene	2.30E-05	9.20E-03	6.21E-03		
Pyrene	3.00E-06	1.20E-03	8.10E-04		
Total PAH HAPs	8.85E-04	0.354	0.239		
Total Metal HAPs	1.24E-04	0.049	0.033		
Total HAPs	**8.85E-03**	**3.54**	**2.39**		

TABLE S1b-2. CONT. EMISSIONS CALCULATION FROM DRUM MIXER THROUGH BAGHOUSE (GP01)

Pollutant	Emission Factor	Emissions		Category	Source
	lb/ton HMA	lb/hour	ton/year		
Non-HAP organic compounds					
Butane	6.70E-04	0.27	0.18	No. 2 Fuel Oil with fabric filter	AP42 Table 11.1-10 (3/04)
Ethylene	7.00E-03	2.80	1.89		
Heptane	0.0094	3.76	2.54		
2-Methyl-1-pentene	0.004	1.6	1.1		
2-Methyl-2-butene	5.80E-04	0.23	0.16		
3-Methylpentane	1.90E-04	0.08	0.05		
1-Pentene	0.0022	0.88	0.59		
n-Pentane	2.10E-04	0.08	0.06		
Total non-HAP organics	**2.43E-02**	**9.70**	**6.55**		
Metals					
Antimony	1.80E-07	7.20E-05	4.86E-05	No. 2 Fuel Oil with fabric filter	AP42 Table 11.1-12 (3/04)
Arsenic*	5.60E-07	2.24E-04	1.51E-04		
Barium	5.80E-06	2.32E-03	1.57E-03		
Cadmium*	4.10E-07	1.64E-04	1.11E-04		
Chromium*	5.50E-06	2.20E-03	1.49E-03		
Cobalt*	2.60E-08	1.04E-05	7.02E-06		
Copper	3.10E-06	1.24E-03	8.37E-04		
Hexavalent Chromium*	4.50E-07	1.80E-04	1.22E-04		
Lead*	1.50E-05	6.00E-03	4.05E-03		
Manganese*	7.70E-06	3.08E-03	2.08E-03		
Mercury*	2.60E-06	1.04E-03	7.02E-04		
Nickel*	6.30E-05	2.52E-02	1.70E-02		
Phosphorus*	2.80E-05	1.12E-02	7.56E-03		
Silver	4.80E-07	1.92E-04	1.30E-04		
Selenium*	3.50E-07	1.40E-04	9.45E-05		
Thallium	4.10E-09	1.64E-06	1.11E-06		
Zinc	6.10E-05	2.44E-02	1.65E-02		
Total Metal HAPs	**1.24E-04**	**4.94E-02**	**3.34E-02**		

*HAP

Greenhouse Gas (GHG) Pollutant	GWP	GHG Emissions (metric TPY)	
		Mass-Based	CO_2e-Based
CO_2	1	8,083.0	8,083.0
CH_4	25	2.9	73.5
N_2O	298	0.1	37.3
Total			8,193.8

TABLE S1b-3. EMISSION CALCULATIONS FROM WIND EROSION OF OPEN STORAGE PILES (GP02)

Facility Name: **Grace Pacific LLC - Hot Mix Asphalt Plant**
Equipment Location: **Makakilo Quarry, Oahu**
Plant Description: **400 TPH Hot Mix Asphalt Plant**

INPUT:

Max. Annual Production	540,000	tons/yr
Hours per Year[1]	8,760	hr/yr

Pollutant	Emission Factor[2]	Potential Emissions	
	lb/ton	lb/hour[3]	ton/yr
TSP, Uncontrolled	0.33	20.34	89.1
TSP, Controlled[4]	0.0165	1.02	4.46

Notes:

(1) For both active and inactive storage piles. Assumes 5 active days per week.

(2) The emission factor source is the Emission Factor Documentation for AP-42, Section 11.19.1 , Table 4-1. Includes emissions from wind erosion (active and inactive), equipment movement (active), and material handling (active).

(3) Average of active and inactive storage piles

(4) Assumes a control efficiency of 95% per guidance from South Coast Air Quality Management District

TABLE S1b-4. EMISSION CALCULATIONS FOR TRUCK TRAVEL ON UNPAVED ROADS (GP03)

Facility Name:	**Grace Pacific LLC - Hot Mix Asphalt Plant**
Equipment Location:	**Makakilo Quarry, Oahu**
Plant Description:	**400 TPH Hot Mix Asphalt Plant**

$E = k(s/12)^a(W/3)^b$ source: AP42,13.2.2 Equation (1a) November 2006 ed.

$E_{ext} = ((365-p)/365)*k(s/12)^a(W/3)^b$ source: AP42,13.2.2 Equation (2) November 2006 ed.

where E = Emission factor (lb/vehicle miles travelled)
Eext = annual size-specific emission factor extrapolated for natural mitigation (lb/VMT)
k,a,b,c = constant (lb/VMT)
s = surface material silt content (%)
W = mean vehicle weight (tons)
p = number of days with at least 0.01 inches of precipitation per year

Parameter	Value			Source
	PM-2.5	PM-10	PM-30	
a	0.9	0.9	0.7	AP42, Table 13.2.2-2 (11/06)
b	0.45	0.45	0.45	AP42, Table 13.2.2-2 (11/06)
k	0.15	1.5	4.9	AP42, Table 13.2.2-2 (11/06)
s	4.5			AP42, Table 13.2.2-3 (11/06)
W	26.5			Grace Pacific Estimate
p	71			Western Regional Climate Center

	PM-2.5	PM-10	PM-30
Emission (lb/VMT)	0.17	1.65	6.57
Annual Size Specific Extrapolated for Natural Mitigation (lb/VMT)	0.13	1.33	5.29

	Value	Unit
Production Capacity	400	tph
Facility run-time	4,368	hours/yr
Truck load	21	ton/trip
Distance travelled by truck	0.25	miles/trip
Annual production	540,000	ton/year
# of trip per year	25,714	trip/year
Total distance VMT	6,429	miles/year

GP06	PM-2.5		PM-10		PM-30	
	lb/hr	tpy	lb/hr	tpy	lb/hr	tpy
Uncontrolled	0.20	0.43	2.0	4.3	7.8	17.0
Controlled[1]	0.06	0.13	0.6	1.3	3.0	5.1

Note:

(1) 70% control factor is applied to account for water spray

TABLE S1b-5. EMISSION CALCULATIONS FROM AGGREGATE HANDLING ACTIVITIES (GP04, GP05, and GP06))

Facility Name: Grace Pacific LLC - Hot Mix Asphalt Plant
Equipment Location: Makakilo Quarry, Oahu
Plant Description: 400 TPH Hot Mix Asphalt Plant

INPUT			Source
Operating Hours:	4,368	hours/year	Operating Data
Aggregate Throughput	540,000	tons/year	Max. Permitted
	400.00	tons/hour	
Conveyor Transfer Points:	8	points	
Max. in series:	4	points	

PM-2.5	Uncontrolled PM-2.5 Emissions			Controlled PM-2.5 Emissions		
	Emission Factor (lbs/ton)	lb/hr	TPY	Emission Factor (lbs/ton)	lb/hr	TPY
Conveyor transfer points	4.50E-04 (2)	0.72	0.486	1.30E-05 (1)	0.021	0.0140
Screening	3.75E-03 (2)	1.50	1.013	5.00E-05 (1)	0.020	0.0135
Truck Unloading	4.70E-06 (2)	1.88E-03	1.27E-03	1.41E-06 (2)	5.64E-04	3.81E-04

PM-10	Uncontrolled PM-10 Emissions			Controlled PM-10 Emissions		
	Emission Factor (lbs/ton)	lb/hr	TPY	Emission Factor (lbs/ton)	lb/hr	TPY
Conveyor transfer points	0.0011 (1)	1.76	1.188	4.60E-05 (1)	0.074	0.0497
Screening	0.0087 (1)	3.48	2.349	7.40E-04 (1)	0.296	0.200
Truck Unloading	1.60E-05 (1)	6.40E-03	4.32E-03	4.80E-06 (4)	1.92E-03	1.30E-03

TSP	Uncontrolled TSP Emissions			Controlled TSP Emissions		
	Emission Factor (lbs/ton)	lb/hr	TPY	Emission Factor (lbs/ton)	lb/hr	TPY
Conveyor transfer points	0.0030 (1)	4.80	3.24	1.40E-04 (1)	0.22	0.151
Screening	0.0250 (1)	10.00	6.75	2.20E-03 (1)	0.88	0.594
Truck Unloading	3.14E-05 (3)	1.25E-02	8.47E-03	9.41E-06 (4)	3.76E-03	2.54E-03

$E = k*0.0032*(((U/5)^{1.3})/(M/2)^{1.4})$ Source: AP42 Chapter 13.2.4 (11/06)

where E = Emission factor (lb/ton) M= moisture content (%)

k = particle size multiplier U = mean wind speed (mph)

Input Parameters	Value	Source
k (TSP)	0.74	AP42 Chapter 13.2.4 (11/06)
k (PM-10)	0.35	
k (PM-2.5)	0.053	
U	10.5	AP42 Table 7.1-10 (06/20) for Honolulu
M	0.7	AP42 Table 13.2.4-1 (11/06)

Emission Source	Pollutant	Emission Factor (E) lbs/ton	Uncontrolled Emissions		Controlled Emissions (4)	
			lb/hr	ton/year	lb/hr	ton/year
Transfer to Cold-feed Bins	TSP	0.0270	10.81	7.29	3.24	2.19
	PM-10	0.0128	5.11	3.45	1.53	1.03
	PM-2.5	0.00193	0.77	0.522	0.23	0.16

Note:

(1) Emission Factor Source: EPA AP42 Table 11.19.2-2 (8/04)

(2) Emission Factor for PM2.5 = TSP x 0.15 (AP42 Appendix B, Table B.2.2, Category 3)

(3) Emission Factor for TSP = PM10 x 1.96 (AP42 Appendix B, Table B.2.2, Category 3)

(4) 70% control factor is applied to account for water spray. Control efficiency reference AP42 Section 11.19.1.2, Paragraph 3 (11/95)

TABLE S1b-6. EMISSION CALCULATIONS FROM SILO FILLING OPERATION (GP07)

Facility Name: Grace Pacific LLC - Hot Mix Asphalt Plant
Equipment Location: Makakilo Quarry, Oahu
Plant Description: 400 TPH Hot Mix Asphalt Plant

Parameters	Value	Unit	Source
Asphalt Volatility	-0.5		AP42 Table 11.1-14 (3/04)
Mixing Operating Temperature	325	F	AP42 Table 11.1-14 (3/04)

Pollutant	Equations	Em. Factor	Emission	
	Source: AP42 Table 11.1-14, 03/04	lb/ton	lb/hr	ton/yr
Total PM	$EF = 0.000332 + 0.00105(-V)e^{((0.0251)(T+460)-20.43)}$	0.00059	0.23	0.16
Organic PM	$EF = 0.00105(-V)e^{((0.0251)(T+460)-20.43)}$	0.00025	0.102	0.069
TOC	$EF = 0.0504\ (-V)e^{((0.0251)(T+460)-20.43)}$	0.01219	4.875	3.290
CO	$EF = 0.00488(-V)e^{((0.0251)(T+460)-20.43)}$	0.00118	0.472	0.319

PAH HAPs	Compound/Organic PM	Current Emission	
	Source: AP42 Table 11.1-15, 03/04	lb/hr	ton/yr
Acenaphthene	0.47%	4.77E-04	3.22E-04
Acenaphthylene	0.014%	1.42E-05	9.60E-06
Anthracene	0.13%	1.32E-04	8.91E-05
Benzo(a)anthracene	0.056%	5.69E-05	3.84E-05
Benzo(e)pyrene	0.0095%	9.65E-06	6.51E-06
Chrysene	0.21%	2.13E-04	1.44E-04
Fluoranthene	0.15%	1.52E-04	1.03E-04
Fluorene	1.01%	1.03E-03	6.92E-04
2-Methylnaphthalene	5.27%	5.35E-03	3.61E-03
Naphthalene	1.82%	1.85E-03	1.25E-03
Perylene	0.030%	3.05E-05	2.06E-05
Phenanthrene	1.80%	1.83E-03	1.23E-03
Pyrene	0.44%	4.47E-04	3.02E-04
Total PAH HAPs	**11.40%**	**1.16E-02**	**7.81E-03**

Pollutant	Compound/TOC	Emissions	
	Source: AP42 Table 11.1-16, 03/04	lb/hr	ton/yr
VOC	**100%**	4.87	3.29
non VOC/non-HAPs			
Methane	0.26%	1.267E-02	8.555E-03
Acetone	0.055%	2.681E-03	1.810E-03
Ethylene	1.1%	5.362E-02	3.619E-02
Volatile Organic HAPs			
Benzene	0.032%	1.560E-03	1.053E-03
Bromomethane	0.0049%	2.389E-04	1.612E-04
2-Butanone	0.039%	1.901E-03	1.283E-03
Carbon Disulfide	0.016%	7.799E-04	5.265E-04
Chloroethane	0.0040%	1.950E-04	1.316E-04
Chloromethane	0.023%	1.121E-03	7.568E-04
Ethylbenzene	0.038%	1.852E-03	1.250E-03
Formaldehyde	0.69%	3.364E-02	2.270E-02
n-Hexane	0.10%	4.875E-03	3.290E-03
Isooctane	0.00031%	1.511E-05	1.020E-05
Methylene Chloride	0.00027%	1.316E-05	8.884E-06
Styrene	0.0054%	2.632E-04	1.777E-04
Toluene	0.062%	3.022E-03	2.040E-03
m-/p-Xylene	0.2%	9.749E-03	6.581E-03
o-Xylene	0.057%	2.779E-03	1.876E-03
Total HAPs	1.3%	**0.074**	**0.050**

TABLE S1b-7. EMISSION CALCULATIONS FROM TRUCK LOADOUT ACTIVITY (GP08)

Facility Name: Grace Pacific LLC - Hot Mix Asphalt Plant
Equipment Location: Makakilo Quarry, Oahu
Plant Description: 400 TPH Hot Mix Asphalt Plant

Pollutant	Equations	Em. Factor	Emission	
	Source: AP42 Table 11.1-14, 03/04	lb/ton	lb/hr	ton/yr
Total PM	$EF = 0.000181 + 0.00141(-V)e^{((0.0251)(T+460)-20.43)}$	0.00052	0.21	0.14
Organic PM	$EF = 0.00141(-V)e^{((0.0251)(T+460)-20.43)}$	0.00034	0.14	0.092
TOC	$EF = 0.0172\ (-V)e^{((0.0251)(T+460)-20.43)}$	0.00416	1.66	1.12
CO	$EF = 0.00558(-V)e^{((0.0251)(T+460)-20.43)}$	0.00135	0.540	0.364

	Compound/Organic PM	Emission	
	Source: AP42 Table 11.1-15, 03/04	lb/hr	ton/yr
PAH HAPs			
Acenaphthene	0.26%	3.55E-04	2.39E-04
Acenaphthylene	0.028%	3.82E-05	2.58E-05
Anthracene	0.070%	9.55E-05	6.44E-05
Benzo(a)anthracene	0.019%	2.59E-05	1.75E-05
Benzo(b)fluoranthene	0.0076%	1.04E-05	7.00E-06
Benzo(k)fluoranthene	0.0022%	3.00E-06	2.03E-06
Benzo(g,h,i)perylene	0.0019%	2.59E-06	1.75E-06
Benzo(a)pyrene	0.0023%	3.14E-06	2.12E-06
Benzo(e)pyrene	0.0078%	1.06E-05	7.18E-06
Chrysene	0.103%	1.40E-04	9.48E-05
Dibenz(a,h)anthracene	0.00037%	5.05E-07	3.41E-07
Fluoranthene	0.050%	6.82E-05	4.60E-05
Fluorene	0.77%	1.05E-03	7.09E-04
Indeno(1,2,3-cd)pyrene	0.00047%	6.41E-07	4.33E-07
2-Methylnaphthalene	2.38%	3.25E-03	2.19E-03
Naphthalene	1.25%	1.70E-03	1.15E-03
Perylene	0.022%	3.00E-05	2.03E-05
Phenanthrene	0.81%	1.10E-03	7.46E-04
Pyrene	0.15%	2.05E-04	1.38E-04
Total PAH HAPs	**5.93%**	**8.09E-03**	**5.46E-03**
Other Semi-volatile HAPs			
Phenol	1.18%	1.61E-03	1.09E-03
Total Other Semi-volatile HAPs	**1.18%**	**1.61E-03**	**1.09E-03**

TABLE S1b-7, CONT. EMISSION CALCULATIONS FROM TRUCK LOADOUT ACTIVITY Cont. (GP08)

	Compound/TOC	Emission	
	Source: AP42 Table 11.1-16, 03/04	lb/hr	ton/yr
VOC	**94%**	**1.564E+00**	**1.056E+00**
non-VOC/non-HAPs			
Methane	6.5%	1.081E-01	7.299E-02
Acetone	0.046%	7.7E-04	5.2E-04
Ethylene	0.71%	1.181E-02	7.973E-03
Volatile Organic HAPs			
Benzene	0.052%	8.7E-04	5.8E-04
Bromomethane	0.0096%	1.6E-04	1.1E-04
2-Butanone	0.049%	8.2E-04	5.5E-04
Carbon Disulfide	0.013%	2.2E-04	1.5E-04
Chloroethane	0.00021%	3.5E-06	2.4E-06
Chloromethane	0.015%	2.5E-04	1.7E-04
Cumene	0.11%	1.83E-03	1.24E-03
Ethylbenzene	0.28%	4.66E-03	3.14E-03
Formaldehyde	0.088%	1.5E-03	9.9E-04
n-Hexane	0.15%	2.50E-03	1.68E-03
Isooctane	0.0018%	3E-05	2E-05
Styrene	0.0073%	1E-04	8E-05
Tetrachloroethene	0.0077%	1E-04	9E-05
Toluene	0.210%	3.49E-03	2.36E-03
Trichlorofluoromethane	0.0013%	2E-05	1E-05
m-/p-Xylene	0.41%	6.82E-03	4.60E-03
o-Xylene	0.08%	1.3E-03	9.0E-04
Total HAPs	1.5%	**0.034**	**0.023**

TABLE S1b-8a. EMISSION CALCULATIONS FOR HOT OIL HEATER - DIESEL (GP09)

Facility Name: Grace Pacific LLC - Hot Mix Asphalt Plant
Equipment Location: Makakilo Quarry, Oahu
Plant Description: 400 TPH Hot Mix Asphalt Plant

Max. Operating hours: 8,760 hrs/year
Max. Heat Input 2.00 MMBtu/hr
Fuel Type Fuel Oil No. 2 0.015% Sulfur content
Heat Value 137,000 BTU/gal
Fuel consumption per hour: 14.60 gallons/hour
Max. Annual Fuel Consumption: 127,883 gallons/year

Pollutant	Emission Factor	Potential Emissions		Source
	(lb/1000 gal)	lbs/hr	ton/yr	
SO_2[1]	0.213	0.003	0.01	AP-42, Table 1.3-1 9/98 Edition.
NOx	20	0.29	1.28	
CO	5	0.07	0.3	
Filterable PM	2	0.03	0.1	
Condensable PM	1.3	0.019	0.083	
Total PM	3.3	0.048	0.211	= Filterable + Condensable
CO_2	22,300	326	1,426	AP 42, Table 1.3 12 9/98 Edition
TOC	0.252	0.00368	0.0161	AP-42, Table 1.3-3 9/98 Edition.
VOC	0.2	0.003	0.01	
Methane	0.052	0.00076	0.0033	
Nitrous Oxide (N_2O)	0.26	3.8E-03	1.7E-02	AP-42, Table 1.3-8 9/98 Edition.
Polycyclic Org. Matter (POM)*	0.0033	4.8E-05	2.1E-04	
Formaldehyde (HCOH)	0.048	7.0E-04	3.1E-03	
Speciated Organic Compound[2]				
Benzene*	2.14E-04	3.12E-06	1.37E-05	AP-42, Table 1.3-9 9/98 Edition.
Ethylbenzene*	6.36E-05	9.28E-07	4.07E-06	
Formaldehyde*	3.30E-02	4.8E-04	2.1E-03	
Naphthalene*	1.13E-03	1.65E-05	7.23E-05	
1,1,1-Trichloroethane	2.36E-04	3.45E-06	1.51E-05	
Toluene*	6.20E-03	9.1E-05	4.0E-04	
o-Xylene*	1.09E-04	1.59E-06	6.97E-06	
Acenaphthene (PAH*)	2.11E-05	3.08E-07	1.35E-06	
Acenaphthylene (PAH*)	2.53E-07	3.69E-09	1.62E-08	
Anthracene (PAH*)	1.22E-06	1.78E-08	7.80E-08	
Benz(a)anthracene (PAH*)	4.01E-06	5.85E-08	2.56E-07	
Benzo(b,k)fluoranthene (PAH*)	1.48E-06	2.16E-08	9.46E-08	
Benzo(g,h,i)perylene (PAH*)	2.26E-06	3.30E-08	1.45E-07	
Chrysene (PAH*)	2.38E-06	3.47E-08	1.52E-07	
Dibenzo(a,h)anthracene (PAH*)	1.67E-06	2.44E-08	1.07E-07	
Fluoranthene (PAH*)	4.84E-06	7.07E-08	3.09E-07	
Fluorene (PAH*)	4.47E-06	6.53E-08	2.86E-07	
Indo(1,2,3-cd)pyrene (PAH*)	2.14E-06	3.12E-08	1.37E-07	
Phenanthrene (PAH*)	1.05E-05	1.53E-07	6.71E-07	
Pyrene (PAH*)	4.25E-06	6.20E-08	2.72E-07	
Metal (HAPs)	**(lb/MMBtu)**			
Arsenic*	4.00E-06	8.00E-06	3.50E-05	AP-42, Table 1.3-10 9/98 Edition.
Beryllium*	3.00E-06	6.00E-06	2.63E-05	
Cadmium*	3.00E-06	6.00E-06	2.63E-05	
Chromium*	3.00E-06	6.00E-06	2.63E-05	
Lead*	9.00E-06	1.80E-05	7.88E-05	
Manganese*	6.00E-06	1.20E-05	5.26E-05	
Mercury*	3.00E-06	6.00E-06	2.63E-05	
Nickel*	3.00E-06	6.00E-06	2.63E-05	
Selenium*	1.50E-05	3.00E-05	1.31E-04	
Total HAPs		**7.41E-04**	**3.25E-03**	

(1) Emission factors are based on a maximum of 0.015% sulfur in fuel oil.

