

Date

**CERTIFIED MAIL**  
**RETURN RECEIPT REQUESTED**

08-E CAB  
File No. 0650

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Mr. Eric Knutzen  
Partner  
Green Energy Team, LLC  
4313 Kapuna Road  
Kilauea, Hawaii 96754

Dr. Mr. Knutzen:

**Subject: Covered Source Permit (CSP) No. 0650-01-C**  
**Application for Initial CSP No. 0650-01**  
**Green Energy Team, LLC**  
**Two (2) 50 MMBtu/hr Biomass Gasifiers with Close-Coupled Steam Boilers**  
**and One (1) 670 bhp Diesel Engine Generator**  
**Located at: Old Government Road, Koloa, Kauai**  
**UTM Zone 4: 452,443 m E; 2,429,060 m N (NAD-27)**  
**Date of Expiration: [five years from issue date]**

The subject covered source permit is issued in accordance with Hawaii Administrative Rules, Title 11, Chapter 60.1. The issuance of this permit is based on the plans, specifications, and information you submitted as part of your original application dated May 18, 2007 and additional information dated June 22, August 16, October 24 and 30, December 10, 11, 12, and 14, 2007, January 7, 23, and 24, February 7 and 26, and March 10, 24 and 26, 2008.

The covered source permit is issued subject to the conditions and 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

Mr. Eric Knutzen  
Date  
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The following forms are enclosed for your use and submittal as required:

Compliance Certification Form  
Excess Emission and Monitoring System Performance Summary Report  
Annual Emission Report Form: Gasifier/Boiler Systems  
Annual Emission Report Form: Diesel Engine Generator  
Monitoring Report Form: Gasifier/Boiler Systems  
Monitoring Report Form: Diesel Engine Generator  
Monitoring Report Form: Opacity Exceedances

Also enclosed for your use are the Visible Emissions Form Requirements with the following enclosures:

Visible Emissions Form  
Ringelmann Chart

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, 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.

Sincerely,

THOMAS E. ARIZUMI, P.E., CHIEF  
Environmental Management Division

CL:nn  
Enclosures

c: Rodney Yama, EHS - Kauai  
CAB Monitoring Section

**ATTACHMENT I: STANDARD CONDITIONS  
COVERED SOURCE PERMIT NO. 0650-01-C**

**Issuance Date:**

**Expiration Date:**

This permit is granted in accordance with the Hawaii Administrative Rules (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)<sup>2</sup>
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 of Health, except as provided in HAR, Section 11-60.1-91.  
  
(Auth.: HAR §11-60.1-7; SIP §11-60-9)<sup>2</sup>
4. A request for transfer from person to person shall be made on forms furnished by the Department of Health.  
  
(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 of Health 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 Covered Source Permit. There shall be no deviation unless additional or revised plans are submitted to and approved by the Department of Health, 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 of Health 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 of Health 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 of Health copies of records required to be kept by the permittee. For information claimed to be confidential, the Director of Health may require the permittee to furnish such records not only to the Department of Health 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 of Health 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)<sup>2</sup>

17. **Except for emergencies which result in noncompliance with any technology-based emission limitation in accordance with HAR, Section 11-60.1-16.5, 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 Health 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)<sup>2</sup>

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 of Health 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 of Health.

(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 of Health, 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 the facility covered by this permit**, the discontinuance shall be reported in writing to the Department of Health by a responsible official of the source.

(Auth.: HAR §11-60.1-8; SIP §11-60-10)<sup>2</sup>

25. Each permit renewal application shall be submitted to the Department of Health and the U.S. EPA Region 9 no less than twelve months and no more than eighteen months prior to the permit expiration date. The director may allow a permit renewal application to be submitted no less than six 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))<sup>1</sup>

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 of Health 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:**

**Clean Air Branch  
Environmental Management Division  
Hawaii Department of Health  
P.O. Box 3378  
Honolulu, HI 96801-3378**

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

**Chief  
Permits Office, (Attention: Air-3)  
Air Division  
U.S. Environmental Protection Agency  
Region 9  
75 Hawthorne Street  
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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<sup>1</sup> 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.

<sup>2</sup> 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  
COVERED SOURCE PERMIT NO. 0650-01-C**

**Issuance Date:**

**Expiration Date:**

In addition to the Standard Conditions of the Covered Source Permit, the following Special Conditions shall apply to the permitted facility:

**Section A. Equipment Description**

1. This permit encompasses the following equipment and associated appurtenances:
  - a. Two (2) 50 MMBtu/hr Chiptec (or equivalent as allowed by Attachment II, Special Condition No. C.7.) Biomass Gasifier/Boiler Systems with one (1) 75 foot high exhaust stack for both gasifier/boiler systems;
  - b. One (1) Multicyclone for each Gasifier/Boiler System;
  - c. One (1) PPC Industries (or equivalent as allowed by Attachment II, Special Condition No. C.7.) Electrostatic Precipitator for the two Gasifier/Boiler Systems;
  - d. One Marley MHF702D061 (or equivalent as allowed by Attachment II, Special Condition No. C.7.) Evaporative Cooler; and
  - e. One 670 bhp Caterpillar C5 ATAAC (or equivalent as allowed by Attachment II, Special Condition No. C.7.) Diesel Engine Generator.

(Auth.: HAR §11-60.1-3)

2. An identification tag or name plate shall be displayed on the each of the equipment listed in Attachment II, Condition A.1. to show model no., serial no., and manufacturer where applicable. The identification tag or name plate shall be permanently attached to the equipment in a conspicuous location.

(Auth.: HAR §11-60.1-5)

**Section B. Applicable Federal Regulations**

1. The Biomass Gasifier/Boiler Systems are subject to the provisions of the following federal regulations:
  - a. 40 CFR Part 60, Standards of Performance for New Stationary Sources, Subpart A, General Provisions; and
  - b. 40 CFR Part 60, Standards of Performance for New Stationary Sources, Subpart Dc, Standards of Performance for Small Industrial-Commercial-Institutional Steam Generating Units.

(Auth.: HAR §11-60.1-3, §11-60.1-90, §11-60.1-161; 40 CFR Part 60)<sup>1</sup>

2. The Diesel Engine Generator is subject to the provisions of the following federal regulations:
  - a. 40 CFR Part 60, Standards of Performance for New Stationary Sources, Subpart A, General Provisions; and
  - b. 40 CFR Part 60, Standards of Performance for New Stationary Sources, Subpart IIII, Standards of Performance for Stationary Compression Ignition Internal Combustion Engines.

(Auth.: HAR §11-60.1-3, §11-60.1-90, §11-60.1-161; 40 CFR Part 60)<sup>1</sup>

3. The permittee shall comply with all of the applicable requirements of these standards, including all emission limits, notification, reporting, monitoring, testing and recordkeeping 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)<sup>1</sup>

### **Section C. Operational and Emission Limits**

1. Gasifier/Boiler System Heat Input
  - a. The total wood chip heat input to the two (2) gasifiers shall not exceed a combined total of 840,000 MMBtu in any rolling twelve (12) month period. Heat input shall include all periods of operation of the gasifier/boiler system (including all startup and shutdown periods);
  - b. The measurement of heat input to the two (2) gasifiers shall be based on an approved or conditionally approved protocol as specified in Attachment II, Special Condition No. E.4.; and
  - c. The protocol must receive the approval or conditional approval of the Department of Health prior to the first fire of the gasifier/boiler system.

(Auth.: HAR §11-60.1-3, §11-60.1-90)

2. Gasifier/Boiler System Startup and Shutdown
  - a. Combustion shall not begin in the gasifier unless the induced draft fan is in operation to draw combustion air from the gasifier chamber through the gasifier/boiler system and out of the stack.

If an inspection indicates visible emissions exiting from the gasifier doors during gasifier startup, the Department of Health may at any time require the permittee to perform visible emissions monitoring of the gasifier doors during gasifier startup.

