REFUSE 98036

LINDA LINGLE
GOVERNOR OF HAWAII

Div. Chief
Asst. Chief
Disp. Engr.
RC Admin
Adm. Asst.
H-POWER
Plan. Engr.
Recy. Coor.
STEVE

STATE OF HAWAII
DEPARTMENT OF HEALTH
P.O. Box 3378
HONOLULU, HAWAII 96801-3378

March 11, 2005

05-230E CAB
File No. 0489-01

Dr. Eric S. Takamura
Director
Environmental Services Department
City and County of Honolulu
1000 Uluohia Street, Suite 308
Kapolei, Hawaii 96707

DEPARTMENT OF ENVIRONMENTAL SVCS
05 MAR 17 P4:00

Dear Dr. Takamura:

Subject: Covered Source Permit (CSP) No. 0489-01-C
Application No. 0489-01
Waimanalo Gulch Municipal Solid Waste Landfill
Gas Collection and Control System
Located at: 92-460 Farrington Highway, Oahu
Date of Expiration: March 10, 2010

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 additional information submitted on December 15, 2000, July 25, 2001, August 19, 2003, and January 30, 2004. This Covered Source Permit is issued subject to the conditions/requirements set forth in the following Attachments:

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

The form(s) for submission are as follows:

Monitoring Report Form: Collection and Control System
Monitoring Report Form: Visible Emissions
Annual Emissions Report Form: Municipal Solid Waste Landfills
Supplemental Report Form: Modification/Reconstruction of MSW Landfill
Supplemental Report Form: Notification of Landfill Closure
Supplemental Report Form: Initial Compliance Report
Supplemental Report Form: Notification of Collection and Control Equipment Removal

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 Hawaii 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,

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

KK:lk

Enclosures

c: CAB Monitoring Section

ATTACHMENT I: STANDARD CONDITIONS
COVERED SOURCE PERMIT NO. 0489-01-C

Issuance Date: March 11, 2005 **Expiration Date: March 10, 2010**

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 wilfully defaced, altered, forged, counterfeited, or falsified.

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

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

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

4. A request for transfer from person to person shall be made on forms furnished by the Department 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 Regional Administrator for the U.S. Environmental Protection Agency (EPA).

   (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 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 Administrator 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)[2]

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 each excess emission;
    e. Cause and nature of each excess emission;
    f. Description of the steps taken to remedy the situation, prevent a recurrence, limit the excessive emissions, and assure that the malfunction or breakdown does not interfere with the attainment and maintenance of the National Ambient Air Quality Standards and state ambient air quality standards;
    g. Documentation that the equipment or process was at all times maintained and operated in a manner consistent with good practice for minimizing emissions; and
    h. A statement that the excess emissions are not part of a recurring pattern indicative of inadequate design, operation, or maintenance.

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

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

18. A copy of applicable correspondence or records submitted to the Department of Health shall be provided to the U.S. EPA Administrator.

    (Auth.: HAR §11-60.1-90)

19. 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)

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

    a. Construction shall be commenced within eighteen (18) months after the permit takes effect, shall not be discontinued for a period of eighteen (18) months or more, and shall be 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)

21. The Department of Health may extend the time periods specified in Standard Condition No. 20 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)

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

    (Auth.: HAR §11-60.1-90)

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

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

24. 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 assure compliance with this permit or applicable requirements of HAR, Chapter 11-60.1.

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

25. 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)[2]

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

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

27. 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)

28. 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 Regional Administrator once per year, or more frequently as set by any applicable requirement.

    (Auth.: HAR §11-60.1-90)

29. **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
State of Hawaii Department of Health
P.O. Box 3378
Honolulu, HI 96801-3378

Upon request, 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)

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

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

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

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

ATTACHMENT II: SPECIAL CONDITIONS
COVERED SOURCE PERMIT NO. 0489-01-C

Issuance Date: March 11, 2005 **Expiration Date: March 10, 2010**

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. Waimanalo Gulch Municipal Solid Waste Landfill; and

   b. Landfill Gas Collection and Control system for landfill consisting of enclosed flare, extraction wells, and associated equipment.

