

[Issuance Date]

**CERTIFIED MAIL**  
**RETURN RECEIPT REQUESTED**  
(xxxx xxxx xxxx xxxx xxxx)

09-xxxE CAB  
File No. 0216-12

Mr. Timothy E. Steinberger, P.E.  
Director  
Department of Environmental Services  
City and County of Honolulu  
1000 Ulukouia Street, Suite 308  
Kapolei, Hawaii 96707

Dear Mr. Steinberger:

**Subject: Covered Source Permit (CSP) No. 0216-06-C**  
**Application for Renewal No. 0216-12**  
**In-Vessel Bioconversion Facility**  
**City and County of Honolulu, Department of Environmental Services**  
**Sand Island Wastewater Treatment Plant**  
**Located at: 1350 Sand Island Parkway, Honolulu, Oahu**  
**Date of Expiration: Issuance Date + 5 years**

The subject Covered Source Permit is issued in accordance with Hawaii Administrative Rules, Title 11, Chapter 60.1. This permit is for the renewal of the In-Vessel Bioconversion Facility at the Sand Island Wastewater Treatment Plant. The issuance of this permit is based on your application for renewal dated March 10, 2009. A receipt for the application fee of \$500.00 is enclosed.

The Covered Source Permit is issued subject to the conditions/requirements set forth in the following Attachments:

- Attachment I: Standard Conditions
- Attachment II: Special Conditions - In-Vessel Bioconversion Facility
- Attachment II - INSIG: Special Conditions - Insignificant Activities
- Attachment III: Annual Fee Requirements
- Attachment IV: Annual Emission Reporting Requirements

Mr. Timothy E. Steinberger, P.E.  
Issuance Date  
Page 2

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

Compliance Certification Form  
Monitoring Report Form: Fuel Certification  
Monitoring Report Form: H<sub>2</sub>S and NH<sub>3</sub> Monitoring  
Monitoring Report Form: Opacity Exceedances  
Visible Emissions Form Requirements with the following enclosures:  
    a. Visible Emissions Form  
    b. The Ringelmann Chart  
Annual Emissions Report Form: In-Vessel Bioconversion Facility

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

DL:ta

Enclosures

c: CAB Enforcement Section

**ATTACHMENT I: STANDARD CONDITIONS  
COVERED SOURCE PERMIT NO. 0216-06-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  
919 Ala Moana Boulevard, Room 203  
Honolulu, HI 96814**

**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)

---

<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. 0216-06-C  
IN-VESSEL BIOCONVERSION FACILITY**

**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 Covered Source Permit encompasses the following equipment and associated appurtenances:
  - a. Andritz DDS-40 Drying System (Exhaust Stack No. 1)
    - i. Combustion Furnace
      - 1) Heat capacity: 17.8 MMBtu/hr
      - 2) Burns scrubbed digester gas or diesel fuel no. 2 (secondary fuel), propane for pilot light
      - 3) Fuel consumption
        - a) Digester gas - 32,364 scf/hr
        - b) Diesel fuel no. 2 - 127 gph
    - ii. Rotary Drum Dryer
    - iii. Regenerative Thermal Oxidizer (RTO)
      - 1) Heat capacity: 2.0 MMBtu/hr
      - 2) Burns diesel fuel no. 2
      - 3) Fuel consumption: 14.3 gph
    - iv. Wet Venturi Scrubber
  - b. Building Air Chemical Odor Control Scrubber (routed through Exhaust Stack No. 1)
    - i. Capacity: 25,000 cfm
  - c. Two (2) Fugitive Dust Control Systems
    - i. Fugitive Dust Control System No. 1
      - 1) Collects dust from the mixer, crusher-to-mixer and screen-to-silo bucket elevators, pellet cooler, and pneumatic conveyor