- b. Gasifier Startup
  - i. The beginning of gasifier startup shall be when combustion begins in the gasifier chamber; and
  - ii. The end of gasifier startup shall be when the rear gasifier doors are closed and combustion begins at the wood gas burner.
- c. Boiler Startup
  - i. The beginning of boiler startup shall be when combustion begins at the wood gas burner; and
  - ii. The end of boiler startup shall be when the O<sub>2</sub> level of the combustion gases in the boiler is reduced to below 11%.
- d. Gasifier Shutdown
  - i. The beginning of gasifier shutdown shall be when combustion at the wood gas burner is terminated and when the O<sub>2</sub> level of the combustion gases in the boiler exceeds 11%.

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

- 3. Gasifier/Boiler System Air Pollution Control Equipment
  - a. The permittee shall design, install, continuously operate and maintain the following air pollution control equipment to meet the particulate matter emission limit as specified in Attachment II, Special Condition Nos. C.5.a. and C.5.b.:
    - i. One (1) multicyclone for each gasifier/boiler system; and
    - ii. One (1) electrostatic precipitator for the two (2) gasifier/boiler systems.
  - b. The multicyclone equipped with each gasifier/boiler system shall be fully operational at all times when the respective gasifier/boiler system is in operation. At a minimum, the multicyclone shall be in full operation at the beginning of the gasifier's startup and shall continue to operate until the end of the gasifier's shutdown.
  - c. The electrostatic precipitator shall be fully operational at all times when at least one or both gasifier/boiler systems are in operation. At a minimum, the electrostatic

precipitator shall be in full operation at the end of the first boilers startup and shall continue to operate until the beginning of the last gasifier's shutdown.

- d. The permittee shall not operate the gasifiers/boiler systems if a problem affecting PM control efficiency of the multicyclone and/or ESP is observed or apparent at any time. The permittee shall investigate and correct the problem before resuming operation of the gasifier/boiler systems.
- e. Following the initial source performance test, the electrostatic precipitator's second-stage voltage shall be maintained at or above the minimum second stage voltage established during the initial source performance test of Attachment II, Special Condition No. F.1. The minimum second stage voltage shall be maintained at all times when at least one or both gasifier/boiler systems are in operation. The minimum second stage voltage shall be maintained from end of the first boilers startup and shall be maintained until the beginning of the last gasifier's shutdown.

(Auth.: HAR §11-60.1-3, §11-60.1-5, §11-60.1-90, §11-60.1-140, §11-60.1-161; 40 CFR Part 60.45c)<sup>1</sup>

#### 4. Gasifier/Boiler System Fuel Usage and Specifications

- a. Fuel oil no. 2 may be sprayed onto the gasifier wood chip pile to facilitate ignition of the wood pile. The maximum sulfur content of the fuel oil no. 2 shall not exceed 0.05% percent by weight.
- b. With the exception of the fuels allowed to be burned in the gasifier/boiler systems as specified in Attachment II, Special Condition Nos. C.4.a. and C.4.c., the gasifier/boiler systems shall be fired only on albizia and eucalyptus wood chips. The wood chips shall be untreated and uncontaminated by paint, oils, salts, pressure treated material, glues, preservatives, added chemicals, or similar foreign substances. Use of construction demolition debris of any type as wood fuel is explicitly prohibited.
- c. Wood fuel other than albizia or eucalyptus may be fired in the gasifier/boiler system provided that, in advance of its introduction into the gasifier/boiler system:
  - i. The gasifier/boiler system manufacturer has reviewed the proposed type and quantity of wood fuel and has agreed on its use, in writing;
  - ii. The permittee submits a request, in writing, and receives approval from the Department of Health. The request shall include the type and quantity of wood, expected duration of use, and certification that the proposed wood fuel will not increase the emissions of any air pollutant and will not result in the emission of any air pollutant not previously emitted;

- iii. A copy of the written agreement required by Attachment II, Special Condition No. C.4.c.i. is provided with the request; and
- iv. The permittee submits any additional information as requested by the Department of Health at the time of the request.

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

5. Gasifier/Boiler System Emission Limits

- a. Except during the gasifier/boiler system's startup and shutdown, the permittee shall not discharge or cause the discharge into the atmosphere from the operation of one gasifier/boiler system, nitrogen oxides (NO<sub>x</sub> as NO<sub>2</sub>), particulate matter (PM), and carbon monoxide (CO) emissions in excess of the following specified limits:

| Pollutant                             | Maximum Emission Limits in lb/MMBtu (3-hr average) | Maximum Emission Limits in lb/hr (3-hour average) |
|---------------------------------------|--|---|
| NO <sub>x</sub> (as NO <sub>2</sub> ) | 0.25   | 12.5  |
| PM                                    | 0.025  | 1.25  |
| CO                                    | 0.20   | 10  |

- b. Except for the gasifier/boiler system's startup and shutdown, the permittee shall not discharge or cause the discharge into the atmosphere from the operation of two gasifier/boiler systems, nitrogen oxides (NO<sub>x</sub> as NO<sub>2</sub>), particulate matter (PM), and carbon monoxide (CO) emissions in excess of the following specified limits:

| Pollutant                             | Maximum Emission Limits in lb/MMBtu (3-hr average) | Maximum Emission Limits in lb/hr (3-hour average) |
|---------------------------------------|--|---|
| NO <sub>x</sub> (as NO <sub>2</sub> ) | 0.25   | 25  |
| PM                                    | 0.025  | 2.5   |
| CO                                    | 0.20   | 20  |

- c. Emissions, averaged over any rolling three (3) hour period, shall not exceed the limits as specified in Attachment II, Special Condition Nos. C.5.a. and C.5.b., except during gasifier/boiler system startup and shutdown periods. The three (3) hour averaging period shall begin immediately at the end of boiler startup and end at the beginning of gasifier shutdown. Startup and shutdown periods are defined in Attachment II, Special Condition No. C.2.
- d. Total nitrogen oxide (NO<sub>x</sub>) emissions from the two gasifier/boiler systems shall not exceed a combined total of one-hundred nine and one-half (109.5) tons in any rolling twelve (12) month period.

- e. The PM emission limits of Attachment II, Special Condition No. C.5.a. and C.5.b. pertain to the front half (filter and probe) only.

(Auth.: HAR §11-60.1-3, §11-60.1-5, §11-60.1-90; 40 CFR Part 60.45c)<sup>1</sup>

6. Gasifier/Boiler System Opacity Limits

For any six (6) minute averaging period, the gasifier/boiler system shall not exhibit visible emissions of twenty (20) percent opacity or greater, except as follows: during startup, shutdown, or equipment breakdown, the gasifier/boiler system may exhibit visible emissions greater than twenty (20) percent opacity but not exceeding sixty (60) percent opacity for a period aggregating not more than six (6) minutes in any sixty (60) minute period.

(Auth.: HAR §11-60.1-3, §11-60.1-5, §11-60.1-32, §11-60.1-90; 40 CFR Part 60.47c)<sup>1</sup>

7. One Time Alternate Operating Scenario

This one time alternate operating scenario shall only be applicable to alternate unit(s) requested prior to the installation of the unit(s) listed in Attachment II, Special Condition No. A.1. and shall not apply to the replacement of any unit following initial installation.

The permittee may replace the Biomass Gasifier/Boiler System, Electrostatic Precipitator, Evaporative Cooler, or Diesel Engine Generator listed in Attachment II, Special Condition No. A.1. with alternate unit(s) if the following provisions are adhered to:

- a. The permittee shall submit a written request and receive prior written approval from the Department of Health before the replacement;
- b. For the Biomass Gasifier/Boiler System, Evaporative Cooler, and Diesel Engine Generator:
  - i. The alternate unit(s) is of comparable size or smaller with equal or lesser emissions;
  - ii. The alternate unit(s) complies with all applicable conditions including all air pollution control equipment requirements and operating restrictions; and
  - iii. The alternate unit(s) shall be installed at the same location as the unit(s) it is replacing.