   (Auth: HAR §11-60.1-3,§11-60.1-90, §11-60.1-174; 40 CFR §60.1, §60.752)[1]

Section B. Definitions

For the purposes of this permit, the following definitions shall be used:

1. *Active collection system* means a gas collection system that uses gas mover equipment.

2. *Active landfill* means a landfill in which solid waste is being placed or a landfill that is planned to accept waste in the future.

3. *Bioreactor* means a MSW landfill or portion of a MSW landfill where any liquid other than leachate (leachate includes landfill gas condensate) is added in a controlled fashion into the waste mass (often in combination with recirculating leachate) to reach a minimum average moisture content of at least 40 percent by weight to accelerate or enhance the anaerobic (without oxygen) biodegradation of the waste.

4. *Closed landfill* means a landfill in which solid waste is no longer being placed, and in which no additional solid wastes will be placed without first filing a notification of modification as prescribed under 40 CFR §60.7(a)(4). Once a notification of modification has been filed, and additional solid waste is placed in the landfill, the landfill is no longer closed.

5. *Closure* means that point in time when a landfill becomes a closed landfill.

6. *Commercial solid waste* means all types of solid waste generated by stores, offices, restaurants, warehouses, and other non-manufacturing activities, excluding residential and industrial wastes.

7. *Controlled landfill* means any landfill at which collection and control systems are required under 40 CFR 60 subpart WWW as a result of the non-methane organic compounds emission rate. The landfill is considered controlled at the time a collection and control system design plan is submitted in compliance with 40 CFR §60.752(b)(2)(I).

8. *Design capacity* means the maximum amount of solid waste a landfill can accept, as indicated in terms of volume or mass in the most recent permit issued by the State, local, or Tribal agency responsible for regulating the landfill, plus any in-place waste not accounted for in the most recent permit. If the owner or operator chooses to convert the design capacity from volume to mass or from mass to volume to demonstrate its design capacity is less than 2.5 million megagrams or 2.5 million cubic meters, the calculation must include a site specific density, which must be recalculated annually.

9. *Deviation* means any instance in which an affected source subject to 40 CFR 60 subpart WWW, or an owner or operator of such a source:

    a. Fails to meet any requirement or obligation established by this subpart, including, but not limited to, any emissions limitation (including any operating limit) or work practice standard;

    b. Fails to meet any term or condition that is adopted to implement an applicable requirement in this subpart and that is included in the operating permit for any affected source required to obtain such a permit; or

    c. Fails to meet any emission limitation, (including any operating limit), or work practice standard in this subpart during Startup, Shutdown or Malfunction, regardless of whether or not such failure is permitted by this subpart.

10. *Disposal facility* means all contiguous land and structures, other appurtenances, and improvements on the land used for the disposal of solid waste.

11. *Emission rate cutoff* means the threshold annual emission rate to which a landfill compares its estimated emission rate to determine if control under the regulation is required.

12. *Emissions limitation* means any emission limit, opacity limit, operating limit, or visible emissions limit.

13. *Enclosed combustor* means an enclosed firebox which maintains a relatively constant limited peak temperature generally using a limited supply of combustion air. An enclosed flare is considered an enclosed combustor.

14. *EPA-approved State plan* means a State plan that EPA has approved based on the requirements in 40 CFR part 60, subpart B to implement and enforce 40 CFR part 60, subpart Cc. An approved State plan becomes effective on the date specified in the notice published in the Federal Register announcing EPA's approval.

15. *Federal plan* means the EPA plan to implement 40 CFR part 60, subpart Cc for existing MSW landfills located in States and Indian country where State plans or tribal plans are not currently in effect. On the effective date of an EPA-approved State or tribal plan, the Federal plan no longer applies. The Federal plan is found at 40 CFR part 62, subpart GGG.

16. *Flare* means an open combustor without enclosure or shroud.

17. *Gas mover equipment* means the equipment (i.e., fan, blower, compressor) used to transport landfill gas through the header system.

18. *Household waste* means any solid waste (including garbage, trash, and sanitary waste in septic tanks) derived from households (including, but not limited to, single and multiple residences, hotels and motels, bunkhouses, ranger stations, crew quarters, campgrounds, picnic grounds, and day-use recreation areas).