(2) Hazardous Air Pollutants (HAPs)*

Greenhouse Gas (GHG) Pollutant	GWP	GHG Emissions (metric TPY)	
		Mass-Based	CO2e-Based
CO_2	1	1,315.8	1,315.8
CH_4	25	0.05	1.31
N_2O	298	0.01	3.13
Total			1,320.2

TABLE S1-8b. EMISSION CALCULATIONS FOR HOT OIL HEATER - PROPANE - (GP09)

Facility Name:	**Grace Pacific LLC - Hot Mix Asphalt Plant**
Equipment Location:	**Makakilo Quarry, Oahu**
Plant Description:	**400 TPH Hot Mix Asphalt Plant**

Max. Operating hours:	8,760	hrs/year
Heat Input	2.00	MMBtu/hr
Fuel Type	LPG (propane)	0.18 g/100 scf Sulfur content[1]
Heat Value	91,500	BTU/gal
Fuel consumption per hour:	21.86	gallons/hour
Max. Annual Fuel Consumption:	191,475	gallons/year

Pollutant	Emission Factor (lb/1000 gal)	Potential Emissions lbs/hr	Potential Emissions ton/yr	Source
PM, Filterable	0.2	0.004	0.02	AP-42, Table 1.5-1 9/98 Edition (for propane; commercial boilers)
PM, Condensable	0.5	0.011	0.05	
PM, Total	0.7	0.02	0.07	
SO_2[2]	0.018	0.0004	0.0017	
NOx	13	0.28	1.24	
N_2O	0.9	0.02	0.09	
CO_2	12,500	273	1,197	
CO	7.5	0.2	0.7	
TOC	1.0	0.022	0.10	
Methane	0.2	0.004	0.02	
VOC	0.8	0.02	0.08	= TOC - Methane

Note:

(1) Based on example in AP-42, Table 1.5-1

(2) Emission factor = 0.10 S, where S = sulfur content expressed in g/100 ft^3 = 0.18

Greenhouse Gas (GHG) Pollutant	GWP	GHG Emissions (metric TPY) Mass-Based	GHG Emissions (metric TPY) CO_2e-Based
CO_2	1	1,101.5	1,101.5
CH_4	25	0.05	1.31
N_2O	298	0.01	3.13
Total			1,105.9

Pollutant	Diesel (lb/hr)	Propane (lb/hr)	Max ton/yr
PM, Filterable	**0.029**	0.004	0.128
PM, Condensable	**0.019**	0.011	0.083
PM, Total	**0.048**	0.015	0.211
SO_2	**0.003**	0.000	0.014
NOx	**0.292**	0.284	1.279
CO	0.073	**0.164**	0.718
VOC	0.003	**0.017**	0.077

TABLE S1b-9. EMISSION CALCULATIONS FROM 1100 KW DEG (GP10)

MODEL NPV-1100GF

Facility Name: Grace Pacific LLC - Hot Mix Asphalt Plant
Equipment Location: Makakilo Quarry, Oahu
Plant Description: 400 TPH Hot Mix Asphalt Plant

Parameters	Value	Unit	Source
Output	1,100	kWe	Manufacturer's Specifications (at 100% prime load)
	1,170	kWm	Manufacturer's Specifications (Max)
	1,569	hp	Calculated
Diesel #2 heat value	137,000	Btu/gal	AP42, Volume 1, 5th ed, App. A
Diesel #2 density	7.05	lb/gal	AP42, Volume 1, 5th ed, App. A
Fuel consumption rate	196.0	g/kW-hr	Manufacturer's Specifications (at 100% prime load)
	67.4	gallons/hour	Calculated
	9.2	MMBtu/hr	Calculated
Operating Hours	8,760	hours/year	Worst-Case
Annual Diesel Consumption	590,606	gallons/year	Calculated
	80,913	MMBtu/year	Calculated

Contaminants[1]	Emission Factor		Annual Emission		Source
	Value	Unit	lb/hr	TPY	
NOx	0.745	g/hp-hr	2.6	11.3	Manufacturer's Specifications
CO	3.28	g/hp-hr	11.3	49.69	
VOC	0.208	g/hp-hr	0.7	3.15	
PM (filterable)	0.029	g/hp-hr	0.1	0.44	
$PM_{10}/PM_{2.5}$	0.058	g/hp-hr	0.2	0.88	2x Filterable PM
SO_2[2]	1.52E-03	lb/MMBtu	0.0140	0.06	AP-42, Table 3.4-1 (10/96)
CO_2	165	lb/MMBtu	1,524	6,675	
CH_4	0.0081	lb/MMBtu	0.0748	0.33	
Benzene*	7.76E-04	lb/MMBtu	7.17E-03	3.14E-02	AP-42, Table 3.4-3 10/96 Edition.
Toluene*	2.81E-04	lb/MMBtu	2.60E-03	1.14E-02	
Xylene*	1.93E-04	lb/MMBtu	1.78E-03	7.81E-03	
Propylene	2.79E-03	lb/MMBtu	2.58E-02	1.13E-01	
Formaldehyde*	7.89E-05	lb/MMBtu	7.29E-04	3.19E-03	
Acetaldehyde*	2.52E-05	lb/MMBtu	2.33E-04	1.02E-03	
Acrolein*	7.88E-06	lb/MMBtu	7.28E-05	3.19E-04	
PAHs					
Naphthalene*	1.30E-04	lb/MMBtu	1.20E-03	5.26E-03	AP-42, Table 3.4-4 10/96 Edition.
Acenaphthylene	9.23E-06	lb/MMBtu	8.53E-05	3.73E-04	
Acenaphthene	4.68E-06	lb/MMBtu	4.32E-05	1.89E-04	
Fluorene	1.28E-05	lb/MMBtu	1.18E-04	5.18E-04	
Phenanthrene	4.08E-05	lb/MMBtu	3.77E-04	1.65E-03	
Anthracene	1.23E-06	lb/MMBtu	1.14E-05	4.98E-05	
Fluoranthene	4.03E-06	lb/MMBtu	3.72E-05	1.63E-04	
Pyrene	3.71E-06	lb/MMBtu	3.43E-05	1.50E-04	
Benz(a)anthracene	6.22E-07	lb/MMBtu	5.75E-06	2.52E-05	
Chrysene	1.53E-06	lb/MMBtu	1.41E-05	6.19E-05	
Benzo(b)fluoranthene	1.11E-06	lb/MMBtu	1.03E-05	4.49E-05	
Benzo(k)fluoranthene	2.18E-07	lb/MMBtu	2.01E-06	8.82E-06	
Benzo(a)pyrene	2.57E-07	lb/MMBtu	2.37E-06	1.04E-05	
Indeno(1,2,3-cd)pyrene	4.14E-07	lb/MMBtu	3.82E-06	1.67E-05	
Dibenz(a,h)anthracene	3.46E-07	lb/MMBtu	3.20E-06	1.40E-05	
Benzo(g,h,I)perylene	5.56E-07	lb/MMBtu	5.14E-06	2.25E-05	
Total PAH*	2.12E-04	lb/MMBtu	1.95E-03	8.56E-03	
Total HAPs	1.57E-03	lb/MMBtu	1.45E-02	6.37E-02	

Note:

(1) Hazardous Air Pollutants (HAPs)*

(2) Based on Emission factor = 1.01S1 where S1 = %Sulfur in fuel = 0.0015%

Greenhouse Gas (GHG) Pollutant	GWP	GHG Emissions (metric TPY)	
		Mass-Based	CO2e-Based
CO_2	1	6,076.6	6,076.6
CH_4	25	0.24	6.07
N_2O	298	0.05	14.47
Total			6,097.1

TABLE S1b-10. EMISSION CALCULATIONS FROM 100 KW DEG (Insignificant Activity)
Engine Model: Perkins 1204J-E44TTA

Facility Name: Grace Pacific LLC - Hot Mix Asphalt Plant
Equipment Location: Makakilo Quarry, Oahu
Plant Description: 400 TPH Hot Mix Asphalt Plant

Parameters	Value	Unit	Source
Output	100	kWe	Manufacturer's Specifications (at 100% prime load)
	110	kWm	Manufacturer's Specifications (Max)
	148	hp	Calculated
Diesel #2 heat value	137,000	Btu/gal	AP42, Volume 1, 5th ed, App. A
Diesel #2 density	7.05	lb/gal	AP42, Volume 1, 5th ed, App. A
Fuel consumption rate	6.3	gallons/hour	Based on Similar Unit
	0.87	MMBtu/hr	Calculated
Operating Hours	8,760	hours/year	Worst-Case
Annual Diesel Consumption	55,540	gallons/year	Calculated
	7,609	MMBtu/year	Calculated

Contaminants[3]	Emission Factor		Annual Emission		Source
	Value	Unit	lb/hr	TPY	
NOx	0.450	g/hp-hr	0.15	0.6	EPA Tier 4 NTE Limit
CO	3.25	g/hp-hr	1.06	4.63	
VOC	0.175	g/hp-hr	0.06	0.25	
PM (filterable)	0.023	g/hp-hr	0.007	0.03	
$PM_{10}/PM_{2.5}$	0.045	g/hp-hr	0.015	0.06	2x Filterable PM
SO_2[2]	1.52E-03	lb/MMBtu	0.0013	0.01	AP-42, Table 3.4-1 (10/96)
CO_2	165	lb/MMBtu	143	628	
CH_4	0.0081	lb/MMBtu	0.0070	0.03	
Benzene*	7.76E-04	lb/MMBtu	6.74E-04	2.95E-03	AP-42, Table 3.4-3 10/96 Edition.
Toluene*	2.81E-04	lb/MMBtu	2.44E-04	1.07E-03	
Xylene*	1.93E-04	lb/MMBtu	1.68E-04	7.34E-04	
Propylene	2.79E-03	lb/MMBtu	2.42E-03	1.06E-02	
Formaldehyde*	7.89E-05	lb/MMBtu	6.85E-05	3.00E-04	
Acetaldehyde*	2.52E-05	lb/MMBtu	2.19E-05	9.59E-05	
Acrolein*	7.88E-06	lb/MMBtu	6.84E-06	3.00E-05	
PAHs					
Naphthalene*	1.30E-04	lb/MMBtu	1.13E-04	4.95E-04	AP-42, Table 3.4-4 10/96 Edition.
Acenaphthylene	9.23E-06	lb/MMBtu	8.02E-06	3.51E-05	
Acenaphthene	4.68E-06	lb/MMBtu	4.07E-06	1.78E-05	
Fluorene	1.28E-05	lb/MMBtu	1.11E-05	4.87E-05	
Phenanthrene	4.08E-05	lb/MMBtu	3.54E-05	1.55E-04	
Anthracene	1.23E-06	lb/MMBtu	1.07E-06	4.68E-06	
Fluoranthene	4.03E-06	lb/MMBtu	3.50E-06	1.53E-05	
Pyrene	3.71E-06	lb/MMBtu	3.22E-06	1.41E-05	
Benz(a)anthracene	6.22E-07	lb/MMBtu	5.40E-07	2.37E-06	
Chrysene	1.53E-06	lb/MMBtu	1.33E-06	5.82E-06	
Benzo(b)fluoranthene	1.11E-06	lb/MMBtu	9.64E-07	4.22E-06	
Benzo(k)fluoranthene	2.18E-07	lb/MMBtu	1.89E-07	8.29E-07	
Benzo(a)pyrene	2.57E-07	lb/MMBtu	2.23E-07	9.78E-07	
Indeno(1,2,3-cd)pyrene	4.14E-07	lb/MMBtu	3.60E-07	1.58E-06	
Dibenz(a,h)anthracene	3.46E-07	lb/MMBtu	3.01E-07	1.32E-06	
Benzo(g,h,I)perylene	5.56E-07	lb/MMBtu	4.83E-07	2.12E-06	
Total PAH*	2.12E-04	lb/MMBtu	1.84E-04	8.05E-04	
Total HAPs	1.57E-03	lb/MMBtu	1.37E-03	5.99E-03	

Note:
(1) Hazardous Air Pollutants (HAPs)*
(2) Based on Emission factor = 1.01S1 where S1 = %Sulfur in fuel = 0.0015%

Greenhouse Gas (GHG) Pollutant	GWP	GHG Emissions (metric TPY)	
		Mass-Based	CO2e-Based
CO_2	1	571.4	571.4
CH_4	25	0.02	0.57
N_2O	298	0.00	1.36
Total			573.4

Company Name: Grace Pacific LLC
Location: Makakilo Quarry, Oahu
(Make as many copies of this page as necessary)

File No.: _____

EMISSIONS UNITS TABLE

Review of applications and issuance of permits will be expedited by supplying all necessary information on this table

AIR POLLUTANT DATA: EMISSION POINTS				AIR POLLUTANT	AIR POLLUTANT EMISSION RATE		UTM Zone 4, Horizontal Datum [a] NAD-83		STACK SOURCE PARAMETERS						
Stack No.	Unit No.	Equipment Name/Description & SICC number	Equipment Date	Regulated/ Hazardous Air Pollutant Name & CAS#	lb/HR	Tons/ YR	Coordinates (mtrs)		Stack Height (mtrs)	Direction (u/d/h) [b]	Inside Diameter (mtrs)	Velocity (m/s)	Flow Rate (m^3/s)	Temp (°K)	Capped (Y/N)
1	GP01	Drum Mixer through Baghouse	N/A	PM_{10}	9.3	6.3	East	595567.0	9.14	u	1.28	28.63	36.81	388.71	N
				$PM_{2.5}$	9.3	6.3									
				CO	52.0	35.1									
				VOC	12.8	8.6									
				SO_2	4.4	3.0	North	2361819.9							
				NOx	22.0	14.9									
				Total HAPs	3.54	2.39									
N/A	GP02	Wind Erosion of Open Storage Piles	N/A	PM	1.02	4.46	East	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
							North	N/A							
N/A	GP03	Truck Travelling on Unpaved Roads	N/A	PM	3.0	4.1	East	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
							North	N/A							
N/A	GP04	Conveyor Transfer Points and Screening	N/A	PM	0.22	0.15	East	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
							North	N/A							
N/A	GP05	Truck Unloading	N/A	PM	0.00376	0.00254	East	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
							North	N/A							
N/A	GP06	Transfer to Cold Feed Bins	N/A	PM	3.24	2.19	East	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
							North	N/A							
N/A	GP07	Silo Filling	N/A	PM	0.23	0.16	East	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
				TOC	4.87	3.29									
				CO	0.47	0.32	North	N/A							
				HAPs	0.07	0.05									
N/A	GP08	Truck Loadout	N/A	PM	0.21	0.14	East	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
				TOC	1.66	1.17									
				CO	0.54	0.36	North	N/A							
				HAPs	0.036	0.024									
2	GP09	Hot Oil Heater	N/A	PM_{10}	0.048	0.21	East	595590.9	2.87	u	0.305	8.835	0.64	588.71	Y
				$PM_{2.5}$	0.048	0.21									
				CO	0.16	0.72									
				NOx	0.29	1.28									
				VOC	0.017	0.077	North	2361577.5							
				SO_2	0.003	0.01									
				Total HAPs	0.00074	0.0032									
3 and 4	GP10	1,100 kW Diesel Engine Generator	N/A	PM_{10}	0.20	0.88	East	595559.8 595564.3	2.896	u	0.21	54.84	1.90	695.93	N
				$PM_{2.5}$	0.20	0.88									
				CO	11.35	49.69									
				NOx	2.58	11.29									
				VOC	0.72	3.15	North	2361615.8 2361604.9							
				SO_2	0.014	0.061									
				Total HAPs	0.015	0.064									

[a] Specify UTM Horizontal Datum as Old Hawaiian, NAD-83, or NAD-27

[b] Specify the direction of the stack exhaust as u = upward, d = downward, or h = horizontal

(7/06)

Form S-1

File No.: _____

S-4: Application for a Temporary Covered Source Permit

In providing the required information, reference the corresponding letters and numbers listed below.

Provide a minimum of **two (2)** sets (1 original and 1 copy) of all application materials to the Hawaii Department of Health. Also, mail **one (1)** set directly to EPA at the following address:

Chief (Attention: AIR-3)
Permits Office, Air Division
U.S. Environmental Protection Agency
Region 9
75 Hawthorne Street
San Francisco, CA 94105

I. In accordance with Hawaii Administrative Rules (HAR) §11-60.1-83, the following information is required:

A. Equipment Specifications:

1. Maximum design capacity. 400 tons per hour of hox mix asphalt
2. Fuel type. Drum mixer, Diesel Engine Generator, and Hot-oil heater - Ultra-low sulfur diesel (ULSD); Drum mixer and Hot-oil heater – Propane as a secondary/backup fuel
3. Fuel use. Drum mixer 110 MMBtu/hr, Diesel Engine Generator 67.4 gal/hr, Hot-oil heater 2.0 MMBtu/hr
4. Production capacity. 400 tons per hour of hox mix asphalt
5. Production rates. 540,000 tons per year of hox mix asphalt
6. Raw materials. Aggregate and Asphalt
7. Provide any manufacturer's literature. See Attachment S-4a

B. Provide detailed descriptions of all processes and products defined by Standard Industrial Classification Code (SICC). Also, provide any reasonably anticipated alternative operating scenarios, associated processes, and products, by SICC.

1. Identify and describe in detail all air pollution control equipment and compliance monitoring devices or activities planned by the owner or operator, and to the extent of available information, an estimate of emissions before and after controls. Provide all calculations and assumptions.

   The facility is a relocatable asphalt plant that produces hot mix asphalt (HMA) from virgin aggregate, recycled asphalt pavement (RAP) and liquid asphalt cement. HMA plants are identified by SIC Code 2951.

   Drum Mixer - Particle emissions from the drum mixer are controlled by a baghouse. NO_X, CO, SO_2, and VOC emissions are controlled by the use of ULSD and good combustion practices.

   Diesel Engine Generator - NO_X, CO, SO_2, VOC, and PM emissions from the are controlled by

the use of ULSD and the purchase of an NSPS Tier 4 final certified engine.

Hot Oil Heater - NO_X, CO, SO_2, VOC, and PM emissions from the diesel engine generator are controlled by the use of ULSD and good combustion practices.