- c. For the Electrostatic Precipitator:
  - i. The alternate units capacity to control particulate matter emissions is equal to or greater than that of the ESP listed in Attachment II, Special Condition No. A.1.; and
  - ii. The alternate unit complies with all applicable conditions including all air pollution control equipment requirements and operating restrictions;
- d. The written request shall include the following information:
  - i. Identify the unit(s) to be replaced;
  - ii. The reason(s) for the replacement;
  - iii. Written documentation on the alternate unit(s) including, but not limited to: the make, model, size, serial number, manufacturer's literature, emissions data (including but not limited to manufacture's guarantees), description of air pollution controls, control efficiencies, stack parameters, and calculations of emissions with supporting documentation;
  - iv. An ambient air quality impact assessment for the alternate unit(s) showing compliance with all State and National Ambient Air Quality Standards (SAAQS/NAAQS); and
  - v. Any additional information as requested by the Department of Health.

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

8. Fugitive Dust

- a. The permittee shall take measures to control fugitive dust (e.g., wet suppression, enclosures, dust screens, etc.) at material transfer points, stockpiles, and throughout the facility. The Department of Health may at any time require the permittee to further abate fugitive dust emissions if an inspection indicates poor or insufficient control.
- b. 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 visible emissions of fugitive dust beyond the lot line of the property boundary on which the emissions originate.

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

9. Maintenance

The equipment listed in Attachment II, Special Condition No. A.1. shall be maintained in good operating condition at all times with scheduled inspections and maintenance as recommended by the manufacturer, or as needed.

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

10. Diesel Engine Generator Operating Hours

- a. The maximum operating hours of the diesel engine generator shall not exceed eight (8) hours per day.
- b. The maximum operating hours of the diesel engine generator shall not exceed two-hundred (200) hours in any rolling twelve (12) month period.

(Auth.: HAR §11-60.1-3, §11-60.1-90)

11. Diesel Engine Generator Fuel Usage and Specifications

- a. From the initial startup of the diesel engine generator and up through September 30, 2010, the diesel engine generator shall be fired only on fuel oil no. 2 with:
  - i. A maximum sulfur content of 0.05% by weight; and
  - ii. A cetane index or aromatic content as follows:
    - 1) Minimum cetane index of forty (40); or
    - 2) Maximum aromatic content of thirty-five (35) volume percent.
- b. Beginning October 1, 2010, the diesel engine generator shall be fired only on diesel no. 2 with:
  - i. A maximum sulfur content of 0.0015% by weight; and
  - ii. A cetane index or aromatic content as follows:
    - 1) Minimum cetane index of forty (40); or
    - 2) Maximum aromatic content of thirty-five (35) volume percent.

(Auth.: HAR §11-60.1-3, §11-60.1-38, §11-60.1-90, §11-60.1-161; 40 CFR Part 60.4207)<sup>1</sup>

12. Diesel Engine Generator Emissions

- a. The diesel engine generator shall meet the emission standards in Table 1 of 40 CFR 60, Subpart IIII.
- b. For any six (6) minute averaging period, the diesel engine generator shall not exhibit visible emissions of twenty (20) percent opacity or greater, except as follows: during startup, shutdown, or equipment breakdown, the diesel engine generator may exhibit visible emissions of greater than twenty (20) percent opacity, but not exceeding sixty (60) percent 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, §11-60.1-161; 40 CFR Part 60.4204)<sup>1</sup>

13. Diesel Engine Generator Maintenance

The permittee shall operate and maintain the 670 bhp diesel engine generator according to the manufacture's written instructions or procedures developed by the permittee that are approved by the engine manufacturer, over the entire life of the engine. In addition the permittee may only change those settings that are permitted by the manufacturer.

(Auth.: HAR §11-60.1-3, §11-60.1-161; 40 CFR Part 60.4211)<sup>1</sup>

**Section D. Monitoring and Recordkeeping Requirements**

1. All records, including support information, shall be true, accurate and maintained for at least five (5) years from the date of the monitoring data (e.g., original strip chart or computer continuous emission monitoring (CEM) recordings), measurements, tests, reports, or applications. Support information includes but is not limited to all calibration and maintenance records, inspection and repair records, and copies of all reports required by this permit. These records shall be in a permanent form suitable for inspection and shall be made available to the Department of Health or its representative upon request.

(Auth.: HAR §11-60.1-3, §11-60.1-11, §11-60.1-90, §11-60.1-161; 40 CFR Part 60.47c, 40 CFR Part 60.4211)<sup>1</sup>

2. Gasifier/Boiler System Startup, Shutdown, and Air Pollution Control

- a. The following shall be recorded for the startup of the first gasifier/boiler system (where the second gasifier/boiler system is not in operation) and for the simultaneous startup of the two gasifier/boiler systems:
  - i. The date and time when the O<sub>2</sub> level of the combustion gases in the boiler is initially reduced to bellow 11%; and

- ii. The time the ESP is brought into full operation.
- b. The following shall be recorded for the shutdown of the last boiler:
  - i. The date and time when the O<sub>2</sub> level of the combustion gases in the boiler exceeds 11%;
  - ii. The time the ESP is shutdown.
- c. The permittee shall record the dates, times, durations and actions taken when the multicyclone is not operating as required by Special Condition No. C.3.b.
- d. The permittee shall record the dates, times, durations and actions taken when the ESP is not operating as required by Special Condition No. C.3.c.
- e. The total number of startups for the two (2) gasifier/boiler systems shall be recorded on an annual basis for annual emissions reporting purposes.

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

### 3. Gasifier/Boiler System Continuous Monitoring System

- a. Prior to the date of initial startup and thereafter, the permittee shall at its own expense install, operate, calibrate, and maintain the following continuous monitoring systems (CMS) for the gasifier/boiler systems to measure and record the following parameters or data. The associated date and time of the monitored data shall also be recorded.
  - i. The wood chip feed rate in pounds per hour;
  - ii. The wood chip heat input to the gasifiers in MMBtu per hour. Calculation of the wood chip heat input shall be based on the protocol of Attachment II, Special Condition No. C.1.b.;
  - iii. Boiler steam production in pound per hour;
  - iv. Continuous Opacity Monitoring System (COMS)  
  
Stack percent opacity using a Continuous Opacity Monitoring System (COMS) shall be measured. The COMS shall meet U.S. EPA monitoring performance standards as specified in Attachment II, Special Condition Nos. D.3.b. and D.3.c. The span value of the COMS shall be between 60 and 80 percent.
- b. The procedures under 40 CFR §60.13 shall be followed for the installation, evaluation, and operation of the CMS.

- c. The CMS shall also be operated according to the performance specifications of 40 CFR Part 60, Appendix B.

(Auth.: HAR §11-60.1-3, §11-60.1-5, §11-60.1-11, §11-60.1-90, §11-60.1-161; 40 CFR Part 60.47c; SIP §11-60-15) <sup>1,2</sup>

4. Gasifier/Boiler System ESP Voltage

- a. The voltage of the second stage of the ESP, provided for under Special Condition C.3. d. shall be checked routinely, or at least once per day when the facility is operating, to ensure effective collection of PM is occurring and to determine whether maintenance is required pursuant to Special Condition No. D.13.
- b. Written records shall be maintained on the operating second stage voltage of the ESP, in kV, for each day one or both gasifiers are operated.

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

5. Gasifier/Boiler System Malfunctions

The permittee shall record the date, time, description, and duration of any malfunctions of the gasifier/boiler system, multicyclones, electrostatic precipitator, and continuous monitoring system (CMS).

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

6. Gasifier/Boiler System Fuel Consumption, Heat Input, and NO<sub>x</sub> Emissions

The following records shall be maintained:

- a. Records on the fuel (chipped and unchipped wood) received at the facility including the date received, type of wood (e.g. albizia, eucalyptus, or a wood approved pursuant to Attachment II, Special Condition No. C.4.c.) and the quantity of wood received, in tons;
- b. The total quantity of wood fired in the gasifier/boilers on a daily, monthly and twelve (12) month rolling basis, in tons;
- c. The combined total wood chip heat input to the gasifiers, in MMBtu, on a monthly and rolling twelve (12) month rolling basis (including startup and shutdown). Calculation of NO<sub>x</sub> emissions shall be based on the heat input to the gasifier and the number of startups and shutdowns; and
- d. Total NO<sub>x</sub> emissions in tons/year on a monthly and twelve month rolling basis.

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

7. Gasifier/Boiler System Performance Test

Initial and annual source performance tests shall be conducted pursuant to Attachment II, Section F Testing Requirements. Records of test summaries and results shall be maintained.