19. *Industrial solid waste* means solid waste generated by manufacturing or industrial processes that is not a hazardous waste regulated under Subtitle C of the Resource Conservation and Recovery Act, parts 264 and 265 of the Code of Federal Regulations, Title 40. Such waste may include, but is not limited to, waste resulting from the following manufacturing processes: electric power generation; fertilizer/agricultural chemicals; food and related products/by-products; inorganic chemicals; iron and steel manufacturing; leather and leather products; nonferrous metals manufacturing/foundries; organic chemicals; plastics and resins manufacturing; pulp and paper industry; rubber and miscellaneous plastic products; stone, glass, clay, and concrete products; textile manufacturing; transportation equipment; and water treatment. This term does not include mining waste or oil and gas waste.

20. *Interior well* means any well or similar collection component located inside the perimeter of the landfill waste. A perimeter well located outside the landfilled waste is not an interior well.

21. *Landfill* means an area of land or an excavation in which wastes are placed for permanent disposal, and that is not a land application unit, surface impoundment, injection well, or waste pile as those terms are defined under 40 CFR §257.2.

22. *Lateral expansion* means a horizontal expansion of the waste boundaries of an existing MSW landfill. A lateral expansion is not a modification unless it results in an increase in the design capacity of the landfill.

23. *Modification* means an increase in the permitted volume design capacity of the landfill by either horizontal or vertical expansion based on its permitted design capacity as of May 30, 1991. Modification does not occur until the owner or operator commences construction on the horizontal or vertical expansion.

24. *Municipal solid waste landfill* or *MSW landfill* means an entire disposal facility in a contiguous geographical space where household waste is placed in or on land. An MSW landfill may also receive other types of RCRA Subtitle D wastes (40 CFR §257.2) such as commercial solid waste, nonhazardous sludge, conditionally exempt small quantity generator waste, and industrial solid waste. Portions of an MSW landfill may be separated by access roads. An MSW landfill may be publicly or privately owned. An MSW landfill may be a new MSW landfill, an existing MSW landfill, or a lateral expansion.

25. *Municipal solid waste landfill emissions* or *MSW landfill emissions* means gas generated by the decomposition of organic waste deposited in an MSW landfill or derived from the evolution of organic compounds in the waste.

26. *NMOC* means non-methane organic compounds, as measured according to the provisions of 40 CFR §60.754.

27. *Nondegradable waste* means any waste that does not decompose through chemical breakdown or microbiological activity. Examples are, but are not limited to, concrete, municipal waste combustor ash, and metals.

28. *Passive collection system* means a gas collection system that solely uses positive pressure within the landfill to move the gas rather than using gas mover equipment.

29. *Sludge* means any solid, semisolid, or liquid waste generated from a municipal, commercial, or industrial wastewater treatment plant, water supply treatment plant, or air pollution control facility, exclusive of the treated effluent from a wastewater treatment plant.

30. *Solid waste* means any garbage, sludge from a wastewater treatment plant, water supply treatment plant, or air pollution control facility and other discarded material, including solid, liquid, semisolid, or contained gaseous material resulting from industrial, commercial, mining, and agricultural operations, and from community activities, but does not include solid or dissolved material in domestic sewage, or solid or dissolved materials in irrigation return flows or industrial discharges that are point sources subject to permits under 33 U.S.C. 1342, or source, special nuclear, or by-product material as defined by the Atomic Energy Act of 1954, as amended (42 U.S.C 2011 et seq.).

31. *Sufficient density* means any number, spacing, and combination of collection system components, including vertical wells, horizontal collectors, and surface collectors, necessary to maintain emission and migration control as determined by measures of performance set forth in 40 CFR 60 subpart WWW.

32. *Sufficient extraction rate* means a rate sufficient to maintain a negative pressure at all wellheads in the collection system without causing air infiltration, including any wellheads connected to the system as a result of expansion or excess surface emissions, for the life of the blower.

33. *Tribal plan* means a plan submitted by a tribal authority pursuant to 40 CFR parts 9, 35, 49, 50, and 81 to implement and enforce 40 CFR part 60, subpart Cc.