2. List all ***insignificant*** activities in accordance with HAR §11-60.1-82.

   See Attachment S-2b for a list of insignificant activities meeting the requirements of §11-60.1-82(f).

C. Maximum Operating Schedule (to the extent needed to determine or regulate emissions):

1. Total hours per day, per week, and/or per month. No limits on operating hours are proposed.
2. Total hours per year. No limits on operating hours are proposed.
3. If operation is seasonal or irregular, describe. Operation is not seasonal or irregular

D. Cite and describe all ***applicable requirements*** as defined in HAR §11-60.1-81, including the following:

1. Description of or reference to any applicable test methods for determining compliance with each applicable requirement. See Attachment C-2a
2. Explanation of all proposed exemptions from any applicable requirements. See Attachment C-2a

E. Identify and describe current operational limitations or work practices, or for covered sources that have not yet begun operation, such limitations or practices which the owner or operator of the source plans to implement that affect emissions of any regulated or hazardous air pollutant. Provide all calculations and assumptions.

See item B.1.

F. Provide a detailed schedule for construction or modification of the proposed source, including any major milestones, if applicable.

A schedule can be provided following the issuance of the CSP.

G. For ***new*** covered sources and ***significant*** modifications which increase the emissions of any air pollutant or result in the emission of any air pollutant not previously emitted, an assessment of the ambient air quality impact of the covered source or significant modification, with the inclusion of any available background air quality data. The assessment shall include all supporting data, calculations and assumptions, and a comparison with the NAAQS and SAAQS.

The attached Air Quality Impact Analysis contains a detailed assessment of the ambient air quality impact. This analysis demonstrates compliance with all applicable State and Federal ambient air quality standards.

H. For ***new*** covered sources and ***significant*** modifications subject to the requirements of subchapter 7 of HAR Chapter 11-60.1, all analyses, assessments, monitoring, and other application requirements of subchapter 7.

The facility is not subject to Subchapter 7.

I. Provide detailed information to define permit terms and conditions for any proposed ***emissions trading*** within the facility in accordance with HAR §11-60.1-96.

No emissions trading is proposed.

J. Provide the following for Compliance purposes:

1. A Compliance Plan, Form C-1.

2. A Compliance Certification, Form C-2.

II. Submit an application fee according to the Application Fee Schedule in the Instructions for Applying for an Air Pollution Control Permit.

III. Provide other information as follows:

A. As required by any applicable requirement or as requested and deemed necessary by the Director of Health (hereafter, Director) to make a decision on the application.

B. As may be necessary to implement and enforce other applicable requirements of the Clean Air Act or of HAR Chapter 11-60.1 or to determine the applicability of such requirements.

IV. The Director reserves the right to request the following information:

A. An assessment of the ambient air quality impact of the source or modification. The assessment shall include all supporting data, calculations and assumptions, and a comparison with the National Ambient Air Quality Standards and State Ambient Air Quality Standards.

B. A risk assessment of the air quality related impacts caused by the covered source or significant modification to the surrounding environment.

C. Results of source emissions testing, ambient air quality monitoring, or both.

D. Information on other available control technologies.

V. An application shall be determined to be complete only when all of the following have been complied with:

A. All information required or requested in numbers **I, III, and IV** has been submitted.

B. All documents requiring certification have been certified pursuant to HAR §11-60.1-4.

C. All applicable fees have been submitted.

D. The Director has certified that the application is complete.

VI. The Director shall not continue to act upon or consider an incomplete application.

A. The applicant shall be notified in writing whether the application is complete:

1. For the requirements of subchapter 7, thirty days after receipt of the application.

2. For the requirements of HAR subchapter 5, sixty days after receipt of the application. For purposes of this paragraph, the date of receipt of an application for a new covered source or significant modification subject to the requirements of subchapter 7 shall be the date the application is determined to be complete for the requirements of subchapter 7.

3. Unless the Director requests additional information or notifies the applicant of incompleteness within sixty days after receipt of an application pursuant to **VI.A.2** above, the application shall be deemed complete for the requirements of subchapter 5.

B. During the processing of an application that has been determined or deemed complete, if additional information is necessary to evaluate or take final action on the application, the Director may request such information in writing and set a reasonable deadline for a response.

VII. After receipt of a complete application, the Director, in writing, shall approve, conditionally approve, or deny an application within eighteen months, except as provided in HAR §11-60.1-88 and (A) and (B) below.

A. Upon program approval, within nine months for an application containing an early reduction demonstration pursuant to section 112(i)(5) of the Clean Air Act.

B. Within twelve months for a new covered source or significant modification subject to the requirements of subchapter 7.

VIII. A Covered Source Permit application for a new covered source or a significant modification shall be approved only if the Director determines that the construction or operation of the new covered source or significant modification will be in compliance with all applicable requirements.

IX. The Director shall provide for public notice, including the method by which a public hearing can be requested, and an opportunity for public comment on the draft Covered Source Permit in accordance with HAR §11-60.1-99. Each notification shall also identify the intent to operate at various locations, and the estimated number of location changes for the proposed term of the Temporary Covered Source Permit.

X. The Director shall provide a statement that sets forth the legal and factual bases for the draft permit conditions (including references to the applicable statutory or regulatory provisions) to EPA and any other person requesting it.

XI. Each application and proposed Covered Source Permit shall be subject to EPA oversight in accordance with HAR §11-60.1-95.

XII. Upon issuance of a Temporary Covered Source Permit, the following information is required:

A. Provide all succeeding location changes to the Director for approval at least thirty days, or such lesser time as designated and approved by the Director, prior to the change in location. The owner or operator shall submit sufficient information to enable the Director to assess the air quality impact the temporary covered source may have at the new location.

B. Temporary Covered Source Permit identification number and expiration date.

C. Location map of the new temporary location, identifying the surrounding commercial, industrial, and residential developments.

D. Projected dates of operation at the new location.

E. Certification that no modification will be made to the equipment, and operational methods will remain similar as permitted under the Temporary Covered Source Permit at the new location.

XIII. The Director shall not continue to act upon or consider a location change request, unless the following have been submitted:

A. All information required in number **XII**.

B. Any additional information as requested by the Director.

C. Any applicable fees.

XIV. Prior to any relocation, the Director shall approve, conditionally approve, or deny in writing each location change. If the Director denies a location change, the applicant may appeal the decision pursuant to Hawaii Revised Statutes, Chapter 91.

XV. With the exception of the initial location, if a source remains in any one location for longer than twelve consecutive months, the Director may request an ambient air quality impact assessment of the source.

XVI. At each of the authorized locations, the owner or operator shall operate in accordance with the Temporary Covered Source Permit and all applicable requirements.

Attachment S-4a - Manufacturer's Literature

VOLVO PENTA

Diesel Generator NPV-1100GF 60HZ

1100Kw Volvo Penta Diesel Generator Quotation And Specification

Part 1: Powered by genuine and new Volvo Penta engine and Stamford Alternator

Item no.	Description	Unit Price	Quantity	Amount
1	2Units 550Kw Volvo Penta&Stamford diesel generator; 1000L base fuel tank for each Generator; Schneider 800A Synchronizing Breaker; Deepsea DSE8610MKII Synchronizing Controller; Common Busbar Output; ISO 40ft High Cube Container	[redacted]	[redacted]	[redacted]
Remark	◆ Volvo Penta engine(Original) ◆ Stamford alternator(Original) ◆ Deepsea control panel(Original) ◆ Payment terms: 50% T/T down payment, the balance 50% T/T before shipping ◆ Produce period: 6 Months upon receive the down payment ◆ Warranty: 2 years or 2000 hours			
Total				FOB Shanghai: [redacted]

Part 2: System Ratings

Model	Voltage	HZ	PF (COS Φ)	Standby Power	Prime Power
NPV-1100GF	480V(3Phase)	60	0.8	1100KW	1040KW

Prime power

This rating is for the supply of continuous electrical power (at variable load). There is no limit on the annual hours of operation and 10% overload power can be supplied for 1 hour in 12.

Standby power

This rating is for the supply of continuous electrical power (at variable load) in the event of a utility power failure. No overload is permitted.

VOLVO PENTA

Diesel Generator NPV-1100GF 60HZ

SAMPLE PHOTOS

OPEN TYPE(SINGLE UNIT)

40FT CONTAINERIZED SOUNDPROOF TYPE

VOLVO PENTA

Diesel Generator NPV-1100GF 60HZ

Standard Feature

// Global Warranty Support
// 2 Years Standard Warranty
// Volvo Penta Diesel Engine
- 16.12L displacement
- US EPA Tier 4 Final
- 4-Cycle

// Complete Range of Accessories
- Industrial Muffler
- Industrial Bellows
- Schneider Air Circuit Breaker

// Stamford Generator
- Brushless Excited(Self-Excited)

// Digital Control Panel(s)
- UL recognized,NFPA110
- Complete System Metering
- LCD display

// Cooling System
- Integral Set-Mounted
- Engine Driving fan

APPLICATION DATA

// Engine		*// Fuel System*	
Manufacturer	Volvo Penta	Fuel Tank Capacity	1000 L
Model	TWD1672GE	Fuel Consumption(100%)	196g/kw.h
Emission	U.S EPA Tier 4F	Fuel Consumption(75%)	198g/kw.h
Type	4 Cycle	Fuel Consumption(50%)	200g/kw.h
Arrangement	6 Inline		
Air Intake	Turbocharged		
Displacement	16.12L	*// Electrical System*	
Bore: mm	144	Electrical Starter	24V
Stroke:mm	165	Charging Alternator	24V
Compression Ratio	16.8	Battery Charger	24V
Rated RPM	1800		
Max Power	585Kwm	*// Generator*	
Governor	Electrical	Manufacturer	Stamford
Speed Regulation	±0.25%	Model	S5L1D-D4
Air Cleaner	Dry type	Power	520KW
		Frequency	50HZ
// Liquid Capacity		Excited Type	Self Excited
Oil System Capacity	50 L	Power Factor	0.8
Oil Class	CF Class	Voltage Adjust range	≫ 5%
Engine Coolant Capacity	160 L	Voltage Regulation	≤±1%
Coolant Type	Normal	Insulation Grade	H
Max Water Temperature	104℃	Protection Grade	IP23
Thermostat	82℃-95℃	Phase	3 Phase

VOLVO PENTA

Diesel Generator NPV-1100GF 60HZ

// Control Panel(Deepsea DSE8610MKII)

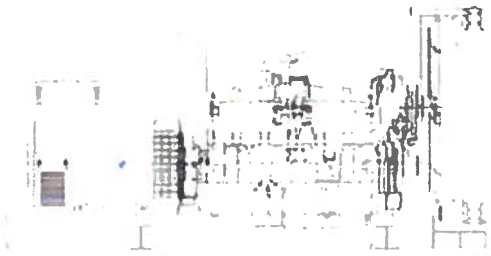
DSE8610 MKII is the latest self-starting load distribution controller, which is suitable for load distribution systems with complex requirements. It supports parallel machines and load distribution of up to 32 units and can be used for EFI and non-EFI engines.

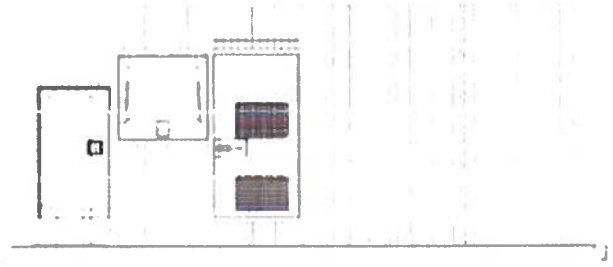
- Built-in powerful PLC functions
- MSC redundancy function, the MSC of the DSE86xx controller is connected through a closed loop
- 4 flexibly set analog inputs, which can be set as voltage, current or resistance sensors
-Two RS485 ports can connect EFI engine and BMS system
-Three CAN ports: DSENet, ECU, and MSC
-Supports parallel and load distribution of up to 32 units
-Custom Digital Input/Output (12/8)
-Uncharged busbar detection (that is, switch on first and then start), multiple units quickly start with load
-Multiple remote communication ports (RS232,RS485, Ethernet), all ports can be used at the same time
-active and reactive power distribution
- 250 event records for easy viewing of historical failures
-Hierarchical load rejection and virtual load output
-power monitoring (kWh, kVAr, kvAh, kVArh), reverse power protection, overload protection
-Data record (connected to a U disk) to record the current and historical status information.
-Free DSE Software
-EFI engine supporting national 4 emission standards

VOLVO PENTA

Diesel Generator NPV-1100GF 60HZ

WEIGHT & DIMENSIONS





// Open Type	// Container Soundproof Type
Size: N.A	Size: 12192(L)*2438(W)*2896(H)mm
Weight: N.A	Weight: 15000KG

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
2024 MODEL YEAR
CERTIFICATE OF CONFORMITY
WITH THE CLEAN AIR ACT

OFFICE OF TRANSPORTATION AND AIR QUALITY
ANN ARBOR, MICHIGAN 48105

Certificate Issued To: AB Volvo Penta
(U.S. Manufacturer or Importer)

Certificate Number: RVPXL16.1CDC-007

Effective Date: 10/13/2023

Expiration Date: 12/31/2024

Byron J. Bunker, Division Director
Compliance Division

Issue Date: 10/13/2023

Revision Date: N/A

Model Year: 2024
Manufacturer Type: Original Engine Manufacturer
Engine Family: RVPXL16.1CDC

Mobile/Stationary Indicator: Both
Emissions Power Category: kW>560
Fuel Type: Diesel
After Treatment Devices: Ammonia Slip Catalyst, Selective Catalytic Reduction
Non-after Treatment Devices: Electronic Control, Smoke Puff Limiter

Pursuant to Section 111 and Section 213 of the Clean Air Act (42 U.S.C. sections 7411 and 7547) and 40 CFR Parts 60 and 1039, and subject to the terms and conditions prescribed in those provisions, this certificate of conformity is hereby issued with respect to the test engines which have been found to conform to applicable requirements and which represent the following engines, by engine family, more fully described in the documentation required by 40 CFR Parts 60 and 1039 and produced in the stated model year.

This certificate of conformity covers only those new compression-ignition engines which conform in all material respects to the design specifications that applied to those engines described in the documentation required by 40 CFR Parts 60 and 1039 and which are produced during the model year stated on this certificate of the said manufacturer, as defined in 40 CFR Parts 60 and 1039.

It is a term of this certificate that the manufacturer shall consent to all inspections described in 40 CFR 1068 and authorized in a warrant or court order. Failure to comply with the requirements of such a warrant or court order may lead to revocation or suspension of this certificate for reasons specified in 40 CFR Parts 60 and 1039. It is also a term of this certificate that this certificate may be revoked or suspended or rendered void *ab initio* for other reasons specified in 40 CFR Parts 60 and 1039.

This certificate does not cover engines sold, offered for sale, or introduced, or delivered for introduction, into commerce in the U.S. prior to the effective date of the certificate.

EXHAUST EMISSION DATA SHEET

MQ POWER GENERATOR SET

Model: DCA600SSV4F3B/PB

The engine used in this generator set is certified to comply with United States EPA Tier 4 and CARB Mobile Off-Highway emission regulations.

ENGINE DATA

Manufacturer:	VOLVO	**Bore:**	5.67 in. (144 mm)
Model:	TWD162GE	**Stroke:**	6.5 in. (165 mm)
Type:	4-Cycle, 6-Cylinder, Diesel	**Displacement:**	984 cid (16.1 liters)
Aspiration:	Turbocharger, ECM, EGR, DOC, SCR Electronic Direct Injection, Charge Air Cooler	**Compression Ratio:**	16.8:1

PERFORMANCE DATA

SAE Gross HP @ 1800 RPM (60 Hz) Rated	836
Load Fuel Consumption (gal/Hr) Rated	31.7
Load Exhaust Gas Flow (cfm) Rated Load	4025
Exhaust Gas Temperature (°F)	793

United States EPA - Mobile Off-Highway Tier 4 Limits - >751 BHP

Criteria Pollutant	Emission Requirements		NTE Engine Emissions	
NOx (Oxides of Nitrogen as NO2)	0.499	gr/bhp-hr	0.745	gr/bhp-hr
HC (Total Unburned Hydrocarbons)	N/A	gr/bhp-hr	N/A	gr/bhp-hr
NOx + HC (Combined)	N/A	gr/bhp-hr	N/A	gr/bhp-hr
CO (Carbon Monoxide)	2.60	gr/bhp-hr	3.28	gr/bhp-hr
PM (Particulate Matter)	0.022	gr/bhp-hr	0.029	gr/bhp-hr
NMHC (Non-Methane Hydrocarbons)	0.141	gr/bhp-hr	0.208	gr/bhp-hr
NMHC + NOx	N/A	gr/bhp-hr	N/A	gr/bhp-hr

EPA Engine Family:	RVPXL16.1CDC
EPA Certificate of Conformance:	RVPXL16.1CDC-007
ARB Executive Order:	U-R-014-0215
Effective Date:	Model Year 20241

Note: Engine operation with excessive air intake or exhaust restriction beyond factory published maximum limits, or with improper service maintenance, may result in higher emission levels.

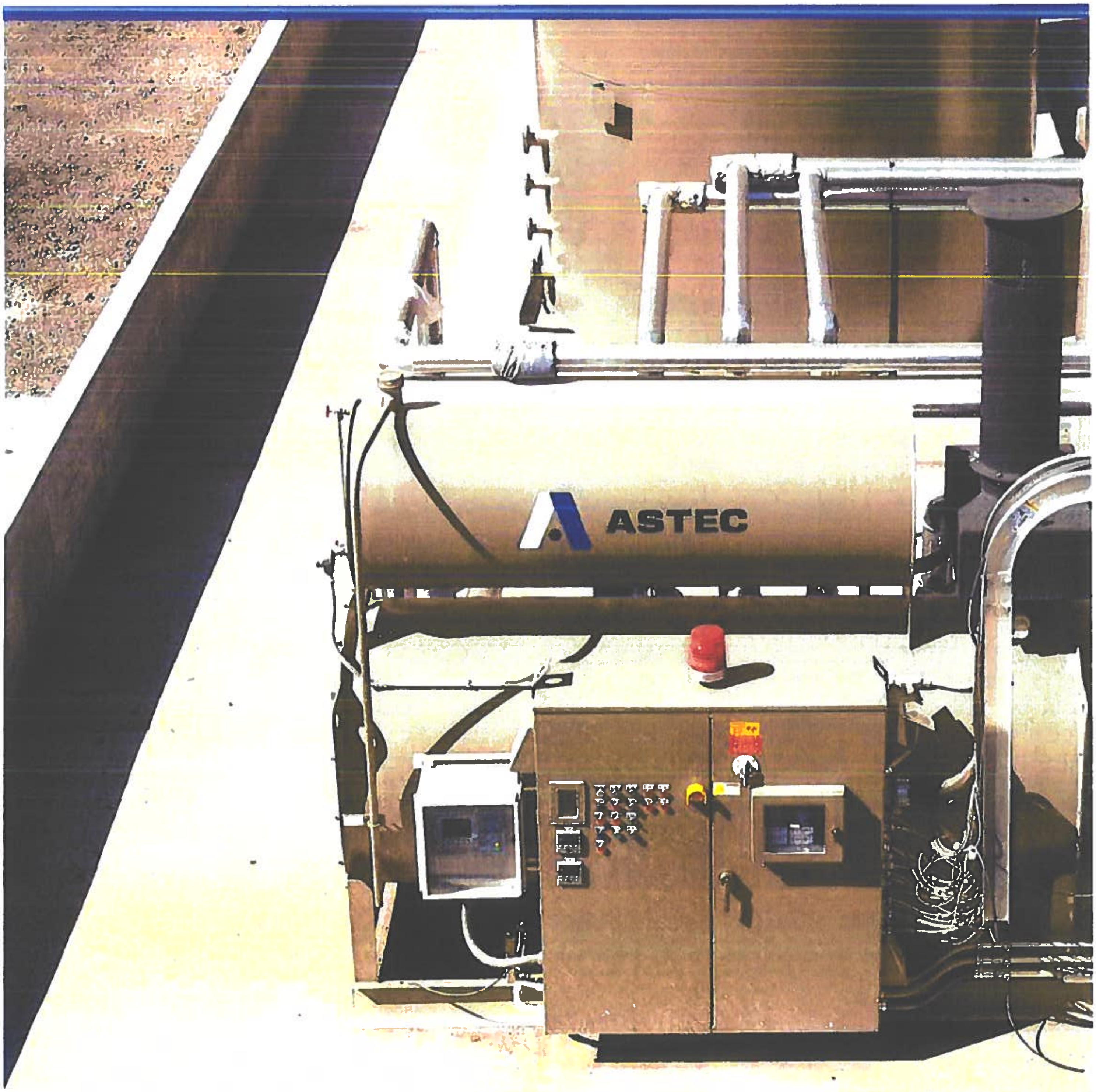
HEATEC® HC & HCS SERIES

HOT OIL HEATERS

ASTEC

HOT OIL HEATERS

ASTEC Energy's HCT & HCS hot oil (thermal fluid) heaters combine efficiency, reliability and performance in a simple, easy to operate package. The heaters are built around a helical coil which is the most efficient and reliable design for fired industrial heaters available today. Safeguards and controls are in place to assist safe operation. They are extremely versatile and can be used for a number of different applications. They come in a range of standard outputs and are fully customizable.