(Auth.: HAR §11-60.1-3, §11-60.1-5, §11-60.1-11, §11-60.1-90, §11-60.1-161; SIP §11-60-15) <sup>2</sup>

8. Diesel Engine Generator Operating Hours

- a. The permittee shall operate and maintain a non-resetting hour meter for the continuous and permanent recording of the total hours the diesel engine generator is operated for the purpose of the hourly limitations of Special Condition No. C.10.

The following information shall be recorded:

- i. For each day the diesel engine generator is operated:
- 1) Date of meter readings;
  - 2) Beginning and ending meter readings; and
  - 3) Total operating hours for the day.
- ii. On a monthly basis:
- 1) The total number of hours the diesel engine generator is operated each month; and
  - 2) The total number of hours the diesel engine generator is operated on a rolling twelve (12) month basis.

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

9. Diesel Engine Generator Fuel Usage and Specifications

- a. Fuel purchase receipts, showing the supplier, fuel type, sulfur content in percent by weight, date of delivery, and amount of fuel delivered to the site for the diesel engine generator shall be maintained. Fuel sulfur content may be demonstrated by providing the supplier's fuel certification for the type of fuel purchased and received.
- b. Records on the total amount (gallons) and type of fuel fired in the diesel engine generator shall be maintained on an annual basis.

(Auth.: HAR §11-60.1-3, §11-60.1-5, §11-60.1-11, §11-60.1-90; SIP §11-60-15)<sup>2</sup>

10. Diesel Engine Generator Visible Emissions

- a. Except in those months where visible emissions (V.E.) observations are conducted pursuant to Special Condition No. D.10.b., the permittee shall conduct, for each month the diesel engine generator is operated, **monthly** (*calendar month*) V.E. observations for the diesel engine generator in accordance with 40 CFR Part 60, Appendix A, Method 9 or by use of a Ringelmann chart as provided. For each monthly observation, the permittee shall record two (2) consecutive observations, each six (6) minutes in duration with readings taken at fifteen (15) second intervals. Records shall be completed and maintained in accordance with the *Visible Emissions Form Requirements*.
- b. The permittee shall conduct **annually** (*calendar year*) V.E. observations for the diesel engine generator by a certified reader in accordance with 40 CFR Part 60, Appendix A, Method 9. For the annual observation, the permittee shall record two (2) consecutive observations, each six (6) minutes in duration with readings taken at fifteen (15) second intervals. Records shall be completed and maintained in accordance with the *Visible Emissions Form Requirements*.
- c. Upon written request and justification by the permittee, the Department of Health may waive the requirements for the **annual** V.E. observation. The waiver request is to be submitted prior to the required annual V.E. observation and must include documentation justifying such action. Documentation should include, but is not limited to, the results of the prior V.E. observations indicating compliance by a wide margin, documentation of continuing compliance, and further that operations of the source have not changed since the previous **annual** V.E. observation. The annual V.E. observation shall not be waived for more than two consecutive years.

Please note that the waiving of an annual (Method 9) V.E. observation does not absolve the permittee from any monthly (Method 9 or Ringelmann Chart) V.E. requirements. Monthly V.E. observations should still be performed in accordance with Special Condition No. D.3.d.1).

(Auth.: HAR §11-60.1-3, §11-60.1-5, §11-60.1-11, §11-60.1-32, §11-60.1-90; SIP §11-60-15, §11-60-24)<sup>2</sup>

11. Diesel Engine Generator Engine Manufacturer Data

Records on the diesel engine generator's manufacturer data indicating compliance with Attachment II, Special Condition No. C.12.a. shall be maintained over the life of the engine.

(Auth.: HAR §11-60.1-3, HAR §11-60.1-161; 40 CFR Part 60.4211)<sup>1</sup>

12. Alternate Operating Scenario

The permittee shall maintain all records corresponding to the implementation of the Alternate Operating Scenario of Attachment II, Special Condition No. C.7.

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

13. Maintenance

An inspection, maintenance, and repair log shall be maintained for the Gasifier/Boiler System (including the gasifiers, boilers, multicyclones, electrostatic precipitator, evaporative cooler) and the diesel engine generator. At a minimum, the following records shall be maintained:

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

(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. 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.*
  - i. *Notification shall include the information as specified in 40 CFR § 60.48c(a).*
- 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 (excluding technology-based emission exceedences due to emergencies); 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; 40 CFR Part 60.48; SIP §11-60-10, §11-60-16)<sup>1, 2</sup>

2. The permittee shall report (in writing) **within five (5) working days** any deviations from the 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 the implementation of a corrective action plan.

(Auth.: HAR §11-60.1-3, §11-60.1-5, §11-60.1-16, §11-60.1-90)

3. One Time Alternate Operating Scenario for Biomass Gasifier/Boiler System, Electrostatic Precipitator, Evaporative Cooler, or Diesel Engine Generator.

Should an alternate unit(s) be selected in the bidding and award process, the permittee shall submit to the Department of Health the information required pursuant to this Attachment, Special Condition No. C.7.

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

4. Gasifier Heat Input and Source Test for the Determination of Gasifier Startup CO Emissions
  - a. **At least sixty (60) days prior** to first fire of the gasifier/boiler system, the permittee shall submit to the Department of Health for approval, in writing, a protocol for determining the total wood chip heat input to the gasifiers. The protocol shall address the heat input to the gasifier/boiler systems for all operating conditions, including but not limited to, startup and shutdown of the gasifiers and boilers.
  - b. **At least sixty (60) days prior** to the source performance test required by Special Condition No. F.1.a., the permittee shall submit to the Department of Health for approval, in writing, the correlation between the ID draft fan speed and the total heat input to the two gasifier/boiler systems for the purpose of determining the total heat input of the two systems during the source test.

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

5. Gasifier/Boiler System Excess Emissions and Monitor Downtime Reporting
  - a. The permittee shall submit to the Department of Health and U.S. EPA Region 9 an **Excess Emissions and Monitoring Systems Performance Report** in accordance with 40 CFR Part 60, § 60.7(c). Excess emissions and monitor downtimes shall be reported for all periods of unit operation, including startup, shutdown, and malfunction. The **Excess Emissions and Monitoring Systems Performance Report** shall include the following:

- i. The magnitude of excess emissions computed in accordance with 40 CFR Part 60, §60.13(h), any conversion factors used, and the date and time of commencement and completion of each time period of excess emissions. The process operating time during the reporting period;
  - ii. Specific identification of each period of excess emissions that occurs during startups, shutdowns, and malfunctions of the affected facility. The nature and cause of any malfunction (if known), the corrective action taken or preventative measures adopted;
  - iii. The date and time identifying each period during which the continuous monitoring system was inoperative except for zero and span checks and the nature of the system repairs or adjustments; and
  - iv. When no excess emissions have occurred or the continuous monitoring systems have not been inoperative, repaired, or adjusted, such information shall be stated in the report.
- b. For the purposes of this permit, excess emissions and monitor downtimes shall be defined as follows:
- i. Excess Emissions  

Any opacity measurements, as measured by the transmissometer continuous monitoring system, exceeding the opacity limits set forth Special Condition No. C.6.a.
  - ii. Monitor Downtime  

A period of monitor downtime shall be:

    - 1) Any unit operating hour in which the data for any of the following parameters are either missing or invalid: wood chip feed rate, gasifier heat input, or boiler steam production;
    - 2) Any six (6) minute period in which sufficient data are not obtained to validate the opacity.
- c. The enclosed **Excess Emissions and Monitoring System Performance Summary Report** form or an equivalent form shall be submitted in conjunction with the **Excess Emissions and Monitoring Systems Performance Report** of Attachment II, Special Condition No. E.5.a. The reports shall be postmarked by the **30<sup>th</sup> day following the end of each semiannual calendar period.**

- d. Excess emissions exceeding the emission limit set forth in Attachment II, Special Condition No. C.6. indicated by the continuous opacity monitoring system shall be considered violations of the opacity limit.