- 2) Consists of MAC Pulse Jet Dust Filter (baghouse)
  - 3) Exhaust from baghouse routed through RTO then through Exhaust Stack No. 1
  - ii. Fugitive Dust Control System No. 2
    - 1) Collects dust from the pellet storage silos, pellet oiling and truck load
    - 2) Consists of MAC Pulse Jet Dust Filter (baghouse)
    - 3) Exhaust from baghouse routed through Building Air Chemical Odor Control Scrubber then through Exhaust Stack No. 1
  - d. Hot Water Boiler (Exhaust Stack No. 2)
    - i. Heat capacity: 2.5 MMBtu/hr
    - ii. Burns scrubbed digester gas or diesel fuel no. 2 (secondary fuel), propane for pilot light
    - iii. Fuel consumption
      - 1) Digester gas - 4,545 scf/hr
      - 2) Diesel fuel no. 2 - 17.9 gph
  - e. Waste Gas Burner (Exhaust Stack No. 3)
    - i. Capacity: 8000 scfh
    - ii. Burns unscrubbed digester gas, propane for pilot light
  - f. Gas Purifiers
  - g. Two (2) Pellet Storage Silos  
(Auth.: HAR §11-60.1-3)
2. The permittee shall permanently attach an identification tag or nameplate on each piece of equipment which identifies the model number, serial or I.D. number and manufacturer. The identification tag or nameplate shall be attached to the equipment in a conspicuous location.  
(Auth.: HAR §11-60.1-5)

**Section B. Applicable Federal Regulations**

1. The Andritz DDS-40 Drying System is subject to the provisions of the following sections of 40 CFR Part 61, National Emission Standards for Hazardous Air Pollutants:
  - a. Subpart A - General Provisions
  - b. Subpart E - National Emission Standard for Mercury

The permittee shall comply with all applicable requirements of the above items, including all emission limits and all notification, testing, monitoring, and reporting requirements.

(Auth.: HAR §11-60.1-3, §11-60.1-90, §11-60.1-180, 40 CFR §61.50)<sup>1</sup>

**Section C. Operational and Emissions Limitations**

1. The combustion furnace and the hot water boiler shall be fired only on diesel fuel no. 2 with a maximum sulfur content not to exceed 0.33% by weight or scrubbed digester gas with a maximum H<sub>2</sub>S concentration not to exceed 500 ppmv. The regenerative thermal oxidizer (RTO) shall be fired only on diesel fuel no. 2 with a maximum sulfur content not to exceed 0.33% by weight.

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

2. The waste gas burner shall be fired on unscrubbed digester gas with a maximum inlet H<sub>2</sub>S concentration not to exceed 5000 ppmv.

(Auth.: HAR §11-60.1-5, §11-60.1-90)

3. The pilot lights of the combustion furnace and hot water boiler shall be fired only on propane. The pilot light of the waste gas burner shall be fired on propane and/or digester gas.

(Auth.: HAR §11-60.1-5, §11-60.1-90)

4. The permittee shall operate the following air pollution devices continuously when the Andritz DDS-40 Drying System is in operation:
  - a. Building Air Chemical Odor Control Scrubber
  - b. Two (2) Fugitive Dust Control Systems

(Auth.: HAR §11-60.1-5, §11-60.1-90)

5. The maximum outlet concentrations of H<sub>2</sub>S and NH<sub>3</sub> from the exhaust stack of the Andritz DDS-40 Drying System (Exhaust Stack No. 1) shall be 0.61 ppmv and 50.3 ppmv, respectively.

(Auth.: HAR §11-60.1-5, §11-60.1-90)

6. The permittee shall not discharge or cause the discharge of emissions to the atmosphere from the exhaust stack of the Andritz DDS-40 Drying System (Exhaust Stack No. 1) to exceed 3200 grams of mercury per 24-hour period.

(Auth.: HAR §11-60.1-3, §11-60.1-90, §11-60.1-180, 40 CFR §61.52)<sup>1</sup>

7. Visible Emissions (V.E.)

For any six (6) minute averaging period, the exhaust stacks of the Andritz DDS-40 Drying System (Exhaust Stack No. 1), hot water boiler (Exhaust Stack No. 2) and waste gas burner (Exhaust Stack No. 3) shall not exhibit visible emissions of twenty (20) percent opacity or greater, except as follows: during start-up, shut-down, or equipment breakout, the exhaust stacks of the Andritz DDS-40 Drying System, hot water boiler and waste gas burner 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) minutes.

(Auth.: HAR §11-60.1-3, §11-60.1-32, §11-60.1-90)

8. Fugitive Dust Control Systems

- a. The baghouses shall be maintained in good operating condition with scheduled inspections and maintenance as recommended by the manufacturer.
- b. The permittee shall perform the following to ensure proper operation of the baghouses:
- i. The filters shall be checked for any tears, holes, abrasions and scuffs; and replaced as needed;
  - ii. The maximum pressure drop across the filters shall not exceed 8 inches of water; and
  - iii. The pulse jet cleaning system shall be maintained and operated at sufficient intervals to minimize particulate buildup or caking on the filters.