HEATEC HC & HCS

High Efficiency Reduces Costs

A hallmark of our helical coil heater is high thermal efficiency. Thermal efficiencies of our standard heaters range up to 85 percent LHV, depending upon fluid outlet temperature and fuel.

Thermal efficiency is the total amount of heat produced by the burner versus the portion actually transferred to thermal fluid flowing through the coil. Thus, in our heaters, up to 85 percent of the total heat is transferred to the thermal fluid. Increasing efficiency reduces fuel usage.

Achieving Super-Efficiency

Adding a STACKPACK™ heat exchanger (economizer) boosts thermal efficiency another 5 percent. It makes our current heater super-efficient. That extra percentage reduces monthly fuel usage by 261 gallons of No. 2 fuel oil or 345 therms of natural gas. The Stackpack heat exchanger usually pays for itself in a year or less.

Burner Controls

Fireye™ burner management controls known as BurnerLogix™ provide proper and safe operation of the burner. They include a display, burner control, programmer, annunciator and flame scanner.

The burner control uses a microprocessor for its management functions. The processor provides the proper burner sequencing, ignition and flame monitoring protection.

The controls provide important messages about the operating status of the heater. If there is an alarm condition, a message will appear on the display. The message identifies the cause of the alarm, including which safety device in the limit circuit may have caused the shutdown.

NOTE: Fireye and BurnerLogix are trademarks of Fireye, Inc.

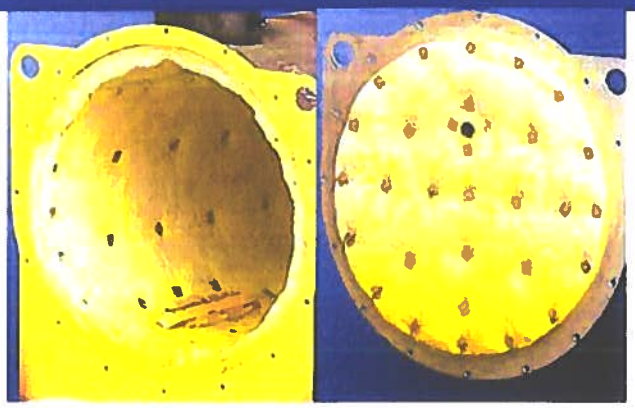
Controls

Heater controls automatically maintain the operating temperature set by the operator. Accuracy is within a half percent of set temperature. The temperature of thermal fluid at the heater's outlet can be maintained up to 450°F (depending on variables).

Numerous safety features ensure heater operation is always within prescribed limits. Heaters shut down automatically if an abnormal operating condition occurs.
Switches and sensors in a limit circuit ensure normal operation. They monitor burner flame, thermal fluid temperature, exhaust gas temperature, flow of thermal fluid, and combustion air pressure.

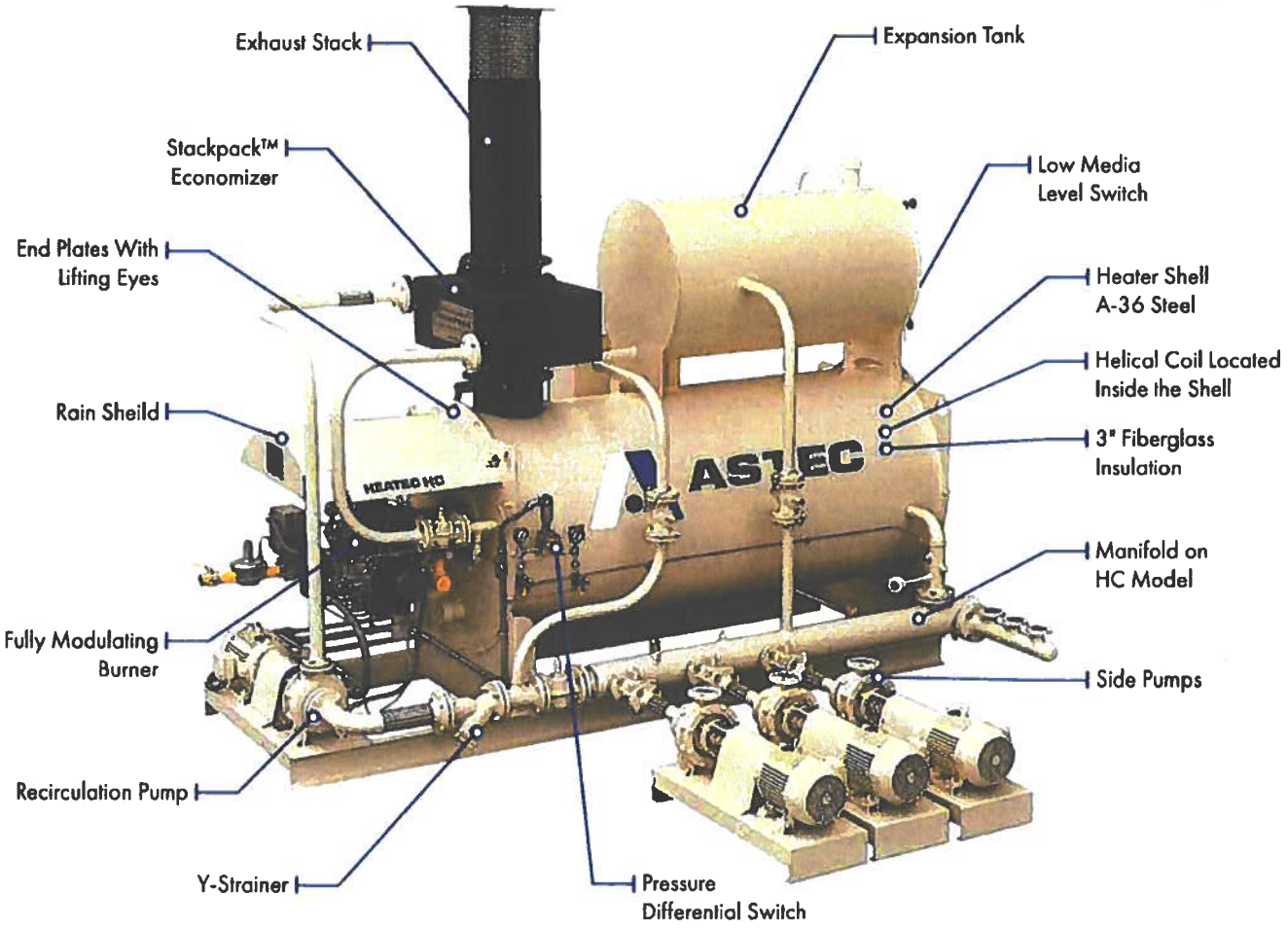
Control Panel

Main controls are in a UL approved NEMA-4 panel, which protects against windblown dust and rain, splashing water and hose-directed water. Wiring workmanship is meticulous and meets strict standards. All wires and terminals are labeled for easy identification of circuits. A laminated circuit diagram is furnished.



Insulation

The shell of our heater is fully insulated with 3 inches of ceramic fiberglass insulation. The end plates are also insulated. All insulation is treated to retard erosion.



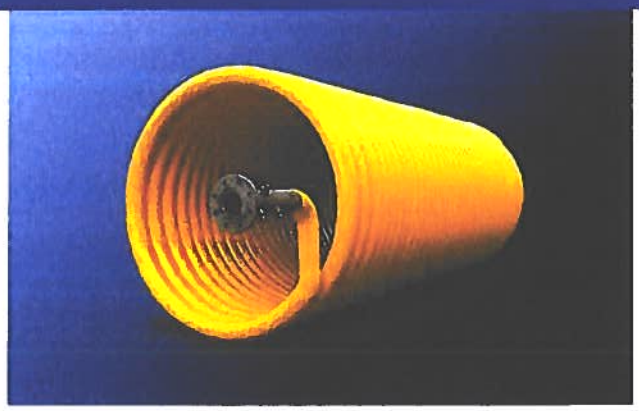
Burner Modulation

The heater has a fully modulating burner with appropriate turndown ratios. Modulation allows its firing rate to closely match the heat demand. This conserves fuel, reduces temperature overshooting and eliminates constant on-off recycling.

Helical Coils

Helical coils in our heaters set us apart from others that produce helical coil heaters for the HMA industry. We are the only heater manufacturer that builds all coils to ASME code. Certification is optional.

Coils in HCS heaters have a three year warranty. Coils in HC heaters have a five year warranty.



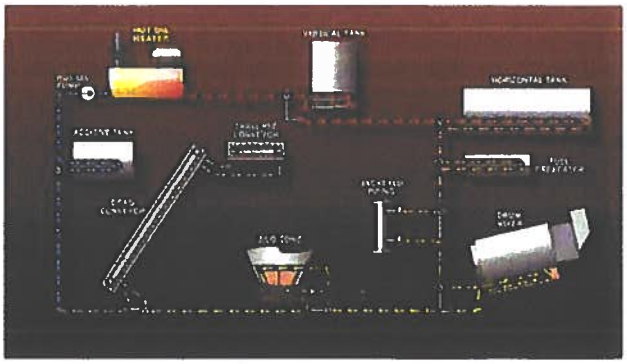
HEATEC HC & HCS

HCS Single-Circuit Heater Model

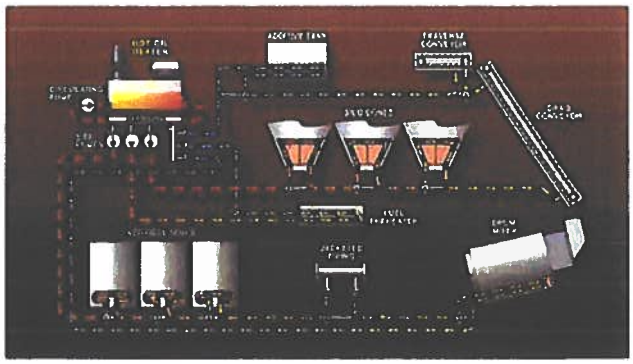
There are two basic configurations to choose from. The HCS model can only be used in a single circuit. The single circulation pump circulates hot oil (thermal fluid) through the heater and to each component in series to each other. This works well when there are not a lot of components in the circuit. The more components you have in series to each other creates more resistance to flow. This dramatically slows down how fast the hot oil flows through the components and returns to the heater, which increases the time needed to heat the components. Lack of flow can also cause the heater to shut down to protect the helical coil from being damaged. HCS heater models can be upgraded to HC heater models if you add more components to your system.

HC Multi-Circuit Heater Model

The only difference between the two heater models is the HC model has a manifold and side pumps, the HCS model does not. The manifold and side pumps enable the heater to operate with multiple hot oil (thermal fluid) circuits, up to four circuits. This model is ideal when there are numerous components to heat in the system. The circulation pump only circulates hot oil through the heater coil. This assures optimal flow through the coil of the heater regardless of flow through the other components in the system. This keeps the coil from overheating and being damaged, extending the life of the coil. The manifold has outlets, returns, and side pumps. Each outlet acts as an independent source for each circuit with its own side pump. This assures flow and fast heating to each component in the circuit because it has fewer components.



Hot oil flow through a single circuit.



Hot oil flow through multiple circuits.

Hot Oil Heater Specifications

	MODEL	MAX OUTPUT	FUEL USAGE		RECIRCULATION PUMP		EXPANSION TANK	APPROXIMATE SIZE			NET WEIGHT
		BTU/HOUR	NO. 2 OIL GALLONS	NATURAL GAS CUBIC FT/HR	HP	GPM	GALLONS	LENGTH	WIDTH	HEIGHT	POUNDS
SINGLE CIRCUIT	HCS-70	700,000	6	910	10	100	100	10'-5"	5'-7"	8'-10"	3,700
	HCS-100	1,200,000	11	1,560	10	100	175	12'-1"	5'-9"	9'-0"	5,000
	HCS-175	2,000,000	18	2,600	15	150	280	14'-5"	6'-3"	9'-7"	6,500
	HCS-250	3,000,000	27	3,900	15	150	280	15'-9"	7'-4"	10'-6"	9,300
	HCS-350	4,000,000	36	5,200	15	200	400	18'-1"	7'-4"	11'-5"	10,700
MULTI-CIRCUIT	HC-120	1,200,000	11	1,560	10	100	175	12'-1"	5'-11"	9'-0"	5,100
	HC-200	2,000,000	18	2,600	15	150	280	14'-5"	6'-5"	9'-7"	6,600
	HC-300	3,000,000	27	3,900	15	150	280	15'-9"	7'-6"	10'-6"	9,500
	HC-400	4,000,000	36	5,200	15	200	400	18'-1"	7'-6"	11'-5"	10,900

The amount of fuel used is for a thermal efficiency of 85% and one hour of operation at maximum output. A properly sized heater normally runs for intermittent periods at lower outputs. No. 2 fuel usage is based on 132,000 Btu per gallon, its LHV (low heating value). Natural gas usage is based on 905 Btu per cubic foot, its LHV. Heights include the exhaust stack without a Stackpack heat exchanger. The Stackpack exchanger for the HCS-350 and HC-400 weighs 800 pounds and adds 2'-7" to their height. For all other models it weighs 460 pounds and adds 1'-9" to their height.

Options

Options include: Stackpack heat exchanger, seven-day time clock, sock filter, automated monitor (dialer), burners for various fuels, and steel valves. A variety of electrical power options are available.

Factory testing and startup

All HC and HCS heaters are factory-tested. We provide startup services with fees based on time at site plus travel time and expenses.

Warranty and factory support

Our heaters have a one-year limited warranty. Additionally, the coils have an extended warranty as noted earlier. Round-the-clock support is available from our in-house parts and service departments.

PARTS AND SERVICE

We back our products with 24/7 support from our in-house parts and service teams. Our engineers and sales staff are available for project consultation, and our factory-trained service technicians can install and setup your new ASTEC equipment for you.

www.astecindustries.com

ASTEC BAGHOUSES

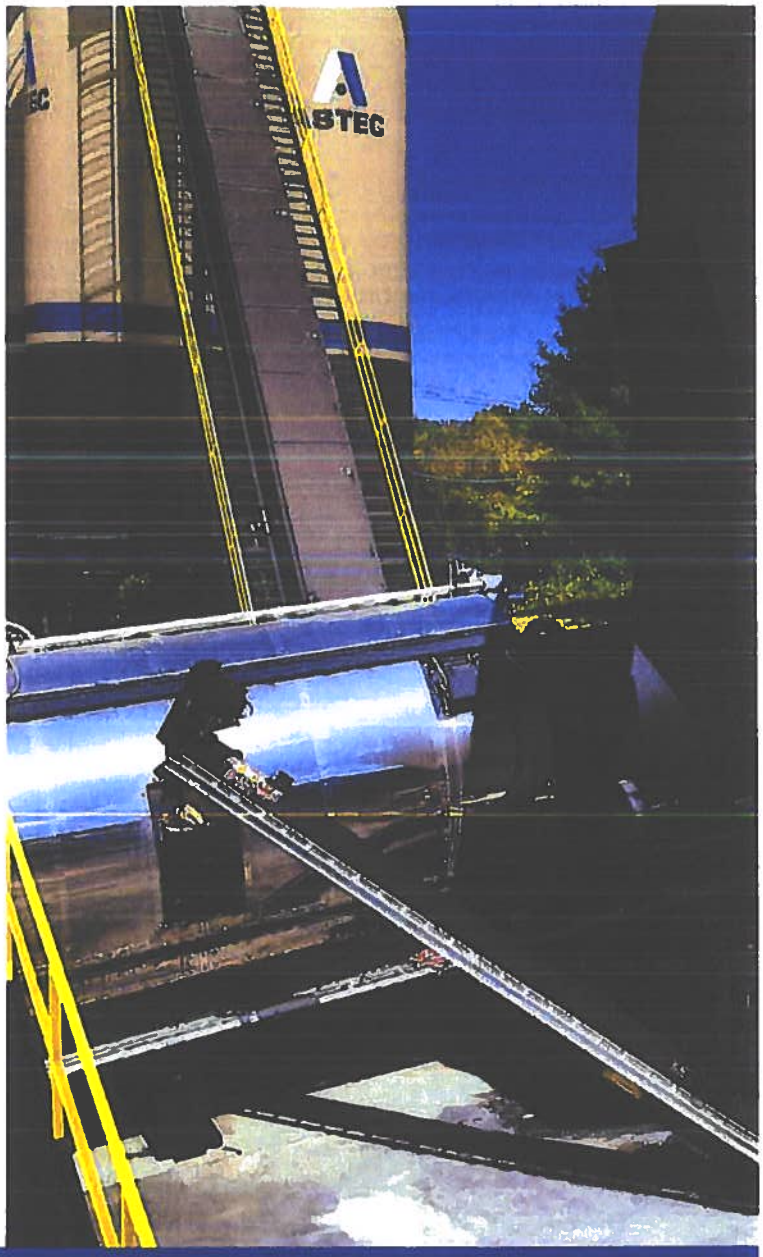
PULSE JET BAGHOUSE

ASTEC

PULSE JET BAGHOUSE For Asphalt Mixing Plants

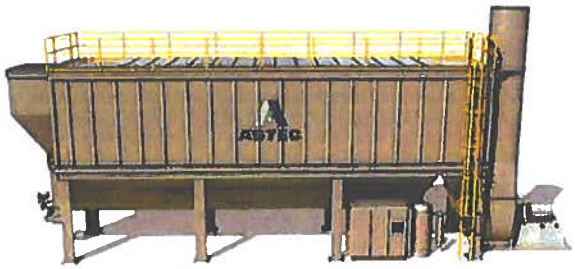
They remove particulates from the exhaust stream to efficiencies greater than 99.9%, and lower emissions to less than one quarter of EPA standards.

The baghouse exhaust fan provides the draft needed to evacuate gases from the drum, including steam, products of combustion, and air (leakage and unused combustion). The control system regulates airflow through the system by regulating fan speed when there is a VFD, or opening and closing the exhaust fan damper.



BAGHOUSE
Facility Style

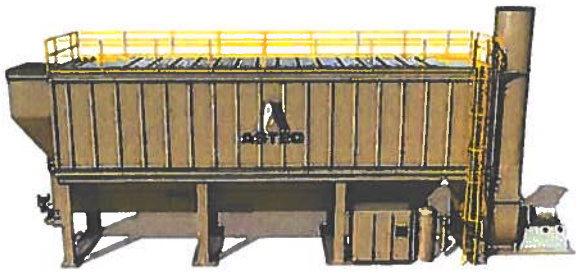
Whether you need the quick setup and mobility of a portable plant, the flexibility and operating capacity of a stationary, or something in-between — Astec baghouses can be configured for any of the three Astec plant styles.



STATIONARY

Stationary asphalt mixing plants provide a high degree of flexibility for customized layouts and special features. The stationary baghouse is supplied with steel legs to grade. The legs are anchored to your prepared concrete foundations.

Astec baghouses deliver superior performance and efficiency, while helping your plant meet the most stringent clean air standards.



RELOCATABLE

Modular construction and built-in steel foundations eliminate the need for concrete foundations, making setup of the relocatable baghouse fast and easy. Relocatable baghouses are delivered on steel plate foundations. At the site, the top weldment bolts to the hopper section.