34. *Work practice standard* means any design, equipment, work practice, or operational standard, or combination thereof, that is promulgated pursuant to section 112(h) of the Clean Air Act.

(Auth: HAR §11-60.1-3, §11-60.1-90, §11-60.1-161; 40 CFR §60.751, 40 CFR §63.1990)[1]

Section C. Applicable Federal Regulations

1. The municipal solid waste landfill is subject to the provisions of the following federal regulations:

   a. 40 CFR Part 60, Standards of Performance for New Stationary Sources, Subpart A - General Provisions;
   b. 40 CFR Part 60, Standards of Performance for New Stationary Sources, Subpart WWW - Standards of Performance for Municipal Solid Waste Landfills;
   c. 40 CFR Part 63, National Emission Standards for Hazardous Air Pollutants for Source Categories, Subpart A - General Provisions; and
   d. 40 CFR Part 63, National Emission Standards for Hazardous Air Pollutants for Source Categories , Subpart AAAA - Municipal Solid Waste Landfills.

   (Auth: HAR §11-60.1-3,§60.1-90, §60.1-174; 40 CFR §60.1, §60.750, 40 CFR §63.1930)[1]

2. The permittee shall comply with all applicable provisions of these standards including all emission limits, notification, testing, monitoring, and reporting requirements.

3. In addition to the requirements of Hawaii Revised Statues, Chapter 342B and Hawaii Administrative Rules, Chapters 11-59 and 60.1, the conditions specified in this Attachment are incorporated pursuant to federal regulations 40 CFR 60, Subparts A and WWW and

40 CFR 63, Subparts A and AAAA. Except as may be required by the aforementioned state law and rules, should there be a conflict between the conditions of this Attachment and the aforementioned federal regulations, the federal regulations shall take precedence.

(Auth: HAR §11-60.1-3, §11-60.1-90, §11-60.1-174; 40 CFR §60.1, §60.750)[1]

Section D. Operational Standards for the Collection and Control System

1. Landfill Air Emission Standards

   a. The permittee shall submit an initial design capacity report. The landfill may calculate design capacity in either megagrams or cubic meters for comparison with the exemption values.

   b. The permittee shall submit to the administrator an amended design capacity report when there is any increase in the design capacity of a landfill subject to the provisions of 40 CFR 60 Subpart WWW.

   c. The control system for the landfill gas shall be designed and operated to reduce NMOC by 98 weight percent or reduce the outlet NMOC concentration to less than 20 parts per million (ppm) by volume. The reduction efficiency or parts per million by volume shall be established by the initial performance test.

2. Gas Collection System Standards

   Each owner or operator of an MSW landfill gas collection and control system used to comply with the provisions of 40 CFR §60.752(b)(2)(ii) shall:

   a. Operate the collection system such that gas is collected from each area, cell, or group of cells in the MSW landfill in which solid waste has been in place for:

      i. Five (5) years or more if active; or
      ii. Two (2) years or more if closed or at final grade;

   b. Operate the collection system with negative pressure at each wellhead except under the following conditions:

      i. A fire or increased well temperature. The owner or operator shall record instances when positive pressure occurs in efforts to avoid a fire. These records shall be submitted with the annual reports as provided in Special Condition G.2;

ii. Use of a geomembrane or synthetic cover. The owner or operator shall develop acceptable pressure limits in the design plan; and

iii. A decommissioned well. A well may experience a static positive pressure after shut down to accommodate for declining flows. All design changes shall be approved by the Administrator.

c. Operate each interior wellhead in the collection system with a landfill gas temperature less than 55°C and with either a nitrogen level less than 20 percent or an oxygen level less than 5 percent. The permittee may establish a higher operating temperature, nitrogen, or oxygen value at a particular well. A higher operating value demonstration shall show supporting data that the elevated parameter does not cause fires or significantly inhibit anaerobic decomposition by killing methanogens.

i. The nitrogen level shall be determined using 40 CFR Part 60, Appendix A, Method 3C.

ii. The oxygen level shall be determined by an oxygen meter using 40 CFR Part 60, Appendix A, Method 3A except that:

(1) The span shall be set so that the regulatory limit is between 20 and 50 percent of the span;
(2) A data recorder is not required;
(3) Only two calibration gases are required, a zero and span, and ambient air may be used as the span;
(4) A calibration error check is not required; and
(5) The allowable sample bias, zero drift, and calibration drift are ±10 percent.