(Auth.: HAR §11-60.1-5, §11-60.1-90)

9. The finished product shall not be stored outside of the two (2) pellet storage silos.

(Auth.: HAR §11-60.1-5, §11-60.1-90)

10. Alternate Operating Scenario

- a. The foul air from the Wet Sludge Storage Tanks (WSST) shall be routed to the Building Air Chemical Odor Control Scrubber until the new Solids Odor Control System specified in Noncovered Source Permit No. 0216-05-N is constructed.
- b. During this period when the foul air from the Wet Sludge Storage Tanks (WSST) is routed to the Building Air Chemical Odor Control Scrubber, the maximum outlet concentration of H<sub>2</sub>S from the exhaust stack of the Andritz DDS-40 Drying System (Exhaust Stack No. 1) shall be 2.93 ppmv.
- c. After the new Solids Odor Control System is constructed and the foul air from the Wet Sludge Storage Tanks (WSST) is rerouted to it, the maximum outlet concentration of H<sub>2</sub>S from the exhaust stack of the Andritz DDS-40 Drying System shall be as specified in Attachment II, Special Condition No. C.5.

(Auth.: HAR §11-60-1-5, §11-60.1-90)

**Section D. Monitoring and Recordkeeping Requirements**

1. Fuel Requirements

The permittee shall operate and maintain non-resetting fuel meters to record the quantity of fuel fired (diesel fuel no. 2, scrubbed digester gas, unscrubbed digester gas) in the combustion furnace, regenerative thermal oxidizer (RTO), hot water boiler, and waste gas burner for the purposes of calculating annual emissions. Records shall be kept showing the type and quantity (gallons/yr, scf/yr) of fuel fired (diesel fuel no. 2, scrubbed digester gas, unscrubbed digester gas) and the sulfur content of the diesel fuel no. 2 (percent by weight) fired in the combustion furnace, regenerative thermal oxidizer (RTO), hot water boiler, and waste gas burner. A contract document or other appropriate documentation specifying the fuel sulfur content with certification by the supplier or producer of the diesel fuel no. 2 supplied shall be obtained and kept on file.

(Auth.: HAR §11-60.1-5, §11-60.1-90)

2. Hydrogen Sulfide (H<sub>2</sub>S) Monitoring

The H<sub>2</sub>S concentrations from the exhaust stack of the Andritz DDS-40 Drying System (Exhaust Stack No. 1), the scrubbed digester gas (after gas purifiers), and the unscrubbed digester gas (before waste gas burner) shall be monitored on a **monthly basis** to ensure the applicable concentration limits are not exceeded. These records shall be maintained and include, at a minimum, the following (as applicable):

- a. Method used to determine the H<sub>2</sub>S concentration (i.e., H<sub>2</sub>S meter or other equivalent method);
- b. Date and time of concentration reading or result; and
- c. H<sub>2</sub>S concentration in ppmv.

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

3. Ammonia (NH<sub>3</sub>) Monitoring.

The NH<sub>3</sub> concentrations from the exhaust stack of the Andritz DDS-40 Drying System (Exhaust Stack No. 1) shall be monitored on a **monthly basis** to ensure the applicable concentration limit is not exceeded. These records shall be maintained and include, at a minimum, the following (as applicable):

- a. Method used to determine the NH<sub>3</sub> concentration (i.e., NH<sub>3</sub> meter or other equivalent method);
- b. Date and time of concentration reading or result; and
- c. NH<sub>3</sub> concentration in ppmv.