(Auth.: HAR §11-60.1-3, §11-60.1-11, §11-60.1-90, §11-60.1-161; 40 CFR Part 60.7, 40 CFR Part 60.13, 40 CFR Part 60.47c; SIP §11-60-15)<sup>1, 2</sup>

6. Gasifier/Boiler System Performance Specification and Source Performance Test

The permittee shall notify the Department of Health, in writing, of the following events. Notification shall be **postmarked not less than 30 days prior** to the performance of the event:

- a. Conducting a performance specification test on the COMS. The testing date shall be in accordance with the performance test date identified in 40 CFR Part 60, Section 60.13; and
- b. Conducting a source performance test as required by Attachment II, Special Conditions Section F, Testing Requirements.

(Auth.: HAR §11-60.1-3, §11-60.1-5, §11-60.1-90, §11-60.1-161; 40 CFR 60.13; 40 CFR Part 60.47c)<sup>1</sup>

7. Gasifier/Boiler System Test Reporting

Source performance test reports shall be submitted **within 60 days after completion of the source performance test**.

(Auth.: HAR §11-60.1-3, §11-60.1-11, §11-60.1-90; 40 CFR §60.8)<sup>1</sup>

8. Gasifier/Boiler System Semi-Annual Monitoring Reports

The permittee shall submit **semi-annually** the following written reports to the Department of Health. The report shall be submitted **within sixty (60) days after** the end of each semiannual calendar period (January 1 – June 30 and July 1 – December 31), and shall include the following:

- a. Air Pollution Control
  - i. All periods of time (dates, times, durations, and actions taken) when the multicyclone fails to remain fully operational as specified in Attachment II, Special Condition No. C.3.b.;

- ii. All periods of time (dates, times, durations and actions taken) when the electrostatic precipitator fails to remain fully operational as specified in Attachment II, Special Condition No. C.3.c.; and
- iii. All periods of time (dates, times, durations and actions taken) when the electrostatic precipitator fails to maintain the minimum second stage voltage as specified in Attachment II, Special Condition No. C.3.e.

Explain for each incidence the reason why it occurred, the final outcome, and any actions taken to correct the situation. If no incidences of the above were experienced during the reporting period, the report shall so state.

b. Gasifier Heat Input

Wood chip heat input, in MMBtu, to the gasifier on a monthly and twelve (12) month rolling basis. Wood chip heat input shall include all periods of operation, including but not limited to, startup and shutdown of the gasifiers and boilers.

c. Nitrogen Oxide Emissions

- i. The total quantity of NO<sub>x</sub> emitted on a monthly basis in tons; and
- ii. The total quantity of NO<sub>x</sub> emitted on a rolling twelve (12) month basis in tons.

d. Fuel Certification

Certification that the fuel fired in the gasifier/boiler systems meets the requirements of Attachment II, Special Condition No. C.4.

e. Malfunction of Gasifier/Boiler Systems, Multicyclones, and Electrostatic Precipitator

Date, time, description, and duration of any malfunctions in the operation of the gasifier/boiler systems, multicyclones, electrostatic precipitator, and continuous monitoring system.

Explain for each incidence the reason why it occurred, the final outcome, and any actions taken to correct the situation. If no incidences of the above were experienced during the reporting period, the report shall so state.

The enclosed **Monitoring Report Form: Gasifier/Boiler System** or equivalent form shall be used.

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

9. Diesel Engine Generator Semi-Annual Monitoring Reports

The permittee shall submit **semi-annually** the following written reports to the Department of Health. 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 include the following:

- a. Exceedences of the eight (8) hour per day operating limit and exceedance of the limit on the total hours operated on a rolling twelve (12) month basis. Each exceedance of the limit specified in Attachment II, Special Condition No. C.10.a. shall be reported along with the total hours operated on a rolling twelve (12) month basis. The report shall provide:
  - i. All periods of time (date, time, and duration) when the diesel engine generator was operated for more than eight (8) hour per day;
  - ii. The report shall so state if no exceedances of the eight (8) hour per day limit have occurred; and
  - iii. Total hours of operation for each month, and the amount of hours operated on a rolling twelve (12) month basis. The enclosed **Monitoring Report Form: Diesel Engine Generator** or equivalent form shall be used.
- b. Certification on the types of fuel fired in the diesel engine generator and certification that the sulfur content of all fuels fired in the diesel engine generator did not exceed 0.05% by weight, the enclosed **Monitoring Report Form: Diesel Engine Generator** or equivalent form shall be used.
- c. Any opacity exceedences as determined by the required V.E. monitoring. Each exceedance reported shall include the date, six (6) minute average opacity reading, possible reason for exceedance, duration of exceedance, and corrective actions taken. If there were no exceedances, the permittee shall submit in writing a statement indicating that for the diesel engine generator there were no exceedances for that semi-annual period.

The enclosed **Monitoring Report Form: Opacity Exceedences** or an equivalent form shall be used.

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

#### 10. Compliance Certification

During the permit term, the permittee shall submit at least **annually** to the Department of Health 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; and
- f. Any additional information as required by the Department of Health, including information to determine compliance.

The compliance certification shall be submitted within **ninety (90) days after** the end of each calendar year and shall be signed and dated by a responsible official.

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

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

#### 11. Annual Emissions

As required by Attachment IV and in conjunction with the requirements of Attachment III, Annual Fee Requirements, the permittee shall submit **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 enclosed **Annual Emissions Report Form: Gasifier/Boiler Systems** and **Annual Emissions Report Form: Diesel Engine Generator** shall be used for reporting.

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

(Auth.: HAR §11-60.1-3, §11-60.1-5, §11-60.1-90, §11-60.1-114)

**Section F. Testing Requirements**

1. Performance Testing

- a. **Within sixty (60) days after** achieving the maximum production rate at which the gasifier/boiler systems will be operated, but **not later than one-hundred eighty (180) days after** the initial startup of the gasifier/boiler systems, the permittee shall conduct, or cause to be conducted, performance tests on the gasifier/boiler systems to determine the emission rate of CO for the purpose of quantifying CO the emission rate from the operation of the two gasifier/boiler systems during the gasifier startup period.
- b. **Within sixty (60) days after** achieving the maximum production rate at which the gasifier/boiler systems will be operated, but **not later than one-hundred eighty (180) days after** the initial startup of the gasifier/boiler systems, and annually thereafter, the permittee shall conduct, or cause to be conducted, performance tests on the gasifier/boiler systems to determine the emission rates of NO<sub>x</sub> (as NO<sub>2</sub>), CO, PM, and opacity of visible emissions for the purpose of determining compliance with the emission limits provided for under Attachment II, Special Condition No. C.5.a. and C.5.b.

(Auth.: HAR §11-60.1-3, §11-60.1-5, §11-60.1-11, §11-60.1-90, §11-60.1-161; 40 CFR §60.8; SIP §11-60.6)<sup>1,2</sup>

2. Performance Test Methods

- a. Performance tests for the emissions of NO<sub>x</sub> (as NO<sub>2</sub>), CO, PM, and opacity of visible emissions shall be conducted and the results reported in accordance with test methods set forth in 40 CFR, Part 60, Appendix A, and 40 CFR, Part 60, Section 60.8. The following test methods, or EPA approved equivalent methods shall be used:
  - i. Performance tests for CO emissions shall be conducted using EPA Methods 1-4 and 10;
  - ii. Performance tests for NO<sub>x</sub> emissions shall be conducted using EPA Methods 1-4 and Method 7 or 19;
  - iii. Performance tests for PM shall be conducted in accordance with 40 CFR §60.45c. PM emissions shall be reported as follows:
    - 1) Front half (filter and probe); and
    - 2) 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. All rinses shall be included in the analysis for back half.