Alternate test methods may be used provided prior approval is obtained from the Department of Health.

d. Operate the collection system so that the methane concentration is less than 500 parts per million above background at the surface of the landfill. To determine if this level is exceeded, the permittee shall conduct surface testing around the perimeter of the collection area and along a pattern that traverses the landfill at 30-meter intervals and where visual observations indicate elevated concentrations of landfill gas, such as distressed vegetation and cracks or seeps in the cover. The permittee may establish an alternate traversing pattern that ensures equivalent coverage. A surface monitoring design plan shall be developed that includes a topographical map with the monitoring route and the rationale for any site-specific deviations from the 30-meter intervals. Areas with steep slopes or other dangerous areas may be excluded from the surface testing.

e. Operate the system such that all collected gases are vented to the gas collection and control system. In the event the collection or control system is inoperable, the gas mover system shall be shut down and all valves in the collection and control system contributing to venting of the gas to the atmosphere shall be closed within one (1) hour; and

f. Operate the control or treatment system at all times when the collected gas is routed to the system.

If monitoring demonstrates that the operational requirements of Special conditions D.2.b, D.2.c or D.2.d are not met, the permittee shall take corrective action as specified in Section E of this attachment. If corrective actions are taken as specified, the monitored exceedance is not a violation of the operational requirements in this section.

(Auth: HAR §11-60.1-3,§11-60.1-90, §11-60.1-174; 40 CFR §60.753)[1]

3. The permittee shall adopt a startup, shutdown and malfunction plan which conforms to the provisions of 40 CFR Subpart A, §63.6. The permittee shall operate and maintain the facility in accordance with the procedures specified in the current startup, shutdown, and malfunction plan. Any revisions made to the startup, shutdown, and malfunction plan in accordance with the procedures established by 40 CFR §63.6(e)(3) shall not be deemed to constitute permit revisions under 40 CFR 70 or 40 CFR 71. Moreover, none of the procedures specified by the startup, shutdown and malfunction plan for an affected source shall be deemed to fall within the permit shield provision in section 504(f) of the Clean Air Act.

(Auth: HAR §11-60.1-3,§11-60.1-90, §11-60.1-174; 40 CFR §60.753, 40 CFR §63.6) [1]

4. Discontinuance of Collection and Control System

The permittee may cap or remove a collection and control system provided that all the following conditions are met:

a. The landfill is a closed landfill as defined in this Attachment, Section B. A closure report shall be submitted to the Department of Health as provided in Special Condition F.7;
b. The collection and control system shall have been in operation a minimum of fifteen (15) years; and

c. The calculated NMOC gas produced by the landfill shall be less than 50 megagrams per year on three successive test dates. The procedures specified in Special Condition G.10 shall be used. The test dates shall be no less than 90 days apart and no more than 180 days apart.

(Auth: HAR §11-60.1-3, §11-60.1-90, §11-60.1-174; 40 CFR §60.752(b))[1]

5. Visible Emissions

   a. The permittee shall take measures to control fugitive dust at all material transfer points and throughout the workyard. 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 on which the emissions originate.

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

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

Section E. Compliance Provisions

1. Except as provided in the collection and control system design plan approved by the Department of Health, the permittee shall use the following methods to determine whether the gas collection system is in compliance with Special Condition D.2.

   a. Calculation of Maximum Expected Gas Generation Flow Rate

      For the purposes of calculating the maximum expected gas generation flow rate from the landfill to determine compliance with 40 CFR §60.752(b)(2)(ii)(A)(1), one of the following equations shall be used. The k and L_o kinetic factors should be those published in the most recent Compilation of Air Pollutant Emission Factors (AP-42) or other site specific values demonstrated to be appropriate and approved by the Department of Health. If k has been determined as specified in this Attachment, Section H, the value of k determined from the test shall be used. A value of no more than 15 years shall be used for the intended use period of the gas mover equipment. The active life of the landfill is the age of the landfill plus the estimated number of years until closure.