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

4. Visible Emissions

- a. Except in those months where V.E. observations are conducted by a certified reader for the annual observations of the exhaust stacks of the Andritz DDS-40 Drying System (Exhaust Stack No. 1), hot water boiler (Exhaust Stack No. 2) and waste gas burner (Exhaust Stack No. 3), the permittee shall conduct **monthly** (calendar month) V.E. observations for the exhaust stacks of the Andritz DDS-40 Drying System, hot water boiler and waste gas burner in accordance with 40 CFR Part 60, Appendix A, Method 9 or by use of a Ringelmann Chart as provided. For each month, two (2) consecutive six (6) minute observations shall be taken at fifteen (15) second intervals. Records shall be completed and maintained in accordance with the **Visible Emissions Form Requirements**.
- b. The permittee shall conduct **annually** (*calendar year*), V.E. observations for the exhaust stacks of the Andritz DDS-40 Drying System (Exhaust Stack No. 1), hot water boiler (Exhaust Stack No. 2) and waste gas burner (Exhaust Stack No. 3) by a certified reader in accordance with 40 CFR Part 60, Appendix A, Method 9. For the annual observations, two (2) consecutive six (6) minute observations shall be taken at fifteen (15) second intervals. Records shall be completed and maintained in accordance with the **Visible Emissions Form Requirements**.
- c. Upon written request and justification by the permittee, the Department of Health may waive the requirement for the **annual** V.E. observation for the exhaust stacks of the Andritz DDS-40 Drying System (Exhaust Stack No. 1), hot water boiler (Exhaust Stack No. 2) and waste gas burner (Exhaust Stack No. 3). The waiver request is to be submitted prior to the required annual V.E. observations 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. observations.

(Auth.: HAR §11-60.1-3, §11-60.1-11, §11-60.1-32, §11-60.1-90)

5. Inspection, Maintenance and Repair Log

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

- a. The date of the inspection/maintenance/repair work, including replacement of filter bag(s) for the baghouses;
- b. A description of the findings or any maintenance or repair work performed;
- c. The name and title of 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)

6. All records, including supporting information, shall be true, accurate and maintained at the facility for at least five (5) years from the date of the monitoring samples, measurements, tests, reports, or application. Supporting information includes all calibration and maintenance records and copies of all reports required by the permit. These records shall be in a permanent form suitable for inspection and made available to the Department of Health or their representative upon request.

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

**Section E. Notification and Reporting Requirements**

1. Annual Emissions

As required by Attachment IV and in conjunction with the requirements of Attachment III, Annual Fee Requirements, the permittee shall submit **on an annual basis** 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 after the end of each calendar year**. The enclosed **Annual Emissions Form: In-Vessel Bioconversion Facility**, shall be used for reporting and shall be signed and dated by a responsible official.

Upon 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, §11-60.1-90, §11-60.1-114, SIP §11-60-15)<sup>2</sup>

2. Notification and reporting pertaining to the following events shall be done in accordance with Attachment I, Standard Condition Nos. 16, 17 and 24, respectively:
  - a. Intent to shut down air pollution control equipment for necessary scheduled maintenance;
  - b. Emissions of air pollutants in violation of HAR, Chapter 11-60.1 or this permit (excluding technology-based emission exceedance due to emergencies); and
  - c. Permanent discontinuance of construction, modification, relocation or operation of the facility covered by this permit.

(Auth.: HAR §11-60.1-8, §11-60.1-15, §11-60.1-16, §11-60.1-90; SIP §11-60-16)<sup>2</sup>

3. 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 preventative measures taken. Corrective actions may include a requirement for additional stack testing or more frequent monitoring, or could trigger implementation of a corrective action plan.

(Auth.: HAR §11-60.1-3, §11-60.1-16, §11-60.1-90; SIP §11-60-16)<sup>2</sup>

#### 4. 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 §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 be submitted **within ninety (90) days after the end of each calendar year**, and shall be signed and dated by a responsible official. 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.

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.

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

5. The permittee shall submit semiannually 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 to June 30 and July 1 to December 31), be signed and dated by a responsible official and shall include the following:
  - a. The maximum sulfur content (percent by weight) of the diesel fuel no. 2 fired in the combustion furnace, regenerative thermal oxidizer (RTO) and hot water boiler. The enclosed **Monitoring Report Form: Fuel Certification**, shall be used for reporting.
  - b. The H<sub>2</sub>S concentrations (ppmv) from the exhaust stack of the Andritz DDS-40 Drying System (Exhaust Stack No. 1), the scrubbed digester gas, and the unscrubbed digester gas. The enclosed **Monitoring Report Form: H<sub>2</sub>S and NH<sub>3</sub> Monitoring**, shall be used for reporting.
  - c. The NH<sub>3</sub> concentrations (ppmv) from the exhaust stack of the Andritz DDS-40 Drying System (Exhaust Stack No. 1). The enclosed **Monitoring Report Form: H<sub>2</sub>S and NH<sub>3</sub> Monitoring**, shall be used for reporting.
  - d. Any opacity exceedances 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 each equipment, there were no exceedances for that semi-annual period. The enclosed **Monitoring Report Form: Visible Emissions**, shall be used for reporting.
  - e. Deviations from permit requirements shall be clearly identified.