PORTABLE

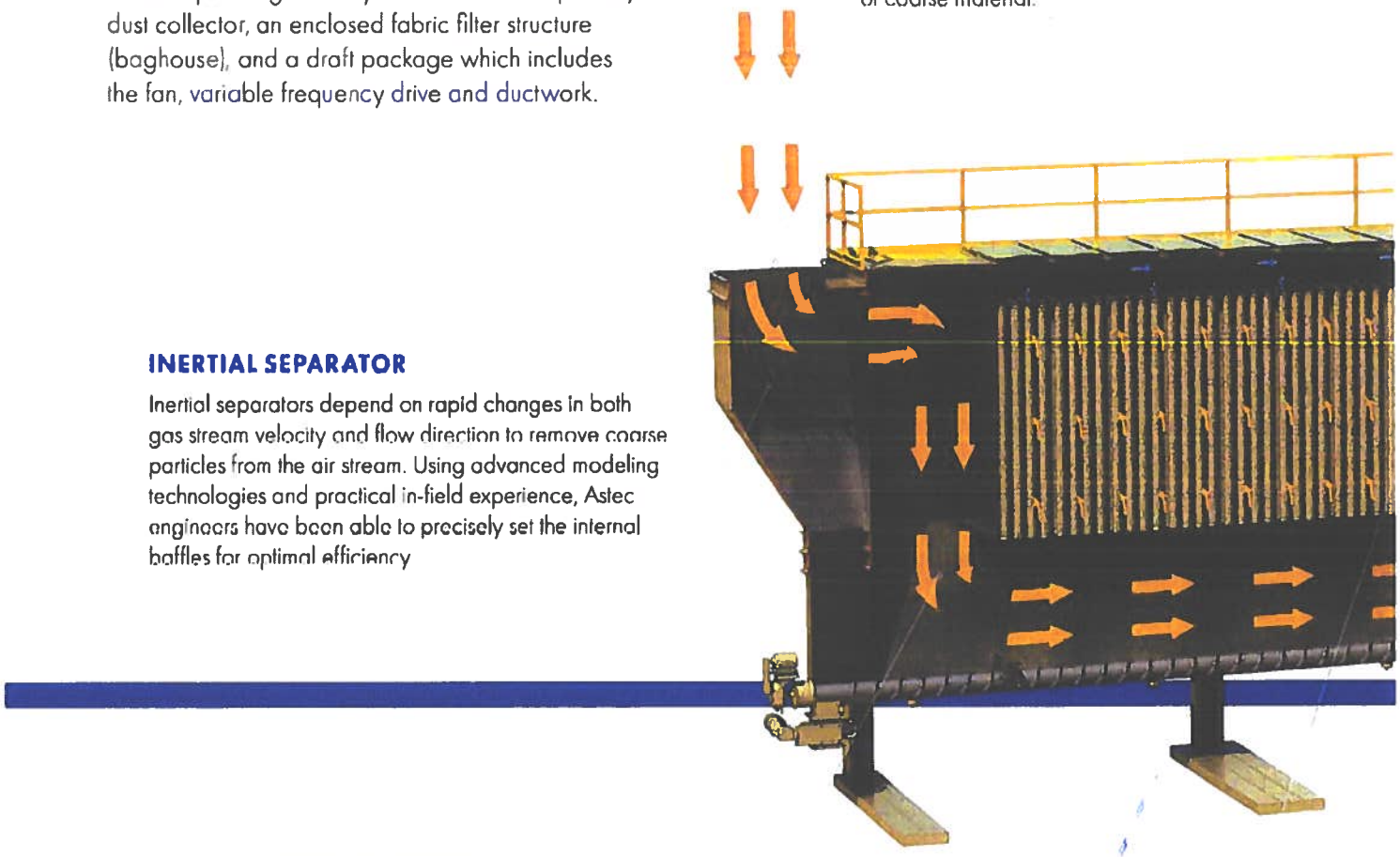
The Astec portable baghouse is designed as an integral component of the Six Pack® portable hot mix facility. Built-in running gear, high-rise air bag suspension and optional retractable plate foundations eliminate setup hassles. Portable baghouses are available in a range of capacities.

Complete Astec Pulse Jet Baghouse System

The complet baghouse system consists of a primary dust collector, an enclosed fabric filter structure (baghouse), and a draft package which includes the fan, variable frequency drive and ductwork.

DUST COLLECTOR

Gas stream exits the drum mixer or dryer through the duct and enters primary dust collector (inertial separator) for removal of coarse material.



INERTIAL SEPARATOR

Inertial separators depend on rapid changes in both gas stream velocity and flow direction to remove coarse particles from the air stream. Using advanced modeling technologies and practical in-field experience, Astec engineers have been able to precisely set the internal baffles for optimal efficiency

ENTRY CHAMBER

From the primary dust collector the gas stream moves into the baghouse entry chamber. The gas stream slows and disperses under the bags in the baghouse.

CLEAN AIR PLENUM

Negative pressure in the clean air plenum above pulls the dust-laden air through the filter bags. The fine dust collects on the outside of the bags.

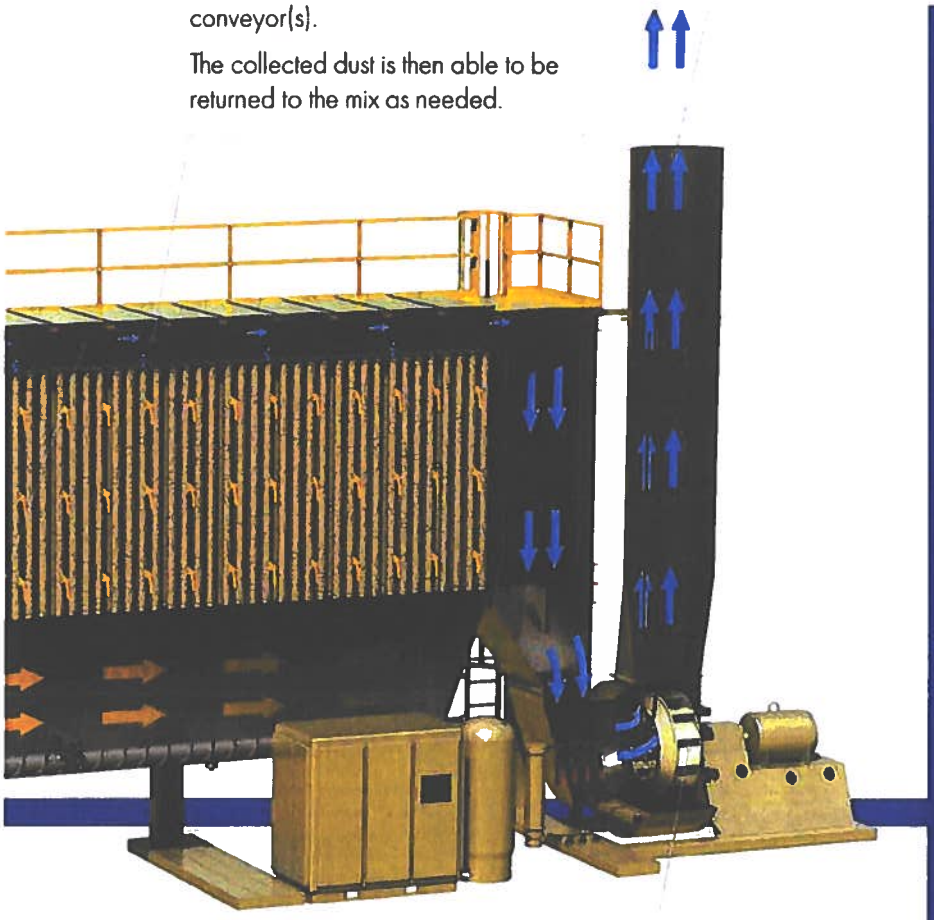
CLEANING BURSTS

Periodically, bursts of compressed air are injected into the tops of two rows of bags. Dust breaks free and falls into the hopper(s) to be removed by screw conveyor(s).

The collected dust is then able to be returned to the mix as needed.

EXHAUST STACK

The cleaned gas stream travels through the plenum, passes through the fan, and exits the baghouse through the exhaust stack.



FANS MAINTAIN STABLE AIRFLOW

The Astec exhaust fan is designed for a wide range of operating conditions and is capable of operating at high differential pressures. The fan's backward-curved blade runs quieter and uses less power than other fan designs. The drives can be configured to be driven either by belts and sheaves or direct coupling. Optional stack silencers are also available.

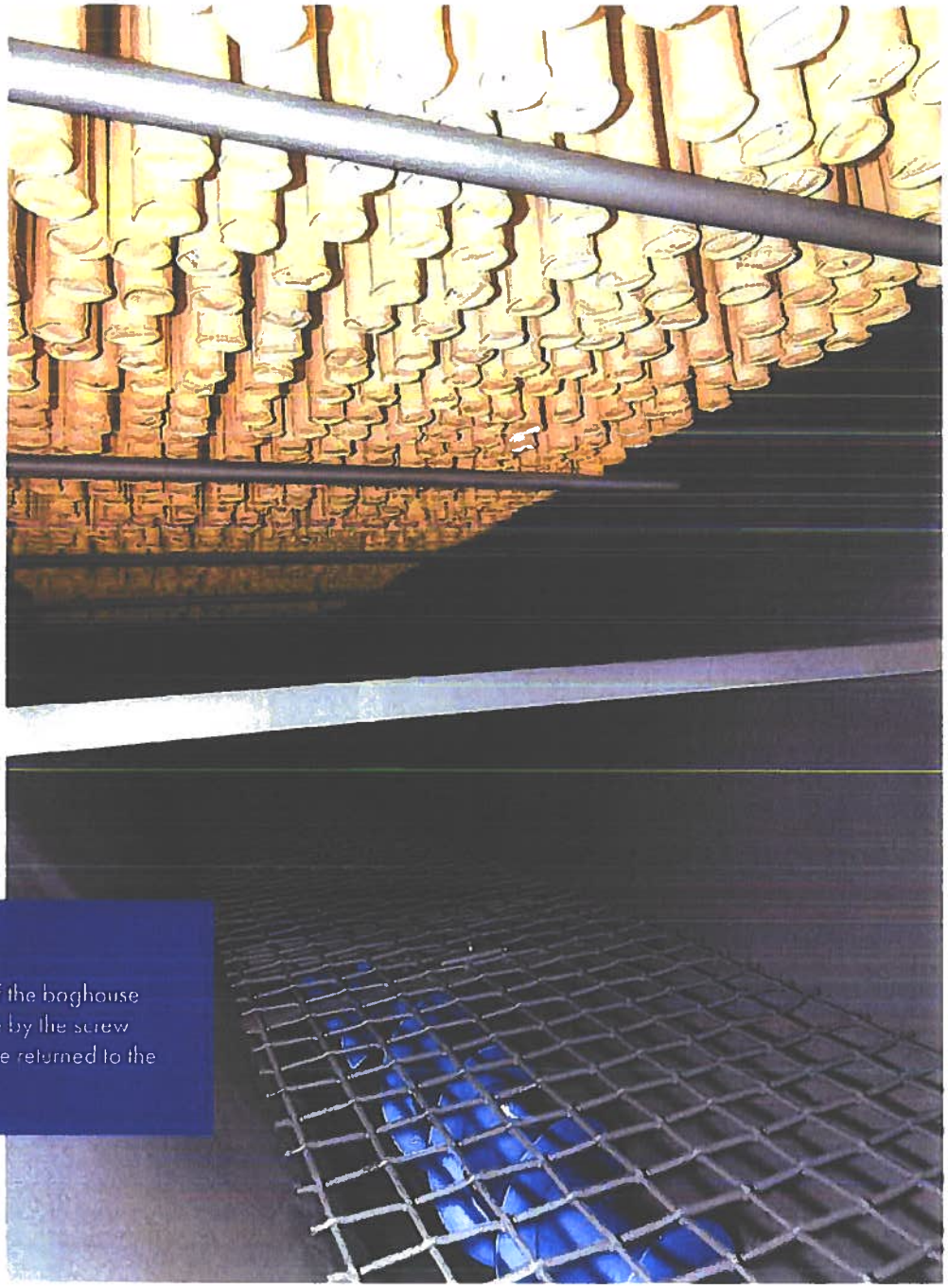
The Benefits of a Variable Frequency Drive

The Variable Frequency Drive (VFD) on the baghouse fan minimizes electrical power consumption and reduces the number of mechanical parts necessary for optimum plant performance. VFD works by only running the fan at the speed necessary to induce the ideal balance of flow through the plant equipment at a given tonnage rate. With a VFD, the fan duct no longer needs a mechanical damper – so the pressure losses from the damper are eliminated.

Expensive electricity consumption is minimized in two unique ways. First, electrical energy is saved since the fan is only run at a speed necessary for a given production rate. In contrast, a fan/damper arrangement runs full-speed at all times. For example, at 80% capacity a fan with a VFD only uses 50% of the electrical energy of a fan with a damper -- savings increase to 75% running at 50% capacity. Second, a VFD-equipped baghouse fan avoids expensive electrical demand charges. A fan/damper arrangement quickly brings the fan to full speed. This creates a very short high energy demand. With a VFD, the fan is able to start spinning very slowly using a small amount of energy.

BAGHOUSE

Coarse and fine dust are collected separately. The coarse dust is collected by a primary collector and then returned to the mix 100% of the time. The fine dust is collected by the baghouse and may all be returned to the mix, or it can be wasted, metered into the mix, or stored in a fines silo with the addition of a VFD airlock.



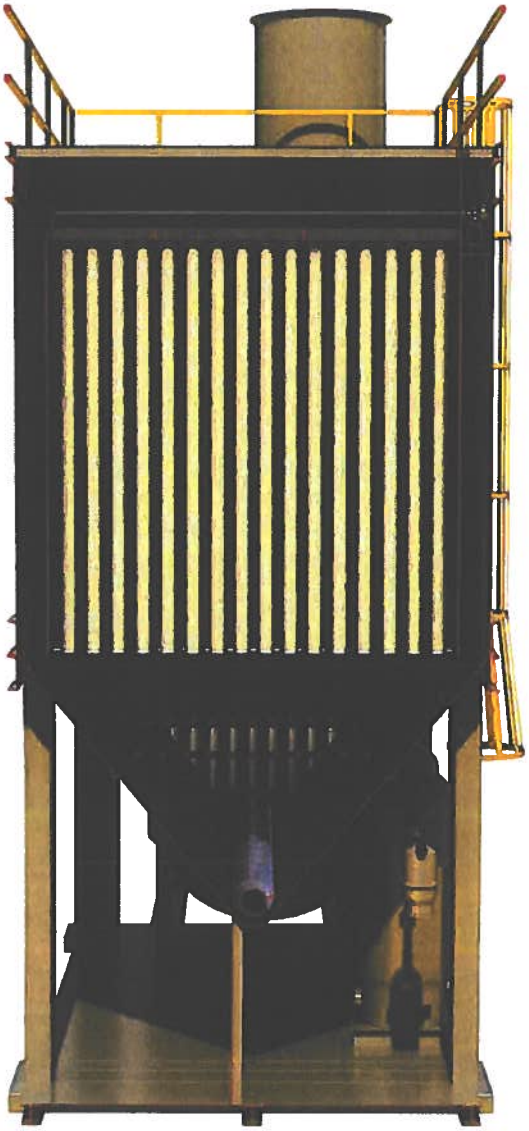
SCREW CONVEYOR

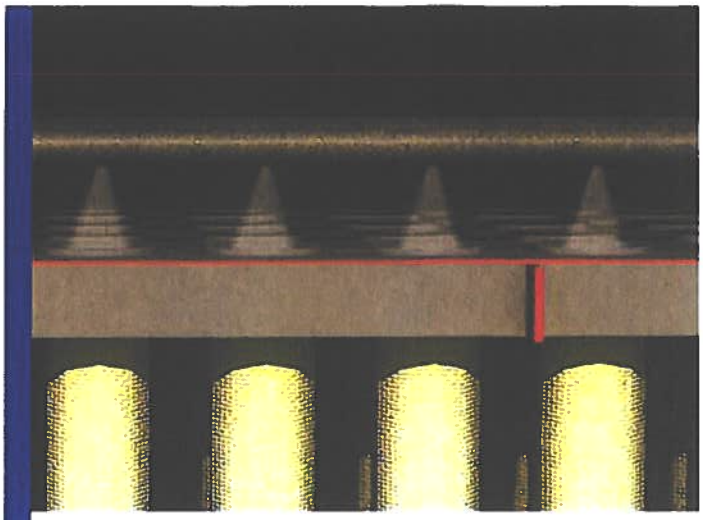
Fine particles collect in the bottom of the baghouse and are removed from the baghouse by the screw conveyor. These fine particles may be returned to the mix, stored or wasted.

PARTICLES

Astec primary collectors capture coarse dust as air flows into the baghouse. Generally, the dust gathered in the primary collector is in the 30, 50, 80 mesh range.

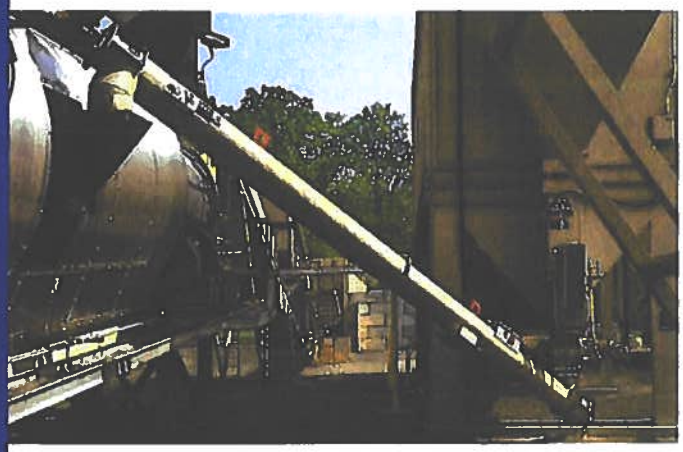
Since very few coarse particles enter the baghouse, it can collect small fines very efficiently. Coarse particles entering the baghouse would cause the dust cake to be very porous, making it harder to collect very fine particles. A dense dust cake of fine particles has a higher collection efficiency. Removal of coarse fines in the primary collector also reduces wear on the bags.





PULSE JET CLEANING

The Astec pulse jet baghouse works in a continuous cleaning process. The pulse jet bags never stop filtering because the bags do not need to be taken offline for cleaning. To clean the bags, air exits a venturi which concentrates a burst of air. The resulting air wave pops the bags away from the cage. This movement of the bag dislodges the dust cake, allowing it to fall into the hopper.



REMOVAL OF FINE PARTICLES

The gas stream exits the primary dust collector and moves into the baghouse entry chamber. The gas stream slows down and passes under the wall that protects the bags. Negative pressure in the clean air plenum pulls the gas stream up through the filter bags. Fine particles entrained in the gas stream collect on the outside of the bags. The cleaned gas stream travels through the plenum and exits the baghouse through the exhaust stack.

RETURN FINES TO THE MIX

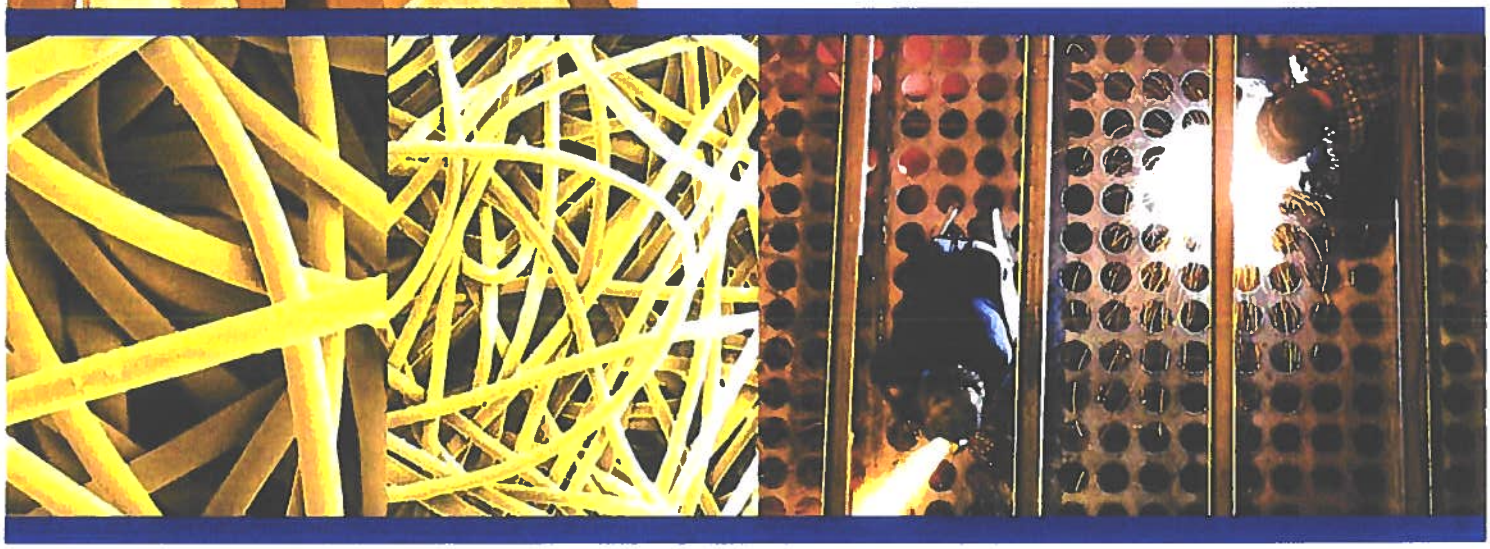
With an optional variable speed air lock, you can choose what percentage, if any, of fine baghouse dust you want to mix with the coarse dust to be returned to the mix. An optional blower or screw conveyor can be installed to divert baghouse dust to storage or disposal. Rotation sensors on all dust handling conveyors signal the operator in the event of a stoppage.