      i. For sites with unknown year-to-year solid waste acceptance rate:

         $Q_m = 2L_oR(e^{-kc} - e^{-kt})$ where,

Q_m = maximum expected gas generation flow rate (m^3/yr)
L_o = methane generation potential, (m^3/Mg solid waste)
R = average annual acceptance rate (Mg/yr)
k = methane generation rate constant ($year^{-1}$)
t = age of the landfill at equipment installation plus the time the owner or operator intends to use the gas mover equipment or active life of the landfill, whichever is less. If the equipment is installed after closure, t is the age of the landfill at installation (years)
c = time since closure (years) (for an active landfill c = O and $e^{-kc} = 1$)

ii. For sites with known year-to-year solid waste acceptance rate:

$$Q_M = \sum_{I=1}^{n} 2kL_oM_i(e^{-kt}i) \text{ where,}$$

Q_M = maximum expected gas generation flow rate (m^3/year)
k = methane generation rate constant ($year^{-1}$)
L_o = methane generation potential, (m^3/Mg solid waste)
M_i = mass of solid waste in the i^{th} section (Mg)
t_i = age of the i^{th} section (years)

iii. The permittee may use actual flow data to project the maximum expected gas generation flow rate instead of, or in conjunction with, the equations listed in Special Conditions E.1.a.i and E.1.a.ii. If the landfill is still accepting waste, the actual measured flow data will not equal the maximum expected gas generation rate, so calculations using the equations in paragraphs (a)(1) (I) or (ii) or other methods shall be used to predict the maximum expected gas generation rate over the intended period of use of the gas control system equipment.

b. Gas Collector Density

For the purposes of determining sufficient density of gas collectors for compliance with 40 CFR §60.752(b)(2)(ii)(A)(2), the permittee shall design a system of vertical wells, horizontal collectors, or other collection devices, satisfactory to the Administrator Department of Health, capable of controlling and extracting gas from all portions of the landfill sufficient to meet all operational and performance standards.

c. Gas Collection System Flow Rate

For the purpose of demonstrating whether the gas collection system flow rate is sufficient to determine compliance with 40 CFR §60.752(b)(2)(ii)(A)(3), the permittee shall measure gauge pressure in the gas collection header at each individual well, monthly. If a positive pressure exists:

i. Action shall be initiated to correct the exceedance within 5 calendar days, except for the three conditions allowed under Special Condition No. D.2.b.

ii. If negative pressure cannot be achieved without excess air infiltration within 15 calendar days of the first measurement, the gas collection system shall be expanded to correct the exceedance within 120 days of the initial measurement of positive pressure.

iii. Any attempted corrective measure shall not cause exceedances of other operational or performance standards. An alternative timeline for correcting the exceedance may be submitted to the Administrator for approval.

d. The permittee is not required to install additional wells as required in Special Condition E.1.c during the first 180 days after gas collection system startup.

e. Identification of Excess Air Infiltration

The permittee shall monitor each well monthly for temperature and concentration of nitrogen or oxygen as provided in Special Condition D.2.c. If a well exceeds one of these operating parameters:

i. Action shall be initiated to correct the exceedance within 5 calendar days.

ii. If correction of the exceedance cannot be achieved within 15 calendar days of the first measurement, the gas collection system shall be expanded to correct the exceedance within 120 days of the initial exceedance.

iii. Any attempted corrective measure shall not cause exceedances of other operational or performance standards. An alternative timeline for correcting the exceedance may be submitted to the Administrator for approval.

(Auth: HAR §11-60.1-3,§11-60.1-90, §11-60.1-174; 40 CFR §60.755)[1]

2. For purposes of compliance with 40 CFR §60.753(a), the permittee of a controlled landfill shall place each well or design component as specified in the approved design plan. Each well shall be installed no later than 60 days after the date on which the initial solid waste has been in place for a period of:

a. Five (5) years or more if active; or
b. Two (2) years or more if closed or at final grade.