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

#### **Section F. Testing Requirements**

1. The permittee shall conduct or cause to be conducted a mercury emission source performance test on the exhaust stack of the Andritz DDS-40 Drying System (Exhaust Stack No. 1). Method 101A in Appendix B of 40 CFR Part 61 shall be used to test for mercury emissions as follows:
  - a. The initial source performance test shall be performed within **nintety (90) days** of startup.
  - b. The Department of Health shall be notified at least **thirty (30) days** prior to an emission test, so that he may at his option observe the test.
  - c. Samples shall be taken over such a period or periods as are necessary to determine accurately the maximum emissions which will occur in any 24-hour period. No changes shall be made in the operation which would potentially increase emissions

above the level determined by the most recent source test, until the new emission level has been estimated by calculation and the results reported to the Department of Health.

- d. All samples shall be analyzed and mercury emissions shall be determined **within thirty (30) days after the source test**. Each determination shall be reported to the U.S. EPA and the Department of Health by registered letter dispatched **within fifteen (15) calendar days following the date such a determination is completed**.
- e. The permittee shall conduct an annual source performance test if during the initial source performance test mercury emissions *exceed 1600 grams per 24-hour period*.

(Auth.: HAR §11-60.1-3, §11-60.1-11, §11-60.1-90, §11-60.1-180, 40 CFR §61.53, SIP §11-60-15)<sup>1,2</sup>

2. The mercury emission source performance tests shall be made at the expense of the permittee and shall be conducted at the maximum expected operating capacity of the source, or at other operating loads as may be specified by the Department of Health.

(Auth.: HAR §11-60.1-3, §11-60.1-11, §11-60.1-90, §11-60.1-180, 40 CFR §61.53, SIP §11-60-15)<sup>1,2</sup>

3. Each performance test shall consist of three (3) separate runs using the applicable test method(s). For the purpose of determining compliance with an applicable regulation, the arithmetic mean of the results from the three (3) runs shall apply.

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

4. **At least thirty (30) days prior to the performance test**, the permittee shall submit a **Source Performance Test Plan** to the Department of Health that describes the test dates and duration, test locations, test methods, source operation and other parameters that may affect test results. Such a plan shall conform to U.S. EPA guidelines including quality assurance procedures. A test plan or quality assurance plan that does not have the approval of the Department of Health may be grounds to invalidate any test and require a retest.

(Auth.: HAR §11-60.1-3, §11-60.1-11, §11-60.1-90, 40 CFR §61.53; SIP §11-60-15)<sup>1,2</sup>

5. 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 tests.

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

6. **Within sixty (60) days after completion of the performance test**, the permittee shall submit to the Department of Health and U.S. EPA the test report which shall include all test data and results, and other pertinent field and laboratory data.

(Auth.: HAR §11-60.1-11, §11-60.1-90)

7. The Department of Health may waive the annual (if required) mercury emission source performance test upon written request by the permittee. Such a request would need to be justified on the grounds that prior tests had shown compliance by a wide margin, and that adequate means exist to show continuing compliance.

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

### **Section G. Agency Notifications**

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

(Auth.: HAR §11-60.1-4, §11-60.1-90)

---

<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  
COVERED SOURCE PERMIT NO. 0216-06-C  
INSIGNIFICANT ACTIVITIES**

**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 true, accurate and maintained for at least **five (5) years** from the date of any required monitoring, recordkeeping, testing, or reporting. These records shall be in a permanent form suitable for inspection and made available to the Department of Health or their 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 §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 be submitted **within ninety (90) days after the end of each calendar year**, and shall be signed and dated by a responsible official. 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; and
5. Any additional information as required by the Department of Health including information to determine compliance.