- iv. During the initial performance test, compliance with the opacity standard of Attachment II, Special Condition No. C.6. shall be determined in accordance with 40 CFR § 60.45c(a)(8). The permittee shall record COMS monitoring data produced during the initial performance test and shall furnish the Department of Health a written report of the monitoring results along with the Method 9 and 40 CFR § 60.8 performance test results; and
  - v. During the annual performance tests, compliance with the opacity standard of Attachment II, Special Condition No. C.6. shall be determined with COMS data collection in accordance with 40 CFR § 60.11(e)(5).
- b. The performance test for CO, as required by Special Condition No. F.1.a. shall be conducted over the duration of gasifier startup and shall be performed during a simultaneous startup of the two systems. Test results shall be reported in ppm @ 3% O<sub>2</sub> and lbs/hr averaged over the duration of gasifier startup. The reported lb/hr emission rate shall be determined from the total heat input to the two gasifiers over the startup period. The permittee may assume an average heat input rate of 50 MMBtu/hr to each gasifier over the startup period. Alternatively, the permittee may use a correlation between the induced draft fan speed and the heat input to each gasifier, developed by the gasifier vendor and approved by the Department, to determine the actual heat input during the testing startup period. The correlation must receive written approval from the Department of Health prior to being used to determine the total heat input to the two gasifiers.
- c. Performance tests for NO<sub>x</sub>, CO, and PM, as required by Special Condition No. F.1.b., shall consist of three (3) separate runs using the applicable test method. For the purpose of determining compliance with the permit requirements, the arithmetic mean of the results from the three (3) runs shall apply. For each test run, the following operating parameters shall be recorded and reported:
- i. Wood chip fuel feed rate measured in tons per hour;
  - ii. Wood chip heat input to the gasifier in MMBtu per hour;
  - iii. Boiler steam flow rate in pounds per hour; and
  - iv. Minimum second stage voltage reading in kV.
- d. 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 of Health before the test.

(Auth.: HAR §11-60.1-3, §11-60.1-5, §11-60.1-11, §11-60.1-90, §11-60.1-161; 40 CFR §60.8; SIP §11-60.6)<sup>1, 2</sup>

3. A minimum second stage voltage shall be established during the initial performance test of the gasifier/boiler system for monitoring the operating condition of the electrostatic precipitator to ensure adequate particulate matter control. The minimum second stage voltage shall be identified in the Test Report of Attachment II, Special Condition No. F.5.

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

4. Test Plan

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

(Auth.: HAR §11-60.1-5, §11-60.1-11, 11-60.1-90, §11-60.1-161; 40 CFR 60.8; SIP §11-60-15)<sup>1,2</sup>

5. Test Report

**Within sixty (60) days after** completion of the performance test, the permittee shall submit to the Department of Health and U.S. EPA Region 9 the test report which shall include the operating conditions of the gasifier/boiler systems at the time of the test, the summarized test results, comparative results with the permit emission limits, and other pertinent field and laboratory data.

(Auth.: HAR §11-60.1-11, §11-60.1-90; 40 CFR §60.8; SIP §11-60-15)<sup>1,2</sup>

6. Test Expense and Monitoring

The permittee shall provide sampling and testing facilities at its own expense. All performance tests may be monitored by the Department of Health.

(Auth.: HAR §11-60.1-5, §11-60.1-11, §11-60.1-90; SIP §11-60-15)<sup>2</sup>

7. Test Waiver

Upon written request and justification, the Department of Health may waive the requirement for, or a portion of, a specific source 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 §11-60.1-11, §11-60.1-90)

**Section G. Agency Notification**

Any document (including reports) that is required to be submitted by this covered source permit shall be done in accordance with Attachment I, Standard Condition 28.

(Auth.: HAR §11-60.1-4, §11-60.1-90)

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<sup>1</sup> 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.

<sup>2</sup> 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  
COVERED SOURCE PERMIT NO. 0650-01-C**

**Issuance Date:**

**Expiration Date:**

In addition to the Standard Conditions of the Covered Source Permit, 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 visible emissions, 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 of Health 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 of Health 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 of Health 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 of Health 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:

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; and
6. Any additional information as required by the Department of Health including information to determine compliance.

The compliance certification shall be submitted **within ninety (90) 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 of Health determines that reasonable justification exists for the extension.

In lieu of addressing each emission unit as specified in *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)

CSP No. 0650-01-C  
Attachment II-INSIG  
Page 3 of 3  
Issuance Date:  
Expiration Date:

**PROPOSED**

**Section E. Agency Notification**

Any document (including reports) required to be submitted by this Covered Source Permit 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  
COVERED SOURCE PERMIT NO. 0650-01-C**

**Issuance Date:**

**Expiration Date:**

The following requirements for the submittal of annual fees are established pursuant to Hawaii Administrative Rules (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 **sixty (60) 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 Hawaii Administrative Rules, 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 of Health.
4. The annual fees and the emission data shall be mailed to:

**Clean Air Branch  
Environmental Management Division  
Hawaii Department of Health  
P. O. Box 3378  
Honolulu, HI 96801-3378**

**ATTACHMENT IV: ANNUAL EMISSIONS REPORTING REQUIREMENTS  
COVERED SOURCE PERMIT NO. 0650-01-C**

**Issuance Date:**

**Expiration 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.

1. Complete the attached form(s):

Annual Emission Report Form: Gasifier/Boiler Systems  
Annual Emission Report Form: Diesel Engine Generator

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

**Clean Air Branch  
Environmental Management Division  
Hawaii Department of Health  
P. O. Box 3378  
Honolulu, HI 96801-3378**

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 of Health upon request.
4. Any information submitted to the Department of Health 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.

**COMPLIANCE CERTIFICATION FORM  
COVERED SOURCE PERMIT NO. 0650-01-C  
PAGE 1 OF \_\_\_\_**

**Issuance Date:** \_\_\_\_\_

**Expiration 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 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 Hawaii Administrative Rules, Title 11, Chapter 60.1, Air Pollution Control, and any permit issued thereof.

**COMPLIANCE CERTIFICATION FORM  
COVERED SOURCE PERMIT NO. 0650-01-C  
(CONTINUED, PAGE 2 OF \_\_\_)**

**Issuance Date:**

**Expiration 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**

|   |  |   |
|---|--|---|
| <u>Permit term/condition</u><br>All standard conditions | <u>Equipment(s)</u><br>All Equipment(s) listed in the permit | <u>Compliance</u><br>Continuous<br>Intermittent |
|---|--|---|

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

|  |  |   |
|--|--|---|
| <u>Permit term/condition</u><br>All monitoring conditions    | <u>Equipment(s)</u><br>All Equipment(s) listed in the permit | <u>Compliance</u><br>Continuous<br>Intermittent |
| <u>Permit term/condition</u><br>All recordkeeping conditions | <u>Equipment(s)</u><br>All Equipment(s) listed in the permit | <u>Compliance</u><br>Continuous<br>Intermittent |
| <u>Permit term/condition</u><br>All reporting conditions     | <u>Equipment(s)</u><br>All Equipment(s) listed in the permit | <u>Compliance</u><br>Continuous<br>Intermittent |
| <u>Permit term/condition</u><br>All testing conditions       | <u>Equipment(s)</u><br>All Equipment(s) listed in the permit | <u>Compliance</u><br>Continuous<br>Intermittent |
| <u>Permit term/condition</u><br>All INSIG conditions         | <u>Equipment(s)</u><br>All Equipment(s) listed in the permit | <u>Compliance</u><br>Continuous<br>Intermittent |

**PROPOSED**

**COMPLIANCE CERTIFICATION FORM  
COVERED SOURCE PERMIT NO. 0650-01-C  
(CONTINUED, PAGE \_\_\_\_ OF \_\_\_\_)**

**Issuance Date:**

**Expiration 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.

| <u>Permit term/condition</u> | <u>Equipment(s)</u> | <u>Method</u>  | <u>Compliance</u>          |
|------------------------------|---------------------|--|----------------------------|
|                              |                     | monitoring<br>recordkeeping<br>reporting<br>testing<br>none of the above | Continuous<br>Intermittent |
|                              |                     | monitoring<br>recordkeeping<br>reporting<br>testing<br>none of the above | Continuous<br>Intermittent |
|                              |                     | monitoring<br>recordkeeping<br>reporting<br>testing<br>none of the above | Continuous<br>Intermittent |
|                              |                     | monitoring<br>recordkeeping<br>reporting<br>testing<br>none of the above | Continuous<br>Intermittent |
|                              |                     | monitoring<br>recordkeeping<br>reporting<br>testing<br>none of the above | Continuous<br>Intermittent |
|                              |                     | monitoring<br>recordkeeping<br>reporting<br>testing<br>none of the above | Continuous<br>Intermittent |
|                              |                     | monitoring<br>recordkeeping<br>reporting<br>testing<br>none of the above | Continuous<br>Intermittent |