BAGHOUSE

Thanks to a proprietary material, bags used in Astec baghouses do a more reliable job. Astec felt is made of 2-denier virgin aramid fiber with high density needling. All Astec felts are also singed for superior dust cake release. The bag material is specially made for Astec, with a guaranteed minimum density per square inch of 14 ounces.* Manufacturers using bags of lesser quality may claim an average density of 14 ounces, but their bags can be thinner than that average in spots, which leads to less reliable filtering and faster bag wear. The density of Astec bags is never less than 14 ounces.

Astec offers micro-denier bags in addition to standard denier bags. Micro-denier bags are made of the same type aramid fibers except they are smaller in diameter than the 2-denier and can form an even tighter configuration to improve filtration of microscopic particulates for areas with high particulate emission restrictions.

***14 ounces is the standard minimum density for relocatable and stationary ASTEC baghouses. 16 ounces is the standard minimum density for a portable ASTEC baghouse.**



The micro-denier aramid felt fiber is available for compliance with tight particulate restrictions.

The tube sheet separates the dirty and clean air plenums. The dirty air must pass through the bags.

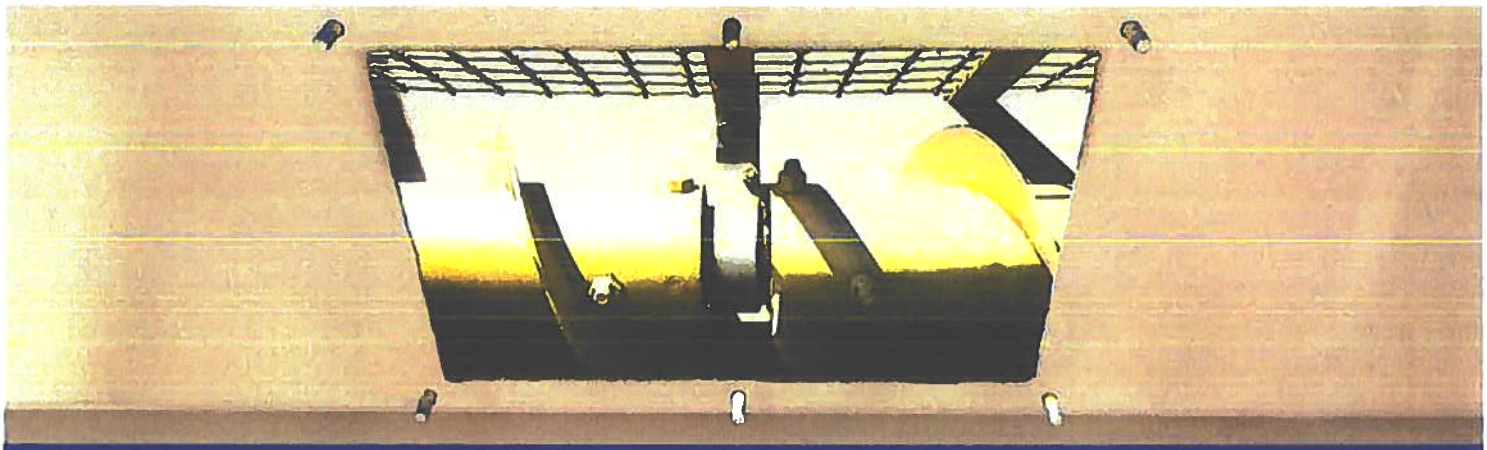

ASTEC
ASTEC

BAGHOUSE

Additional Features

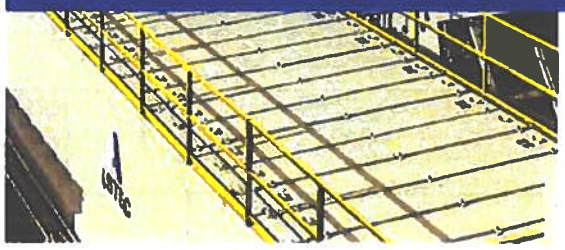
The extra features you get with Astec make a real difference because they reduce maintenance and operating concerns and improve efficiency.

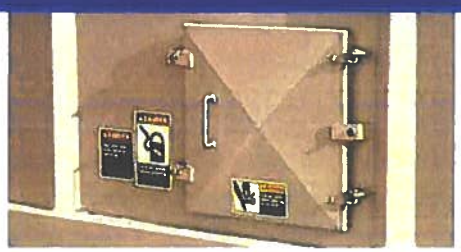
Duct transition wear surfaces and duct elbows are made of formable AR (abrasion resistant steel). Stiffeners strengthen baghouse walls and prevent flexing. Astec baghouses resist corrosion thanks to epoxy-coating on the inner surfaces of the baghouse and primary dust collector, and plenum access doors fabricated of stainless steel. Exhaust fan, motors and drives ship pre-assembled. All bags, blow pipes, manifolds, valves and solenoids are installed at the factory, saving you considerable time at setup.

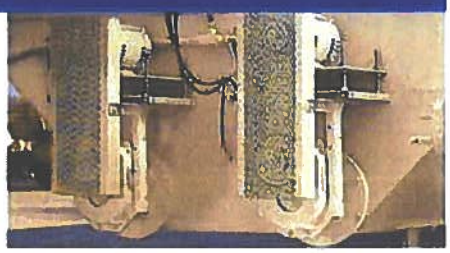


ACCESS DOORS

Key parts of the baghouse are simple to access and service.







LESS MAINTENANCE TIME AND COST

Caged ladders lead to the top of the baghouse with handrails installed all around. Stainless steel plenum access doors let you easily reach bags. Snap-in bags are simple to change.

The dust screw on an Astec baghouse features a large screw shaft design with a reduced number of hanger bearings.

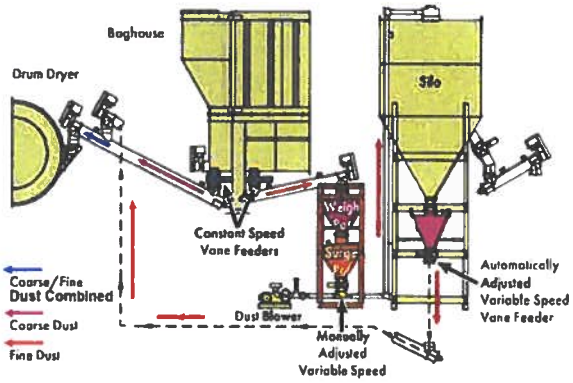
The hanger bearings on the hopper screws are lubricated, long-wearing and operate quietly. Screws and bearings are conveniently reached through ground-level access doors at each bearing.

Baghouses have clean-out plates at the bottom of the hopper. In the unlikely event of a blockage at the screw conveyor, these plates can be removed and dust can be evacuated manually.

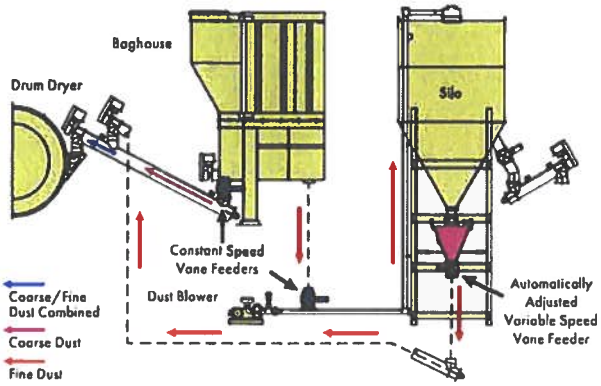
Choose Your Material Handling System

Select systems depending on your operating environment. The choices for controlling material flow out of the baghouse include a range of rotary air locks with dust blowers or dust transfer screws.

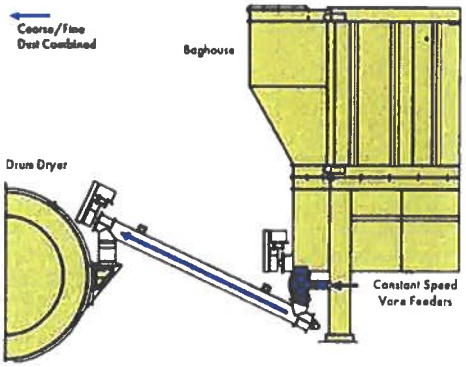
Total Control



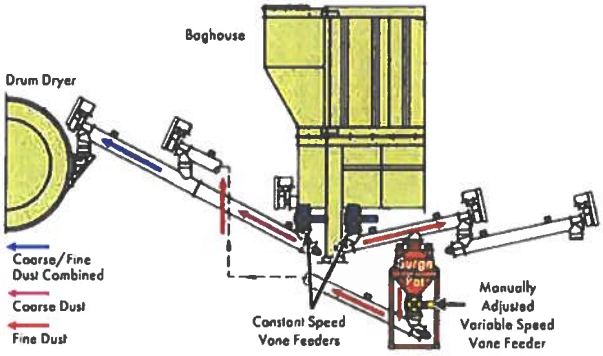
Split Return With Weigh Pot

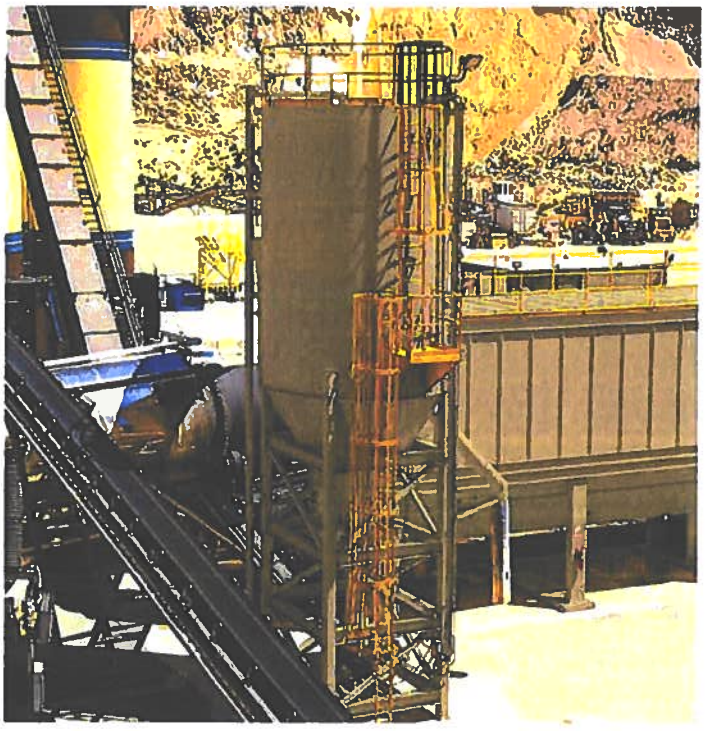


Return All



Split Return With Surge Pot





DUST SILOS

Dust silos are available in sizes ranging from 350 to 900 barrels and equipped with Astec's mass-flow technology to assure precision metering.

Dust storage silo systems are either stationary or portable. Portable models have the option to include crane-erect or hydraulic self-erection packages and permanent or removable running gear.

www.astecindustries.com

Integrated Process Solutions Group
4101 Jerome Avenue
Chattanooga, TN 37407
United States of America

BAGHOUSE SPECIFICATIONS - As Built

CUSTOMER	Grace Pacific - Makakilo, HI	
WORK ORDER	24-194	
MODEL NO.	RBH-78-14W	
RATED AIRFLOW	78000	ACFM
	2209	ACMM
CLEAN METHOD	Pulse-Jet	
PRIMARY	Inertial Separator	
EXHAUST FAN	BCS490	
	300hp VFD drive	

PARTICULATE EMISSION CONTROL

The baghouse will comply with the following particulate emission standard when operated and maintained according to all manufacturer recommendations:

PM EMISSIONS LIMIT	USEPA NSPS 40CFR60 Subpart I - 0.04 gr/dscf [90 mg/dscm]
MIN CONTROL EFFICIENCY	99.96%

FILTRATION MEDIA SPECIFICATIONS

FILTER MEDIA	14 oz/yd2 [475 g/m2] Aramid							
BAG QUANTITY	1120	Total	1120	10ft		6ft		N/A
BAG TYPE	ROUND: 4-5/8" [117.5 mm] DIAMETER							
CLOTH AREA	13561	ft^2	1259.9	m^2				
AIR/CLOTH RATIO	5.75	fpm	1.75	m/min	*ACR = maximum filtering velocity*			

EXHAUST STACK SPECIFICATIONS

STACK SHAPE	ROUND	OPENING SIZE	4'-2 3/8" ID		
DISCHARGE AREA	13.84	ft^2	1.29	m^2	*unobstructed vertical discharge*
EXHAUST VELOCITY	93.93	fps	28.63	m/sec	*maximum velocity at rated airflow*
EXHAUST HEIGHT	30'-0"	IMP	9.14	MET	

OPERATING PARAMETERS

DESIGN TEMP	240	°F	115.6	°C	STACK H2O %	20 - 35

The actual operating exhaust temperature will range from 185 °F [85 °C] to 375 °F [190 °C].

The operating differential pressure will range from 2 - 6 inWC [5 - 15 mbar]. Operation outside of this range does *not* indicate the unit is malfunctioning or that it is out of compliance with the applicable particulate emission standard. Contact Astec Industries, Inc. (423.867.4210) for more information.

NOTE: Information provided is based on baghouse configuration as originally manufactured.

CERTIFIED BY:	Catherine Sutton Choate	TITLE	Dir. Of Environmental Compliance

Attachment S-4b
Insignificant Activities §11-60.1-82(f)

Rule Citation and Requirement	Activity Present	Description
(f) Insignificant activities based on size, emission level, or production rate, are as follows:	**See below:**	**See case-by-case descriptions below:**
(1) Any storage tank, reservoir, or other container of capacity equal to or less than 40,000 gallons storing volatile organic compounds, except those storage tanks, reservoirs, or other containers subject to any standard or other requirement pursuant to Sections 111 and 112 of the Act;	Yes	Diesel and asphalt storage tanks
(2) Other than smoke house generators and gasoline fired industrial equipment, fuel burning equipment with a heat input capacity less than 1 MMBtu per hour, or a combination of fuel burning equipment operated simultaneously as a single unit having a total combined heat input capacity of less than 1 MMBtu per hour;	No	None.
(3) Steam generators, steam superheaters, water boilers, or water heaters, all of which have a heat input capacity of less than 5 MMBtu per hour, and are fired exclusively with one of the following: (A) Natural or synthetic gas; (B) Liquefied petroleum gas; or (C) A combination of natural, synthetic, or liquefied petroleum gas;	No	None.
(4) Kilns used for firing ceramic ware heated exclusively by natural gas, electricity, liquid petroleum gas, or any combination of these and have a heat input capacity of 5 MMBtu per hour or less;	No	None.
(5) Standby generators used exclusively to provide electricity, standby sewage pump drives, and other emergency equipment used to protect the health and welfare of personnel and the public, all of which are used only during power outages, emergency equipment maintenance and testing, and which: (A) Are fired exclusively by natural or synthetic gas; or liquified petroleum gas; or fuel oil No. 1 or No. 2; or diesel fuel oil No. 1D or No. 2D; and (B) Do not trigger a PSD or covered source review, based on their potential to emit regulated or hazardous air pollutants;	No	None
(6) Paint spray booths that emit less than two tons per year of any regulated air pollutant, except for paint spray booths subject to any standard or other requirement pursuant to Section 112 (d) of the Act; and	No	None
(7) Other activities which emit less than: (A) 500 pounds per year of a hazardous air pollutant; (B) 25% of significant amounts of emission as defined in Section 11-60.1-1, paragraph (1) in the definition of "significant"; (C) 5 tons per year of carbon monoxide; and (D) 2 tons per year of each regulated air pollutant other than carbon monoxide and which the director determines to be insignificant on a case-by-case basis.	Yes	100 kW diesel engine generator for non-production time power supply.

File No.: _____

C-1: Compliance Plan

The Responsible Official shall submit a Compliance Plan as indicated in the Instructions for Applying for an Air Pollution Control Permit and at such other times as requested by the Director of Health (hereafter, Director).

Use separate sheets if necessary.

---

1. Compliance status with respect to all Applicable Requirements:

   Will your facility be in compliance, or is your facility in compliance, with all applicable requirements in effect at the time of your permit application submittal?

   ■ YES { If YES, Complete items a and c below}

   ☐ NO { If NO, Complete items a-c below}

   a. Identify all applicable requirement(s) for which compliance is achieved:
   See Attachment C-2a.

   Provide a statement that the source is in compliance and will continue to comply with all such requirements.
   When installed and operating, the equipment will be in compliance and will remain in compliance.

   b. Identify all applicable requirement(s) for which compliance is NOT achieved:
   Not applicable – When installed and operating, the equipment will be in compliance and will remain in compliance.

   Provide a detailed Schedule of Compliance and a description of how the source will achieve compliance with all such applicable requirements. Use separate sheets of paper, if necessary.

Description of Remedial Action	Expected Date of Completion
Not applicable.	

c. Identify any other applicable requirement(s) with a future date that your source is subject to. These applicable requirements may be in effect AFTER permit issuance:

Applicable Requirement	Effective Date	Currently in Compliance?
Grace Pacific is not aware of any future requirements at the time of this application.		

If the source is not currently in compliance, submit a Schedule of Compliance and a description of how the source will achieve compliance with all such requirements:

Description of Proposed Action/Steps to Achieve Compliance	Expected Date of Achieving Compliance

Provide a statement that the source on a timely basis will meet all these applicable requirements.

If the expected date of achieving compliance will NOT meet the applicable requirement's effective date, provide a more detailed description of all remedial actions and the expected dates of completion.

Description of Remedial Action and Explanation	Expected Date of Completion

2. Compliance Progress Reports:

a. If a compliance plan is being submitted to remedy a violation, complete the following information:

Frequency of Submittal: _____ (less than or equal to 6 months) Beginning Date: _____

b. Date(s) that the Action described in (1)(b) was achieved:

Remedial Action	Date Achieved
Not applicable.	

c. Narrative description of why any date(s) in (1) (b) was not met, and any preventive or corrective measures taken in the interim:

Not applicable.

RESPONSIBLE OFFICIAL (as defined in HAR §11-60.1-1)

Name (Last): Komatsu (First): Scott (MI): _____

Title: Vice President, Materials Phone: (808) 674-8383

Mailing Address: P.O. Box 78

City: Honolulu State: HI Zip Code: 96810-0078

Certification by Responsible Official (pursuant to HAR §11-60.1-4)

I certify that I have knowledge of the facts herein set forth, that the same are true, accurate and complete to the best of my knowledge and belief, and that all information not identified by me as confidential in nature shall be treated by the Department of Health as public record. I further state that I will assume responsibility for the construction, modification, or operation of the source in accordance with the Hawaii Administrative Rules, Title 11, Chapter 60.1, Air Pollution Control, and any permit issued thereof.

Name (Print/Type): Scott Komatsu

(Signature): Scott Komatsu Date: 12/17/24

Facility Name: 400 TPH Hot Mix Asphalt Plant

Location: Makakilo Quarry

Permit Number: New Permit Application

FOR AGENCY USE ONLY

File/Application No.: _____

Island: _____

Date Received: _____

File No.: _____

C-2: Compliance Certification

The Responsible Official shall submit a Compliance Certification as indicated in the Instructions for Applying for an Air Pollution Control Permit and at such other times as requested by the Director of Health (hereafter, Director).