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

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

**Section E. Agency Notification**

Any document (including reports) required to be submitted by this 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)

## PROPOSED

### ATTACHMENT III: ANNUAL FEE REQUIREMENTS COVERED SOURCE PERMIT NO. 0216-06-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  
919 Ala Moana Boulevard, Room 203  
Honolulu, HI 96814**

**ATTACHMENT IV: ANNUAL EMISSIONS REPORTING REQUIREMENTS  
COVERED SOURCE PERMIT NO. 0216-06-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 Emissions Report Form: In-Vessel Bioconversion Facility**

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  
919 Ala Moana Boulevard, Room 203  
Honolulu, HI 96814**

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. 0216-06-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.

# PROPOSED

**COMPLIANCE CERTIFICATION FORM  
COVERED SOURCE PERMIT NO. 0216-06-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> All standard conditions	<u>Equipment(s)</u> All Equipment(s) listed in the permit	<u>Compliance</u> Continuous Intermittent
---	--	---

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

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

# PROPOSED

**COMPLIANCE CERTIFICATION FORM  
COVERED SOURCE PERMIT NO. 0216-06-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 recordkeeping reporting testing none of the above	Continuous Intermittent
		monitoring recordkeeping reporting testing none of the above	Continuous Intermittent
		monitoring recordkeeping reporting testing none of the above	Continuous Intermittent
		monitoring recordkeeping reporting testing none of the above	Continuous Intermittent
		monitoring recordkeeping reporting testing none of the above	Continuous Intermittent
		monitoring recordkeeping reporting testing none of the above	Continuous Intermittent
		monitoring recordkeeping reporting testing none of the above	Continuous Intermittent

**(Make Additional Copies if Needed)**

**COMPLIANCE CERTIFICATION FORM  
COVERED SOURCE PERMIT NO. 0216-06-C  
(CONTINUED, PAGE \_\_\_ OF \_\_\_)**

**Issuance Date:**

**Expiration Date:**

**D. Deviations**

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

**(Make Additional Copies if Needed)**

**PROPOSED**

**MONITORING REPORT FORM  
FUEL CERTIFICATION  
COVERED SOURCE PERMIT NO. 0216-06-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 following information semi-annually:

(Make Copies for Future Use)

For Period: \_\_\_\_\_ Date: \_\_\_\_\_

Facility Name: \_\_\_\_\_

Equipment Location: \_\_\_\_\_

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

Responsible Official (PRINT): \_\_\_\_\_

TITLE: \_\_\_\_\_

Responsible Official (Signature): \_\_\_\_\_

<b>Equipment</b>	<b>Type of Fuel Fired</b>	<b>Maximum Sulfur Content (Percent by weight)</b>
Combustion Furnace	Diesel Fuel No. 2	
Regenerative Thermal Oxidizer (RTO)	Diesel Fuel No. 2	
Hot Water Boiler	Diesel Fuel No. 2	

**PROPOSED**

**MONITORING REPORT FORM  
H<sub>2</sub>S AND NH<sub>3</sub> MONITORING  
COVERED SOURCE PERMIT NO. 0216-06-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 following information semi-annually:

(Make Copies for Future Use)

For Period: \_\_\_\_\_ Date: \_\_\_\_\_

Facility Name: \_\_\_\_\_

Equipment Location: \_\_\_\_\_

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

Responsible Official (PRINT): \_\_\_\_\_

TITLE: \_\_\_\_\_

Responsible Official (Signature): \_\_\_\_\_

<b>Equipment</b>	<b>H<sub>2</sub>S Concentration (ppmv)</b>	<b>NH<sub>3</sub> Concentration (ppmv)</b>
Exhaust Stack of the Andritz DDS-40 Drying System (Exhaust Stack No. 1)		
Scrubbed Digester Gas (after gas purifiers)		N/A
Unscrubbed Digester Gas (before waste gas burner)		N/A



**VISIBLE EMISSIONS FORM REQUIREMENTS  
STATE OF HAWAII  
COVERED SOURCE PERMIT NO. 0216-06-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.