**(Make Additional Copies if Needed)**

**COMPLIANCE CERTIFICATION FORM  
COVERED SOURCE PERMIT NO. 0650-01-C  
(CONTINUED, PAGE \_\_\_ OF \_\_\_)**

**Issuance Date:**

**Expiration Date:**

**D. Deviations**

| <u>Permit Term/<br/>Condition</u> | <u>Equipment(s) / Brief Summary of Deviation</u> | <u>Deviation Period<br/>time (am/pm) &amp; date<br/>(mo/day/yr)</u> | <u>Date of Written<br/>Deviation Report to<br/>DOH<br/>(mo/day/yr)</u> |
|-----------------------------------|--|---|--|
|                                   |  | Beginning:<br><br>Ending:   |  |

**(Make Additional Copies if Needed)**

EXCESS EMISSION AND MONITORING SYSTEM  
PERFORMANCE SUMMARY REPORT  
COVERED SOURCE PERMIT NO. 0650-01-C  
PAGE 1 OF 2

Issuance Date:

Expiration 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)

Company name: \_\_\_\_\_

Facility name: \_\_\_\_\_

Equipment location: \_\_\_\_\_

Equipment description: \_\_\_\_\_

Serial/ID Number: \_\_\_\_\_

Pollutant Monitored: Opacity

From: Date: \_\_\_\_\_ Time: \_\_\_\_\_

To: Date: \_\_\_\_\_ Time: \_\_\_\_\_

Emission Limitation: \_\_\_\_\_

Date of Last CMS Certification/Audit: \_\_\_\_\_

Total Source Operating Time: \_\_\_\_\_

EMISSION DATA SUMMARY

1. Duration (Hours) of Excess Emissions in Reporting Period due to:
  - a. Startup/Shutdown..... \_\_\_\_\_
  - b. Cleaning/Soot Blowdown..... \_\_\_\_\_
  - c. Control Equipment Failure..... \_\_\_\_\_
  - d. Process Problems..... \_\_\_\_\_
  - e. Other Known Causes..... \_\_\_\_\_
  - f. Unknown Causes..... \_\_\_\_\_
  - g. Fuel Problems..... \_\_\_\_\_
- Number of incidents of excess emissions..... \_\_\_\_\_
2. Total Duration of Excess Emissions..... \_\_\_\_\_
3. Total Duration of Excess Emissions..... \_\_\_\_\_  
(% of Total Source Operating Time)

**EXCESS EMISSION AND MONITORING SYSTEM  
PERFORMANCE SUMMARY REPORT  
COVERED SOURCE PERMIT NO. 0650-01-C  
(PAGE 2 OF 2)**

**Issuance Date:** \_\_\_\_\_

**Expiration Date:** \_\_\_\_\_

(Make Copies for Future Use)

COMS PERFORMANCE SUMMARY

- 1. CMS Downtime (Hours) in Reporting Period Due to:
  - a. Monitor Equipment Malfunctions..... \_\_\_\_\_
  - b. Non-Monitor Equipment Malfunctions..... \_\_\_\_\_
  - c. Quality Assurance Calibration..... \_\_\_\_\_
  - d. Other Known Causes..... \_\_\_\_\_
  - e. Unknown Causes..... \_\_\_\_\_
- Number of incidents of monitor downtime..... \_\_\_\_\_
- 2. Total CMS Downtime..... \_\_\_\_\_
- 3. Total CMS Downtime..... \_\_\_\_\_  
(% of Total Source Operating Time)

**CERTIFICATION by Responsible Official**

**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): \_\_\_\_\_

**ANNUAL EMISSIONS REPORT FORM  
GASIFIER/BOILER SYSTEMS  
COVERED SOURCE PERMIT NO. 0650-01-C**

**Issuance Date:** \_\_\_\_\_

**Expiration 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: \_\_\_\_\_

Equipment description: \_\_\_\_\_

Serial/ID Number: \_\_\_\_\_

**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): \_\_\_\_\_

For the reporting period:

**1. Gasifier/Boiler Systems**

|  |       |
|--|-------|
| Total wood chip heat input to the two gasifiers <sup>a</sup> (MMBtu/year):       | _____ |
| Total quantity of wood chips fired by the two gasifier/boiler systems (tons/yr): | _____ |
| Total quantity of steam produced by the two boilers (lbs/yr):                    | _____ |
| Total combined number of startups for the two gasifier/boiler systems:           | _____ |

<sup>a</sup> Total wood chip heat input shall include all operating conditions, including but not limited to, startup and shutdown of the gasifiers and boilers.

**2. Evaporative Cooler**

|   |       |
|---|-------|
| Total water flow through the system (gallons/yr): | _____ |
|---|-------|

**ANNUAL EMISSIONS REPORT FORM  
DIESEL ENGINE GENERATOR  
COVERED SOURCE PERMIT NO. 0650-01-C**

**Issuance Date:** \_\_\_\_\_

**Expiration 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: \_\_\_\_\_

Equipment description: \_\_\_\_\_

Serial/ID Number: \_\_\_\_\_

**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): \_\_\_\_\_

For the reporting period:

Diesel Engine Generator

|   |  |
|---|--|
| Total quantity of fuel fired in the diesel engine generator (gallons/yr): |  |
| Total number of hours the diesel engine generator operated (hours/yr):    |  |
| Type of fuel fired in the diesel engine generator:                        |  |
| Maximum fuel sulfur content (% by weight):                                |  |

**MONITORING REPORT FORM  
GASIFIER/BOILER SYSTEMS  
COVERED SOURCE PERMIT NO. 0650-01-C  
PAGE 1 OF 6**

**Issuance Date:**

**Expiration 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: \_\_\_\_\_

Equipment description: \_\_\_\_\_

Serial/ID Number: \_\_\_\_\_

**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): \_\_\_\_\_

For the reporting period:

**1. Total Gasifier Wood Chip Heat Input to the Two Gasifier/Boiler Systems**

| Month     | Total Gasifier Wood Chip Heat Input to the Two Systems <sup>a</sup> (MMBtu/month) | Total Gasifier Wood Chip Heat Input to the Two Systems (MMBtu/rolling twelve (12) month period) |
|-----------|---|---|
| January   |   |   |
| February  |   |   |
| March     |   |   |
| April     |   |   |
| May       |   |   |
| June      |   |   |
| July      |   |   |
| August    |   |   |
| September |   |   |
| October   |   |   |
| November  |   |   |
| December  |   |   |

<sup>a</sup> Total wood chip heat input shall include all operating conditions, including but not limited to, startup and shutdown of the gasifiers and boilers.

**MONITORING REPORT FORM  
GASIFIER/BOILER SYSTEMS  
COVERED SOURCE PERMIT NO. 0650-01-C  
PAGE 2 OF 6**

**Issuance Date:**

**Expiration 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)

2. Air Pollution Controls

Provide dates, times, and durations when the air pollution control(s) was not operated as specified in Attachment II, Special Condition No. C.3.b. and C.3.c.

| Date and Time | Indicate if Startup, Shutdown, or Other | Specify Air Pollution Control Out of Compliance (multicyclone and/or ESP) | Duration Out of Compliance (hours and minutes) | Reason for Noncompliance/Final Outcome/Corrective Actions Taken |
|---------------|---|---|--|---|
|               |   |   |  |   |
|               |   |   |  |   |
|               |   |   |  |   |
|               |   |   |  |   |
|               |   |   |  |   |

Indicate in the table above if there were no such incidences during the reporting period.