Complete as many copies of this form as needed. Use separate sheets of paper if necessary.

RESPONSIBLE OFFICIAL (as defined in HAR §11-60.1-1)

Name (Last): Komatsu (First): Scott (MI): _____

Title: Vice President, Materials Phone: (808) 674-8383

Mailing Address: P.O. Box 78

City: Honolulu State: HI Zip Code: 96810-0078

Certification by Responsible Official (pursuant to HAR §11-60.1-4)

I certify that I have knowledge of the facts herein set forth, that the same are true, accurate and complete to the best of my knowledge and belief, and that all information not identified by me as confidential in nature shall be treated by the Department of Health as public record. I further state that I will assume responsibility for the construction, modification, or operation of the source in accordance with the Hawaii Administrative Rules, Title 11, Chapter 60.1, Air Pollution Control, and any permit issued thereof.

Name (Print/Type): Scott Komatsu

(Signature): Scott Komatsu Date: 12/17/24

Facility Name: 400 TPH Hot Mix Asphalt Plant

Location: Makakilo Quarry

Permit Number: New Permit Application

FOR AGENCY USE ONLY
File/Application No.: _____
Island: _____
Date Received: _____

Complete the following information for ***each*** applicable requirement that applies to ***each*** emissions unit at the source. Also include any additional information as required by the Director. The compliance certification may reference information contained in a previous compliance certification submittal to the Director, provided such referenced information is certified as being current and still applicable.

1. Schedule for submission of Compliance Certifications during the term of the permit:

   Frequency of Submittal: In accordance with §11-60.1-86
   Beginning Date: In accordance with §11-60.1-86

2. Emissions Unit No./Description:

Unit ID	Description	Manufacturer	Model No	Nominal Capacity
GP01	Drum Mixer and Baghouse	ASTEC	Drum Mixer – 8 ft Double Barrel Baghouse - RBH-78-14W	400 TPH
GP09	Hot Oil Heater	ASTEC	HC-200	2.0 MMBtu/hr
GP10	Generator	Volvo Penta	NPV-1100GF	1100 kW

3. Identify the applicable requirement(s) that is/are the basis of this certification:
   See Attachment C-2a

4. Compliance status:

   a. Will the emissions unit be in compliance with the identified applicable requirement(s)?
      ■ YES ☐ NO

   b. If YES, will compliance be continuous or intermittent?
      ■ Continuous ☐ Intermittent

   c. If NO, explain:

5. Describe the methods to be used in determining compliance of the emissions unit with the applicable requirement(s), including any monitoring, recordkeeping, reporting requirements, and/or test methods:

See Attachment C-2a

Provide a detailed description of the methods used to determine compliance (e.g. monitoring device type and location, test method description, or parameter being recorded, frequency of recordkeeping, etc.):

See Attachment C-2a

6. Statement of Compliance with Enhanced Monitoring and Compliance Certification Requirements.

a. Will the emissions unit identified in this application be in compliance with applicable enhanced monitoring and compliance certification requirements?

■ YES ☐ NO

b. If YES, identify the requirements and the provisions being taken to achieve compliance:

The final Enhanced Monitoring Rule was published in the Federal Register on October 22, 1997 (62 FR 54900). According to that final rule, the Enhanced Monitoring Rules do not apply. The compliance certification requirement is established by 40 CFR §70 and HAR §11-60.1.

c. If NO, describe below which requirements will not be met:

Attachment C-2a
Compliance Certification

Regulatory Citation	Regulatory Requirement	Compliance Determination Method(s)
§11-60.1-2	*Prohibition of air pollution*	Recordkeeping. Grace Pacific will maintain records of permit applications and approvals.
§11-60.1-4	*Certification*	Recordkeeping. Grace Pacific will maintain records of all required certifications.
§11-60.1-6	*Holding of permit*	Recordkeeping. Grace Pacific will maintain a copy (electronic and/or hard copy) of the NSP at the facility.
§11-60.1-8	*Reporting of discontinuance*	Recordkeeping. Grace Pacific will maintain records of notification of permanent discontinuance of the construction, modification, relocation, or operation of the covered source.
§11-60.1-9	*Cancellation of a noncovered or covered source permit*	Recordkeeping. Grace Pacific will maintain records of construction commencement and progress.
§11-60.1-11	*Sampling, testing, and reporting methods*	Recordkeeping. Grace Pacific will maintain records of sampling, testing, and reporting methods.
§11-60.1-12	*Air quality models*	Recordkeeping. Grace Pacific will maintain records of air quality modeling performed and the basis of the modeling.
§11-60.1-15	*Reporting of equipment shutdown*	Recordkeeping. Grace Pacific will maintain records of notification of intent to shut down air pollution control equipment for maintenance.
§11-60.1-16	*Prompt reporting of deviations*	Recordkeeping. Grace Pacific will maintain records of deviation reports.
§11-60.1-32	*Visible emissions.*	Monitoring and Recordkeeping. Grace Pacific will perform and maintain records of periodic VE observations following 40 CFR Part 60, Appendix A, Method 9.
§11-60.1-33	*Fugitive dust.*	Monitoring and recordkeeping. Grace Pacific will take reasonable precautions to prevent and minimize fugitive dust from the proposed units.
§11-60.1-39	*Storage of volatile organic compounds.*	Recordkeeping. Grace Pacific will maintain records of the design of volatile organic compound storage tanks and the fuel stored.
Subchapter 4	*Noncovered Sources*	Not Applicable – The source is a covered source.
Subchapter 5	*Covered Sources*	Monitoring, testing, recordkeeping, and reporting.
Subchapter 6	*Fees for Covered Sources, Noncovered Sources, and Agricultural Burning*	Recordkeeping. Grace Pacific will maintain a record of each fee payment.
Subchapter 7	*Prevention of Significant Deterioration Review*	Not Applicable – The source is not subject to PSD review.

Attachment C-2a
Compliance Certification

Regulatory Citation	Regulatory Requirement	Compliance Determination Method(s)
Subchapter 8	*Standards of Performance for Stationary Sources*	Subpart I - Standards of Performance for Hot Mix Asphalt Facilities limits particulate matter emission from the drum mixer baghouse to 0.04 gr/dscf and limits opacity to 20%. Grace Pacific will maintain records of required NSPS notifications, reporting, testing, and recordkeeping requirements in accordance with Subparts A and I. Subpart IIII - Standards of Performance for Stationary Compression Ignition Internal Combustion Engines limits emissions from the diesel emission generator. Grace Pacific will comply with emission limits by purchasing a certified engine. The diesel engine generator will burn ultra-low sulfur diesel that complies with 40 CFR § 63.4207.
Subchapter 9	*Hazardous Air Pollutant Sources*	Subpart ZZZZ - National Emissions Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines. The facility is an area source of HAP emissions. Per 40 CFR § 63.6590(c), Grace Pacific will demonstrate compliance with 40 CFR Part 63 Subpart ZZZZ by complying with applicable requirements of 40 CFR Part 60 Subparts A and IIII.

AIR QUALITY IMPACT ANALYSIS

Grace Pacific / Hot Mix Asphalt Plant - Makakilo Quarry

Prepared By:

J. Stephen Beene – Sr. Consultant
Brandon McBride – Consultant

TRINITY CONSULTANTS
12700 Park Central Drive
Suite 600
Dallas, TX 75251
972.661.8100

December 2024

Project 244401.0215

Trinity Consultants

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1. INTRODUCTION

This air quality impact analysis (AQIA) is submitted to the State of Hawaii Department of Health (HDOH) for the initial application for a Temporary Covered Source Permit (CSP) for a relocatable Hot Mix Asphalt Plant (HMA). The relocatable HMA will initially be located in the Makakilo Quarry in the Kapolei area in the City and County of Honolulu. It will produce asphalt by mixing hot, dry aggregate with asphalt cement. The Makakilo Quarry is located at 91-1130 Pueonani St, Kapolei, HI 96707.

As required by HDOH rules, the AQIA demonstrates that the project will not cause or contribute to a violation of a State Ambient Air Quality Standard (SAAQS) or National Ambient Air Quality Standard (NAAQS).

2. MODELING METHODOLOGY

Dispersion modeling was used to determine the ambient air quality impacts of the proposed project. All modeling is consistent with HDOH and EPA guidelines, including "40 CFR Part 51, Appendix W - Guideline on Air Quality Models" (*Guideline*).

2.1 Model Selection

EPA's recommended dispersion model, AERMOD (version 23132), was used in the modeling analysis. AERMOD is a steady-state plume model capable of modeling simple, intermediate, and complex terrain receptors. In the stable boundary layer (nighttime), it assumes the concentration distribution to be Gaussian in both the vertical and horizontal. In the convective boundary layer (daytime) the probability density function describing the horizontal distribution is assumed to be Gaussian, while the vertical distribution is assumed to be bi-Gaussian. AERMOD also contains the PRIME algorithm, which incorporates the two fundamental features associated with building downwash: (1) enhanced plume dispersion coefficients due to the turbulent wake, and (2) reduced plume rise caused by a combination of the descending streamlines in the lee of the building and the increased entrainment in the wake. The Building Profile Input Program for PRIME (BPIPPRM version 04274) was used to account for building downwash effects.

The Sulfur Dioxide (SO_2), Carbon Monoxide (CO), particulate matter with a diameter of 10 microns or less (PM_{10}), particulate matter with a diameter of 2.5 microns or less ($PM_{2.5}$), and Nitrogen Dioxide (NO_2) modeling is performed using the regulatory default modeling options. The conversion of Nitrogen Oxides (NO_x) to NO_2 is conducted using the Ambient Ratio Method version 2 (ARM2) and the default minimum and maximum ambient ratio NO_2/NO_x ratios.

AERMOD (starting with version 11059) is capable of calculating the distribution of daily maximum 1-hour values. The daily maximum 1-hour values are calculated when the pollutant ID is either "SO2" or "NO2" and the only short-term averaging period specified is "1-hour." When modeling with 5 years of NWS meteorological data, the receptor-by-receptor 5-year average serves as an unbiased estimate of the 3-year average for comparison to the 1-hour SO_2, 1-hour NO_2, and 24-hour $PM_{2.5}$ NAAQS. Controlling modeled concentrations for the percentile based 1-hour SO_2, 1-hour NO_2, and 24-hour $PM_{2.5}$ NAAQS are as follows:

- The 1-hour SO_2 NAAQS controlling modeled concentration is the 99th percentile (4th high averaged over 5-years) daily maximum 1-hour average SO_2 concentration.
- The 1-hour NO_2 NAAQS controlling modeled concentration is the 98th percentile (8th high averaged over 5-years) daily maximum 1-hour average NO_2 concentration.
- The 24-hour $PM_{2.5}$ NAAQS controlling modeled concentration is the 98th percentile (8th high averaged over 5-years) daily $PM_{2.5}$ concentration.

For comparison to the NAAQS, the background concentrations described in Section 2.5 were added to the controlling modeled concentrations.

2.2 Modeled Project Emissions

The project consists of a drum mixer controlled by a baghouse, a diesel engine generator, and a hot oil heater. Table 2-1 lists the modeled UTM coordinates of the proposed unit. Table 2-2 and Table 2-3 list the modeled emission rates and stack parameters for the proposed units. Figure 2-1 shows the proposed site layout. Figure 2-2 shows the proposed modeled sources.

Table 2-1. Modeled Stack Location

Unit	Model ID	NAD-83 UTM Coordinates			Base Elevation*	
		Easting (m)	Northing (m)	Zone	(ft)	(m)
Drum Mixer through Baghouse	GP01	596567.0	2361619.9	4	259	79
1,100 kW Diesel Engine Generator Stack A	GP10a	596559.8	2361615.8	4	259	79
1,100 kW Diesel Engine Generator Stack B	GP10b	596564.3	2361604.9	4	259	79
Hot Oil Heater	GP09	596590.9	2361577.5	4	259	79

* Base elevation is based on the grading of the site.

Table 2-2. Modeled Stack Parameters

Unit	Model ID	Stack Height (m)	Stack Temp. (K)	Stack Velocity (m/s)	Stack Diameter (m)
Drum Mixer through Baghouse	GP01	9.14	388.71	28.630	1.280
1,100 kW Diesel Engine Generator Stack A	GP10a	2.90	695.93	54.840	0.210
1,100 kW Diesel Engine Generator Stack B	GP10b	2.90	695.93	54.840	0.210
Hot Oil Heater	GP09	2.87	588.71	8.835	0.305

Table 2-3. Modeled Emissions

Unit	Model ID	Modeled Emission Rates (g/s)								
		SO_2		PM_{10}		$PM_{2.5}$		NO_x		CO
		Short-Term	Annual	Short-Term	Annual	Short-Term	Annual	Short-Term	Annual	Short-Term
Drum Mixer through Baghouse	GP01	0.554	0.276	1.174	0.586	1.174	0.586	2.772	1.382	6.552
1,100 kW Diesel Engine Generator Stack A	GP10a	8.82E-04	8.82E-04	1.26E-02	1.26E-02	1.26E-02	1.26E-02	0.162	0.162	0.715
1,100 kW Diesel Engine Generator Stack B	GP10b	8.82E-04	8.82E-04	1.26E-02	1.26E-02	1.26E-02	1.26E-02	0.162	0.162	0.715
Hot Oil Heater	GP09	3.92E-04	3.92E-04	6.07E-03	6.07E-03	6.07E-03	6.07E-03	0.037	0.037	0.021

Figure 2-1. Site Layout

Figure 2-2. Modeled Sources

2.3 AERMOD Meteorological Data

AERMOD uses several different boundary layer parameters to model how pollutants disperse in the atmosphere. Many of these parameters are not directly measured but are calculated from other variables that are more easily measured. AERMET, EPA's meteorological processor for AERMOD, uses observed near-surface wind and temperature and site-specific surface characteristics to estimate these boundary layer parameters. The following surface characteristics are input into AERMET during the processing:

- Surface roughness length (z_o) – the height above the ground at which horizontal wind velocity is typically zero,
- Noon-time albedo (r) – the fraction of radiation reflected by the surface, and
- Daytime Bowen ratio (B_o) – the ratio of the sensible heat flux (H) to the latent heat flux (λE).

In the AERMOD Implementation Guide, EPA recommends the following methodology to determine these surface characteristics:

1. The determination of the surface roughness length should be based on an inverse-distance weighted geometric mean for a default upwind distance of 1 km relative to the measurement site. Surface roughness length may be varied by sector to account for variations in land cover near the measurement site; however, the sector widths should be no smaller than 30 degrees.
2. The determination of the Bowen ratio should be based on a simple unweighted geometric mean (i.e., no direction or distance dependency) for a representative domain, with a default domain defined by a 10 km by 10 km region centered on the measurement site.
3. The determination of the albedo should be based on a simple unweighted arithmetic mean (i.e., no direction or distance dependency) for the same representative domain as defined for Bowen ratio, with a default domain defined by a 10 km by 10 km region centered on the measurement site.

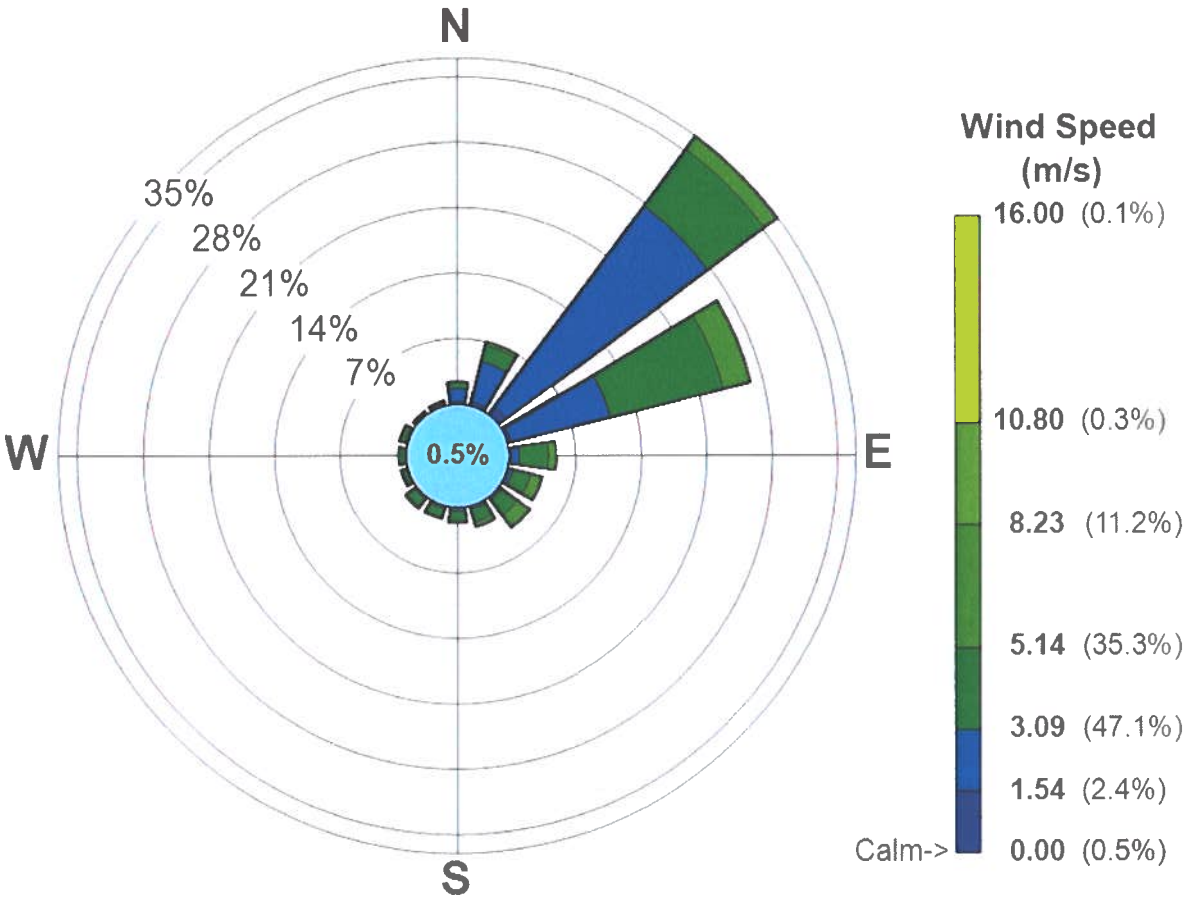
EPA developed AERSURFACE to calculate the surface characteristics based on this recommended methodology. AERSURFACE reads land cover, impervious surface, and tree canopy data from the United States Geological Survey (USGS) National Land Cover Dataset (NLCD). The AERSURFACE analysis used the newest dataset available for Hawaii and is compatible with AERSURFACE. Meteorological surface data collected at the Kalaeloa Airport (PHJR) meteorological monitoring station and Lihue upper air data were used in the AQIA. Figure 2-3 shows the location of the PHJR meteorological monitoring station and the project site.

EPA modeling guidance states that the determination of representativeness of meteorological data should include a comparison of factors such as surface characteristics of the measurement site and source locations, surrounding land use, wind roses, and significant terrain features. The PHJR meteorological data monitoring site is located approximately 5.25 km south of the project site. No major geographic features impacting the surface conditions or wind patterns exist between the two locations. The land uses surrounding the meteorological monitoring site and the project site are similar.

In the *Guideline*, EPA states that five (5) years of NWS meteorological data are adequate to ensure that worst-case meteorological conditions are represented in the model results. HDOH also recommends a five-year dataset. The meteorological data was compiled using EPA's AERMOD processor and pre-processors AERMINUTE (version 15272), AERMET (version 23132) and AERSURFACE (version 20060) using the ADJ_U* option, and include the period of January 1, 2019, through December 31, 2023. Figure 2-4 shows the wind rose for meteorological data collected at the PHJR monitoring station.

Figure 2-3. Project Site and Meteorological Monitoring Station Locations

Figure 2-4. Kalaeloa Airport (PHJR) Wind Rose (2019-2023)



2.4 AERMOD Receptor Data and Modeling Domain

The ambient air boundary used in the modeling was conservatively set to the extent of the quarry. Figure 2-1 shows the modeled boundary in relationship to the property line. The modeling grid consists of:

- 25-m spaced receptors along the ambient air boundary (i.e., that area to which public access is restricted by a combination of fencing, steep terrain, and dense vegetation),
- 25-m spaced receptors centered at the project property to 0.75 km,
- 100-m spaced receptors from 0.75 km to 1.5 km,
- 500-m spaced receptors from 1.5 km to 5.0 km, and
- 1,000-m spaced receptors from 5.0 km to 10 km.