# PROPOSED

<b>VISIBLE EMISSIONS FORM COVERED SOURCE PERMIT NO. 0216-06-C</b>	
<b>Issuance Date:</b> _____	<b>Expiration Date:</b> _____

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

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

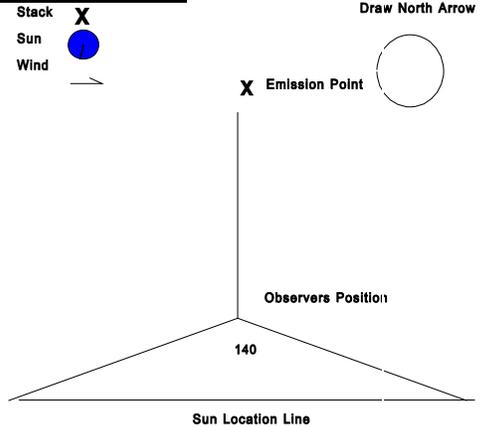
For stacks, describe equipment and fuel: \_\_\_\_\_

For fugitive emissions from crushers and screens, describe:

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

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

(During observation)



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

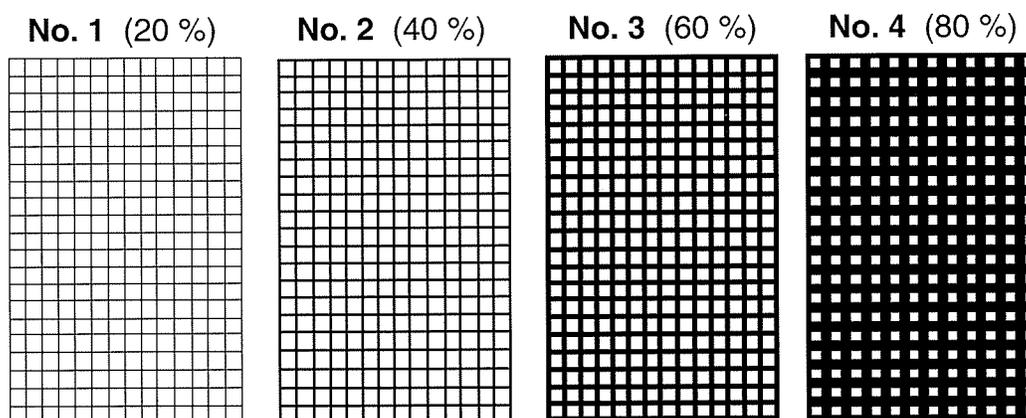
Method of observation (Ringelmann Chart or Method 9): \_\_\_\_\_

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

## The Ringelmann Chart

In the late 1800's in Paris, France, Professor Maximilian Ringelmann developed the **Ringelmann Chart** to measure the combustion efficiency of coal-fired boilers. The shade of the smoke plume shows how well a boiler is operating - the poorer its combustion efficiency, the more unburned carbon particles in the smoke and the darker the plume.

Professor Ringelmann's chart established four measured shades of gray between white, valued at zero, and black, at five. These specific shades of gray, Ringelmann No. 1 to Ringelmann No. 4, can be accurately reproduced by placing a grid of black lines of a given width and spacing on a white background. Viewed from a distance, the grid lines and background merge into the shades of gray, to be compared to the shade of the smoke plume.



Ringelmann Chart (not to scale)

## Regulating Visible Emissions

The Ringelmann Chart became one of the first tools used to measure visible emissions. Introduced into the United States in 1897, it was soon accepted as the standard measure of smoke density and was used by engineers for power plant testing and smokeless combustion studies. In 1910, the Chart was officially adopted as part of the Smoke Ordinance for Boston, Mass.

Many city, state, and federal regulations now set smoke density limits based on the Ringelmann Smoke Chart. Although not originally designed as a regulatory tool to control air pollution, it gives good practical results when used by well-trained observers.

**PROPOSED**

**ANNUAL EMISSIONS REPORT FORM  
IN-VESSEL BIOCONVERSION FACILITY  
COVERED SOURCE PERMIT NO. 0216-06-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: \_\_\_\_\_

Facility Name: \_\_\_\_\_

Equipment Location: \_\_\_\_\_

Equipment Description: \_\_\_\_\_

Serial/ID No.: \_\_\_\_\_

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

<b>Equipment</b>	<b>Fuel Usage - Digester Gas (scrubbed, unscrubbed) (scf/yr)</b>	<b>Fuel Usage - Diesel Fuel No. 2 (gal/yr)</b>
Combustion Furnace		
Regenerative Thermal Oxidizer (RTO)		
Hot Water Boiler		
Waste Gas Burner		