**MONITORING REPORT FORM  
GASIFIER/BOILER SYSTEMS  
COVERED SOURCE PERMIT NO. 0650-01-C  
PAGE 3 OF 6**

**Issuance Date:**

**Expiration 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)

- 3. Second Stage Voltage Below the Minimum Voltage  
(Noncompliance with Attachment II, Special Condition No. C.3.e. (minimum second stage voltage) shall only be reported for the periods following the initial performance test establishing the minimum second stage voltage)

| Date | Second Stage Voltage | Duration Out of Compliance (hours and minutes) | Reason for Noncompliance/Final Outcome/Corrective Actions Taken |
|------|----------------------|--|---|
|      |                      |  |   |
|      |                      |  |   |
|      |                      |  |   |
|      |                      |  |   |
|      |                      |  |   |

Indicate in the table above if there were no such incidences during the reporting period.

**MONITORING REPORT FORM  
GASIFIER/BOILER SYSTEMS  
COVERED SOURCE PERMIT NO. 0650-01-C  
PAGE 4 OF 6**

**Issuance Date:**

**Expiration 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)

**4. Fuel Certification**

|   |   |
|---|---|
| Type of wood fired in the two Gasifiers | If type of wood indicated is wood other than albizia or eucalyptus, indicate whether or not approval was received from the Department of Health prior to its introduction to the gasifiers (yes/no) |
|   |   |
|   |   |
|   |   |
|   |   |
|   |   |

Indicate noncompliance with Attachment II, Special Condition No. C.4.b. (The wood chips shall be untreated and uncontaminated by paint, oils, salts, pressure treated material, glues, preservatives, added chemicals, or similar foreign substances. Use of construction demolition debris of any type as wood fuel is explicitly prohibited.)

| Date | Description of Wood Treatment, Contamination, or whether Construction Debris was used in the Gasifier | Quantity Fired (tons) |
|------|---|-----------------------|
|      |   |                       |
|      |   |                       |
|      |   |                       |
|      |   |                       |

Indicate in the table above if there were no such incidences during the reporting period.

**MONITORING REPORT FORM  
GASIFIER/BOILER SYSTEMS  
COVERED SOURCE PERMIT NO. 0650-01-C  
PAGE 5 OF 6**

**Issuance Date:**

**Expiration 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)

**5. Total NO<sub>x</sub> Emissions from the Gasifier/Boiler Systems**

| Month     | Total NO <sub>x</sub> Emissions from the Gasifier/Boiler Systems (tons/month) | Total NO <sub>x</sub> Emissions from the Gasifier/Boiler Systems (tons/rolling twelve (12) month period) |
|-----------|---|--|
| January   |   |  |
| February  |   |  |
| March     |   |  |
| April     |   |  |
| May       |   |  |
| June      |   |  |
| July      |   |  |
| August    |   |  |
| September |   |  |
| October   |   |  |
| November  |   |  |
| December  |   |  |

**MONITORING REPORT FORM  
GASIFIER/BOILER SYSTEMS  
COVERED SOURCE PERMIT NO. 0650-01-C  
PAGE 6 OF 6**

**Issuance Date:**

**Expiration 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:

6. Malfunction of Gasifier/Boiler Systems, Multicyclones, and Electrostatic Precipitator

Date, time, description, and duration of any malfunctions in the operation of the gasifier/boiler systems, multicyclones, electrostatic precipitator, and continuous monitoring system.

| Date | Time | Duration<br>(hours and<br>minutes) | Description |
|------|------|------------------------------------|-------------|
|      |      |                                    |             |
|      |      |                                    |             |
|      |      |                                    |             |
|      |      |                                    |             |
|      |      |                                    |             |

Explain for each incidence the reason why it occurred, the final outcome, and any actions taken to correct the situation. If no incidences of the above were experienced during the reporting period, the report shall so state.

**MONITORING REPORT FORM  
DIESEL ENGINE GENERATOR 0650-01-C  
PAGE 1 OF 2**

**Issuance Date:** \_\_\_\_\_

**Expiration 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: \_\_\_\_\_

Equipment description: \_\_\_\_\_

Serial/ID Number: \_\_\_\_\_

**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): \_\_\_\_\_

For the reporting period:

- 1. Exceedance of Diesel Engine Generator eight (8) hour per day operating limit:

| Date of Exceedance | Operated From (time) | Operated To (time) | Total Hours Operated on this Date | Reason for Exceeding the Daily Limit |
|--------------------|----------------------|--------------------|-----------------------------------|--------------------------------------|
|                    |                      |                    |                                   |                                      |
|                    |                      |                    |                                   |                                      |
|                    |                      |                    |                                   |                                      |
|                    |                      |                    |                                   |                                      |
|                    |                      |                    |                                   |                                      |
|                    |                      |                    |                                   |                                      |

Indicate in the table above if there were no such incidences during the reporting period.

**MONITORING REPORT FORM  
DIESEL ENGINE GENERATOR 0650-01-C  
PAGE 2 OF 2**

**Issuance Date:**

**Expiration 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)

2. Operating hours for the Diesel Engine Generator:

| Month     | Total Hours Operated (hours/month) | Total Hours Operated (hours/rolling twelve (12) month period) |
|-----------|------------------------------------|---|
| January   |                                    |   |
| February  |                                    |   |
| March     |                                    |   |
| April     |                                    |   |
| May       |                                    |   |
| June      |                                    |   |
| July      |                                    |   |
| August    |                                    |   |
| September |                                    |   |
| October   |                                    |   |
| November  |                                    |   |
| December  |                                    |   |

3. Fuel Certification Diesel Engine Generator

| Type of Fuel Fired | % Sulfur Content by Weight |
|--------------------|----------------------------|
|                    |                            |
|                    |                            |
|                    |                            |

If not already on file at the Department of Health, provide the supplier's fuel specification sheet for the type of fuel indicated in the above table. The fuel specification sheet shall indicate the % sulfur content by weight.



**VISIBLE EMISSIONS FORM REQUIREMENTS  
STATE OF HAWAII  
COVERED SOURCE PERMIT NO. 0650-01-C**

**Issuance Date:**

**Expiration Date:**

The **Visible Emissions (V.E.) Form** shall be completed **monthly** (*each calendar month*) for each equipment subject to opacity limits in accordance with 40 CFR Part 60, Appendix A, Method 9 or use of a Ringelmann Chart as provided. At least **annually** (*calendar year*), V.E. observation shall be conducted for each equipment subject to opacity limits by a certified reader in accordance with Method 9. The V.E. Form shall be completed as follows:

1. Visible emissions observations shall take place during the day only and shall be compared to the Ringelmann Chart provided. The opacity shall be noted in five (5) percent increments (e.g., 25%).
2. Orient the sun within a 140 degree sector to your back. Provide a source layout sketch on the V.E. Form using the symbols as shown.
3. For V.E. observations of stacks, stand at least three (3) stack heights but not more than a quarter mile from the stack.
4. For V.E. observations of fugitive emissions from crushing and screening plants, stand at least 4.57 meters (15 feet) from the visible emissions source, but not more than a quarter mile from the visible emission 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 V.E. Forms for recordkeeping. These records shall be in a permanent form suitable for inspection, retained for a minimum of five 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 V.E. monitoring requirements for the month the performance test is performed.

**VISIBLE EMISSIONS FORM  
COVERED SOURCE PERMIT NO. 0650-01-C**

**Issuance Date:** \_\_\_\_\_ **Expiration Date:** \_\_\_\_\_

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

Company Name: \_\_\_\_\_

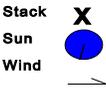
For stacks, describe equipment and fuel: \_\_\_\_\_

For fugitive emissions from crushers and screens, describe:

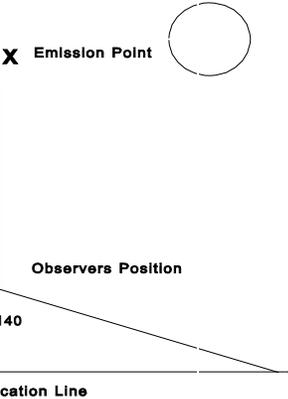
Fugitive emission point: \_\_\_\_\_

Plant Production (tons/hr): \_\_\_\_\_

(During observation)



Draw North Arrow



**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: \_\_\_\_\_

Method of observation (Ringelmann Chart or Method 9): \_\_\_\_\_

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

Observation Date and Start Time: \_\_\_\_\_

Method of observation (Ringelmann Chart or Method 9): \_\_\_\_\_

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