EPA's AERMAP (version 18081) program determined the receptor elevations and height scales. AERMOD uses the receptor's height scale to determine if the plume is terrain following or terrain impacting. The AERMAP User's Guide states that the domain boundary must include all terrain features that exceed a 10% elevation slope from any given receptor. USGS National Elevation Dataset (NED) 1/3 arc-second data was used to identify all terrain features surrounding the project site.

2.5 Background Concentrations

For the pollutant averaging periods with project impact above the modeling significant impact levels (SIL), background ambient concentrations were added to the maximum project impact for comparison to the NAAQS and SAAQS. The project impacts are above the SIL for $PM_{2.5}$, PM_{10}, SO_2 and NO_2. Ambient air quality monitoring data are available from HDOH's HDOH's Kapolei AQM. The Kapolei AQM is located approximately 4 km south-southwest of the project site. Figure 2-3 shows the location of the Kapolei AQM station and the project site.

The following methods define the background concentrations:

- 1-hour NO_2 – Per EPA's March 1, 2011 memorandum[1], as a "first tier" for the 1-hour NO_2 NAAQS analysis, the monitored NO_2 design value (98th percentile) should be added to the modeled NO_2 design value (98th percentile). A "second tier" based on multiyear averages of the 98th percentile background concentrations by hour-of-day and/or season may be used. The "first tier" method based on the 3-year average of the 1-hour NO_2 monitored 98th percentile design value defines the 1-hour background NO_2 concentration.
- Annual NO_2 – The 3-year maximum defines the annual background NO_2 concentration.
- 24-hour $PM_{2.5}$ – Per EPA's March 4, 2013 memorandum[2], as a new "first tier" for the 24-hour NAAQS analysis, the monitored 24-hour design value (3-year average of the 98th percentile) should be added to the modeled 24-hour design value (multiyear average of the 98th percentile). A "second tier" approach based on combining the monitored and modeled $PM_{2.5}$ concentrations on a seasonal or quarterly basis and re-sorting the total impacts across the year to determine the cumulative design value may be considered on a case-by-case basis. The "first tier" method

[1] *Additional Clarification Regarding Application of Appendix W Modeling Guidance for the 1-hour NO_2, National Ambient Air Quality Standard*, Tyler Fox Memorandum, dated March 1, 2011. U.S. Environmental Protection Agency, Research Triangle Park, NC.

[2] *Draft Guidance for $PM_{2.5}$ Permit Modeling*, Stephen D. Page Memorandum, dated March 4, 2013. U.S. Environmental Protection Agency, Research Triangle Park, NC.

based on the 3-year average of the 24-hour design value defines the 24-hour background $PM_{2.5}$ concentration.

- Annual $PM_{2.5}$ – Per EPA's March 23, 2010 memorandum[3], the maximum modeled annual should be added to the monitored design value (3-year average). The annual design value (3-year average) defines the annual background $PM_{2.5}$ concentration.
- 1-hour SO_2 – Following the 24-hour $PM_{2.5}$ and 1-hour NO_2 guidance, monitored SO_2 design value (99^{th} percentile) is added to the modeled SO_2 design value (99^{th} percentile). Therefore, the 3-year average of the 99^{th} percentile defines the 1-hour background SO_2 concentration.
- 24-hour SO_2 – The 3-year maximum defines the 24-hour background SO_2 concentration.
- Annual SO_2 – The 3-year maximum defines the annual background SO_2 concentration.
- 24-hour PM_{10} – The 3-year maximum defines the 24-hour background PM_{10} concentration.
- Annual PM_{10} – The 3-year maximum from the HDOH's Kapolei AQM station defines the annual PM_{10} background concentration.

Table 2-4 contains a summary of the HDOH monitoring data used to determine background concentrations for this analysis.

[3] *Modeling Procedures for Demonstrating Compliance with $PM_{2.5}$ NAAQS*, Stephen D. Page Memorandum, dated March 23, 2010. U.S. Environmental Protection Agency, Research Triangle Park, NC.

Table 2-4. Representative Background Concentrations

Pollutant	Averaging Period	Concentration			Concentration ($\mu g/m^3$)			Background Concentration ($\mu g/m^3$)	NAAQS/ SAAQS ($\mu g/m^3$)	% of Standard	HDOH Monitoring Station
		2021	2022	2023	2021	2022	2023				
SO_2		99th Percentile Design Value (ppb)			99th Percentile Design Value			3-yr Average			
	1-Hr	5.8	1.9	11.4	15.2	5.0	29.9	16.7	196	8.5%	Kapolei/Ncore[1]
		Maximum (ppb)			Maximum			3-yr Maximum			
	3-Hr	3	1	15	7.9	2.6	39.3	39.3	1,300	3.0%	Kapolei/Ncore[1]
	24-Hr	2	1	2	5.2	2.6	5.2	5.2	365	1.4%	Kapolei/Ncore[1]
	Annual	0.7	0.2	0.2	1.8	0.5	0.5	1.8	80	2.3%	Kapolei/Ncore[1]
NO_2		98th Percentile Design Value (ppb)			98th Percentile Design Value			3-yr Average			
	1-Hr	21.5	23.1	23.2	40.4	43.4	43.6	42.5	188	22.6%	Kapolei
		Maximum (ppb)			Maximum			3-yr Maximum			
	Annual	3	3	3	5.6	5.6	6.2	6.2	70	8.9%	Kapolei
PM_{10}					Maximum			3-yr Maximum			
	24-Hr				46	48	76	76	150	50.7%	Kapolei
	Annual				9.2	16.5	16.7	16.7	50	33.4%	Kapolei
$PM_{2.5}$					98th Percentile Design Value			3-yr Average			
	24-Hr				6.7	8.1	9.3	8.0	35	23.0%	Kapolei
					Design Value			3-yr Average			
	Annual				2.9	3.8	4.4	3.7	9	41.1%	Kapolei
CO [2]		Maximum (ppm)			Maximum			3-yr Maximum			
	1-Hr	0.8	6.0	0.6	915	6,864	686	6,864	10,000	68.6%	Kapolei/Ncore[1]
	8-Hr	0.3	0.8	0.3	343	915	343	915	5,000	18.3%	Kapolei/Ncore[1]

Source: HDOH's "Annual Summary Hawaii Air Quality Data" reports. These are the most recent reports available.

Notes:

[1] Standard SO_2 and CO sampling was discontinued on March 31, 2022; data from the NCore trace SO_2 and CO analyzers are used beginning April 1, 2022.

[2] The 2022 CO data is elevated due to a brush fire right next to the station. Both the 1st and 2nd highs were impacted, the 2nd high is listed to minimize the impact of the brush fire.

2.6 GEP Stack Height and Building Downwash

For air quality modeling purposes, the proposed new units were evaluated in terms of their proximity to nearby structures to determine whether stack effluents may be affected by downwash in the turbulent wake of such structures. AERMOD uses the following building parameters to account for downwash:

- BUILDHGT, the building height,
- BUILDWID, the projected width of the building perpendicular to the flow,
- BUILDLEN, the projected length of the building along the flow,
- XBADJ, the along-flow distance from the stack to the center of the upwind face of the projected building, and
- YBADJ, the across-flow distance from the stack to the center of the upwind face of the projected building.

Building parameters were obtained using EPA's Building Profile Input Program designed for AERMOD (BPIPPRM – version 04274). BPIPPRM calculates the building parameters for 36 wind directions based on the physical dimensions of the structures surrounding a source. Trinity reviewed information from Google Earth and determined that off-site buildings do not need to be included in the modeling. The BPIPPRM input and output files are included with the modeling files. The building heights are shown in Table 2-5. The *Guideline* states the use of stack heights greater than the Good Engineering Practice (GEP) stack height in the modeling is prohibited (40 CFR §51.118 and 40 CFR §51.164). Per 40 CFR §51.100 the GEP stack height limit for this project is the greater of:

- 65 meters, measured from the ground-level elevation at the base of the stack, or
- The formula GEP stack height ($GEP_f = H + 1.5L$). Where, H is the structure height, and L is the lesser dimension of the structure (height or projected width).

The proposed stack heights are less than the formula GEP stack heights and less than the 65-meter limit; therefore, the stack heights are within acceptable limits.

Table 2-5. Modeled Building Heights

Description	Model ID	Height (m)
Baghouse	B-1	7.00
Control Center	B-2	2.90
Generator	B-3	2.90
Drum Mixer	B-4	7.00
Silo 1	S-1	12.13
Silo 2	S-2	12.13
Silo 3	S-3	12.13
Silo 4	S-4	12.13
AC Tank 1	A-1	9.14
AC Tank 2	A-2	9.14

3. AMBIENT IMPACT MODELING RESULTS

This section describes the modeling results demonstrating that the proposed project does not cause or contribute to the violation of any NAAQS/SAAQS. Appendix A contains a catalog of the modeling files.

Following the guidance contained in the Guideline (Section 9.2.3), the modeling was conducted in two distinct stages:

- Stage 1 – Project Impact Analysis: This stage models only the impact of the new or modified source.
- Stage 2 – Cumulative Impact Analysis: This stage models the combined impact of the project and includes the background concentration from other sources not modeled (e.g., natural, minor, and distant major sources). Conservative estimates of background concentrations were used to account for nearby existing sources.

Each stage involves increasing complexity and details, as required, to demonstrate that the project will not cause or contribute to a violation of any NAAQS/SAAQS. If the project impact analysis in stage 1 demonstrates that a source's impact will not exceed the specified significance threshold for a particular pollutant and averaging period, then the source will not cause or contribute to any potential violation, and a cumulative impact analysis is not necessary for that pollutant and averaging period.

3.1 Project Impact Analysis

The project impact analysis (stage 1) determines whether the project has the potential to cause or contribute to a violation of any NAAQS/SAAQS. If screening or refined modeling indicates that the project will not cause or contribute to any potential violation of NAAQS/SAAQS, then the project impact analysis should generally be sufficient for the required demonstration (The Guideline, Section 9.2.3.c). Table 3-1 lists the modeling SILs that are used to determine if the project has the potential to cause or contribute to a violation.

Table 3-1. Modeling Significant Impact Level

Pollutant	Averaging Period	Significant Impact Level ($\mu g/m^3$)
NO_2	1-hour	7.5[a]
	Annual	1[b]
SO_2	1-hour	7.8[c]
	3-hour	25[b]
	24-hour	5[b]
	Annual	1[b]
CO	1-hour	2,000[b]
	8-hour	500[b]
PM_{10}	24-hour	5[b]
	Annual	1[b]
$PM_{2.5}$	24-hour	1.2[d]
	Annual	0.13[d]

Source:

a. EPA's Stephen D. Page memorandum, dated June 29, 2010, "Guidance Concerning the Implementing the 1-hr NO2 National Ambient Air Quality Standard in Prevention of Significant Deterioration Permits."
b. Table C-4 (page C.28) of the October 1990 Draft New Source Review Workshop Manual.
c. EPA's Stephen D. Page memorandum, dated August 23, 2010, "Guidance Concerning the Implementation of the 1-hour SO_2 NAAQS for the Prevention of Significant Deterioration Program."
d. EPA's Richard Wayland memorandum, dated April 30, 2020, "Supplement to the Guidance on Significant Impact Levels for Ozone and Fine Particles in the Prevention of Significant Deterioration Permitting Program"

Table 3-2 compares the maximum project impacts from the project to the modeling significant impact levels (SILs) and shows the project SO_2 3-hour, and CO 1-hour and 8-hour, and PM_{10} annual impacts are below the SILs. Therefore, no additional analysis is required for these pollutant-averaging periods.

Table 3-2. Project Impact Modeling Results

Pollutant	Averaging Period	Project Impact ($\mu g/m^3$)	SIL [3] ($\mu g/m^3$)	Above SIL (Yes/No)
SO_2	1-hr	64.27	7.8	Yes
	3-hr	22.69	25	No
	24-hr	11.24	5	Yes
	Annual	1.35	1	Yes
PM_{10}	24-hr	24.73	5	Yes
	Annual	3.56	1	Yes
$PM_{2.5}$	24-hr	22.49	1.2	Yes
	Annual	3.08	0.2	Yes
NO_2 [2]	1-hr	129.0	7.5	Yes
	Annual	21.4	1	Yes
CO	1-hr	763.9	2000	No
	8-hr	430.1	500	No

Notes:

1. The listed modeled concentrations are from EPA's AERMOD (v23132) dispersion model.
2. The NO_2 results are based on the Ambient Method version 2 (ARM2).
3. See Table 3-1.

Based on the results of the project impact analysis, a full impact analysis is required for SO_2 1-hour, 24-hour and annual, PM_{10} 24-hour and annual, $PM_{2.5}$ 24-hour and annual, and NO_2 1-hour and annual. The results of the full impact analysis are presented in the following section.

3.2 Cumulative Impact Analysis

A cumulative impact analysis (stage 2) is required for SO_2 1-hour, 24-hour, and annual, 24-hour and annual PM_{10}, $PM_{2.5}$ 24-hour and annual, and 1-hour and annual NO_2. The Guideline (Section 9.2.3.d) specifies that the cumulative impact analysis should be conducted with the same modeling methods used to characterize the project impact and then include the appropriate background concentrations. The resulting design concentrations should be used to determine whether the project will cause or contribute to a NAAQS/SAAQS violation. This determination should be based on:

1. The appropriate design concentration for each applicable NAAQS (and averaging period); and
2. Whether the source's emissions cause or contribute to a violation at the time and location of any modeled violation (i.e., when and where the predicted design concentration is greater than the NAAQS).

The NAAQS/SAAQS modeling requires the inclusion of existing sources and ambient background concentrations. Section 2.5 describes the incorporation of the ambient background concentrations that include the impact of nearby sources. Table 3-3 compares the combined impact of the proposed project and

background to the respective NAAQS or SAAQS. The results show the project does not cause or contribute to an exceedance for any NAAQS or SAAQS.

Table 3-3. NAAQS/SAAQS Analysis Results

Pollutant	Averaging Period	Project Impact ($\mu g/m^3$)	Background Concentration ($\mu g/m^3$)	Total Concentration ($\mu g/m^3$)	SAAQS/ NAAQS ($\mu g/m^3$)	Percent of Standard (%)
SO_2	1-hr	64.3	16.7	81.0	196	41.3%
	24-hr	11.2	5.2	16.4	365	4.5%
	Annual	1.4	1.8	3.2	80	3.9%
PM_{10}	24-hr	24.7	76.0	100.7	150	67.2%
	Annual	3.6	16.7	20.3	50	40.5%
$PM_{2.5}$	24-hr	16.5	8.0	24.5	35	70.0%
	Annual	3.1	3.7	6.8	12	56.5%
NO_2	1-hr	112.0	42.5	154.5	188	82.2%
	Annual	21.4	6.2	27.6	70	39.5%

Notes:

1. A NAAQS analysis is only required for pollutants and averaging periods with project impacts greater than or equal to the corresponding SIL.
2. The listed modeled concentrations are from EPA's AERMOD (v23132) dispersion model.
3. The NO_2 results are based on the Ambient Method version 2 (ARM2).

APPENDIX A. MODELING FILES

Appendix Table A-1. AERSURFACE Processing Files

Filename	File Type	Description
HI_Kalaeloa-A.inp HI_Kalaeloa-D.inp HI_Kalaeloa-W.inp	Input	AERSURFACE Input Files[1,2] (A - Average; D - Dry; W - Wet)
NLCD_2001_Land_Cover_HI_20080930.tiff	Input	2001 National Land Cover Data Land Cover datafile
NLCD_2016_Tree_Canopy_HI_20191018.tiff	Input	2016 National Land Cover Data Tree Canopy datafile
NLCD_2001_Impervious_HI_20080930.tiff	Input	2001 National Land Cover Data Impervious Surface datafile
HI_Kalaeloa-A.out HI_Kalaeloa-D.out HI_Kalaeloa-W.out	Output	AERSURFACE Output File (A - Average; D - Dry; W - Wet)
HI_Kalaeloa-A.log HI_Kalaeloa-D.log HI_Kalaeloa-W.log	Output	AERSURFACE Log File (A - Average; D - Dry; W - Wet)
HI_Kalaeloa-A.sfc HI_Kalaeloa-D.sfc HI_Kalaeloa-W.sfc	Output	AERSURFACE calculated surface parameters (A - Average; D - Dry; W - Wet)

[1] Due to the tropical location of Kalaeloa, the surface parameters for the summer season are used.

[2] The precipitation analysis (Precip_Kalaeloa.xlsx) shows that: 2019 and 2021 were wet, 2020 and 2023 were average, and 2022 was dry.

Appendix Table A-2. AERMET Processing Files

Filename	File Type	Description
AERMET_PHJR_XX.INP	Input	AERMET Input File
Lihue-2019-2023.fsl	Input	Upper air observations from Lihue Airport (2017 - 2021)
911780-22551-2023.ish	Input	Kalaeloa Airport (PHJR) Surface Meteorological Data
PHJR-2023-1min.dat	Input	Kalaeloa Airport (PHJR) 1-Min Wind Data
HI_Kalaeloa-A.sfc HI_Kalaeloa-D.sfc HI_Kalaeloa-W.sfc	Input	AERSURFACE calculated surface parameters (A - Average; D - Dry; W - Wet)
HJRLIH_XX.MSG	Output	Message File
HJRLIH_XX.RPT	Output	Summary Report
SFEXXX.DAT	Output	Extracted Surface Data
SFQAXX.DAT	Output	QAed Surface Data
UAEXOUTXX.DAT	Output	Extracted Upper Air Data
UAQAOUTXX.DAT	Output	QAed Upper Air Data
HJRLIHXX.SFC	Output	AERMOD input surface meteorological data
HJRLIHXX.PFL	Output	AERMOD input meteorological profile data
HJRLIH1923.SFC	Output	5-Year AERMOD input surface meteorological data
HJRLIH1923.PFL	Output	5-Year AERMOD input meteorological profile data

XX - The list 2-digits of the year (19 - 23)

Appendix Table A-3. AERMAP Processing Files

Filename	File Type	Description
Aermap input file	Input	AERMAP input file
USGS_n22w158.tif USGS_n22w159.tif	Input	USGS 1/3 Degree National Elevation Datasets covering Oahu
Aermap output file	Output	AERMAP output file
Aermap receptor file	Output	AERMAP Receptor Output File
Aermap map detail file	Output	AERMAP map detail file output
Aermap domain detail file	Output	Aermap domain detail file output
Aermap map parameters file	Output	AERMAP map parameters file output

Appendix Table A-4. BPIP-PRIME Processing Files

Filename	File Type	Description
Bpip input file	Input	BPIP-PRIME input file
Bpip output file	Output	BPIP-PRIME output information
Bpip summary file	Output	BPIP-PRIME summary file

Appendix Table A-5. AERMOD Run Log

Filename	Pollutant	Averaging Periods	Modeled Year(s)	Description
NS1923H04	NO_2	1-Hour	2019 - 2023	Project impact/NAAQS modeling - (H1H and H8H) impacts 5-year average
NS19A04	NO_2	Annual	2019	Project impact/NAAQS modeling
NS20A04			2020	
NS21A04			2021	
NS22A04			2022	
NS23A04			2023	
CS1923HE04	CO	1-hour and 8-hour	2019 - 2023	Project impact modeling
SS1923HTD04	SO_2	1-hour, 3-hour. and 24-hour	2019 - 2023	Project impact/NAAQS modeling
SS19A04	SO_2	Annual	2019	Project impact/NAAQS modeling
SS20A04			2020	
SS21A04			2021	
SS22A04			2022	
SS23A04			2023	
P2S1923D04	$PM_{2.5}$	24-Hour	2019 - 2023	Project impact/NAAQS modeling - 24-Hour (H1H and H8H) and annual impacts 5-year average
P2S1923A04	$PM_{2.5}$	Annual	2019 - 2023	Project impact/NAAQS modeling
P1S1923D04	PM_{10}	24-Hour		Project impact/NAAQS modeling
P1S19A04	PM_{10}	Annual	2019	Project impact/NAAQS modeling
P1S20A04			2020	
P1S21A04			2021	
P1S22A04			2022	
P1S23A04			2023	