(Auth: HAR §11-60.1-3,§11-60.1-90, §11-60.1-174; 40 CFR §60.755)[1]

3. The following procedures shall be used for compliance with the surface methane operational standard as provided in Special Condition D.2.d.:

   a. After installation of the collection system, the permittee shall monitor surface concentrations of methane along the entire perimeter of the collection area and along a pattern that traverses the landfill at 30 meter intervals (or a site-specific established spacing) for each collection area on a quarterly basis using an organic vapor analyzer, flame ionization detector, or other portable monitor meeting the specifications provided in Special Condition E.4.
   b. The background concentration shall be determined by moving the probe inlet upwind and downwind outside the boundary of the landfill at a distance of at least 30 meters from the perimeter wells.
   c. Surface emission monitoring shall be performed in accordance with section 4.3.1 of Method 21 of 40 CFR 60 appendix A, except that the probe inlet shall be placed within 5 to 10 centimeters of the ground. Monitoring shall be performed during typical meteorological conditions.
   d. Any reading of 500 parts per million or more above background at any location shall be recorded as a monitored exceedance and the following actions shall be taken. As long as the specified actions are taken, the exceedance is not a violation of the operational requirements of Special Condition D.2.d.

      i. The location of each monitored exceedance shall be marked and the location recorded.

      ii. Cover maintenance or adjustments to the vacuum of the adjacent wells to increase the gas collection in the vicinity of each exceedance shall be made and the location shall be re-monitored within 10 calendar days of detecting the exceedance.

      iii. If the re-monitoring of the location shows a second exceedance, additional corrective action shall be taken and the location shall be monitored again within 10 days of the second exceedance. If the re-monitoring shows a third exceedance for the same location, the action specified in Special Condition E.3.d.v shall be taken, and no further monitoring of that location is required until the action specified in Special Condition E.3.d.v has been taken.

      iv. Any location that initially showed an exceedance but has a methane concentration less than 500 ppm methane above background at the 10-day re-monitoring specified in Special Conditions E.3.d.ii or E.3.d.iii shall be re-monitored one month from the initial exceedance. If the one-month remonitoring shows a concentration less than 500 parts per million above background, no further monitoring of that location is required until the next quarterly monitoring period. If the one-month remonitoring shows an exceedance, the actions specified in Special Conditions E.3.d.ii or E.3.d.iii shall be taken.

v. For any location where monitored methane concentration equals or exceeds 500 parts per million above background three times within a quarterly period, a new well or other collection device shall be installed within 120 calendar days of the initial exceedance. An alternative remedy to the exceedance, such as upgrading the blower, header pipes or control device, and a corresponding timeline for installation may be submitted to the Administrator for approval.

e. The permittee shall implement a program to monitor for cover integrity and implement cover repairs as necessary on a monthly basis.

(Auth: HAR §11-60.1-3,§11-60.1-90, §11-60.1-174; 40 CFR §60.755)[1]

4. The permittee shall comply with the following instrumentation specifications and procedures for surface emission monitoring devices:

a. The portable analyzer shall meet the instrument specifications provided in section 3 of Method 21 of 40 CFR 60 appendix A, except that "methane"' shall replace all references to VOC.
b. The calibration gas shall be methane, diluted to a nominal concentration of 500 parts per million in air.
c. To meet the performance evaluation requirements in section 3.1.3 of Method 21 of 40 CFR 60 appendix A, the instrument evaluation procedures of section 4.4 of Method 21 of 40 CFR 60 appendix A shall be used.
d. The calibration procedures provided in section 4.2 of Method 21 of 40 CFR 60 appendix A shall be followed immediately before commencing a surface monitoring survey.

(Auth: HAR §11-60.1-3,§11-60.1-90, §11-60.1-174; 40 CFR §60.755)[1]

5. The provisions of Attachment II, Section E apply at all times, except during periods of start-up, shutdown, or malfunction, provided that the duration of start-up, shutdown, or malfunction shall not exceed five (5) days for collection systems and shall not exceed one hour for treatment or control devices.

(Auth: HAR §11-60.1-3,§11-60.1-90, §11-60.1-174; 40 CFR §60.755)[1]

Section F. Monitoring and Recordkeeping Requirements

Monitoring

1. Gas Collection System

Except as provided in the collection and control system design plan approved by the Department of Health, each permittee with an active gas collection system shall install a sampling port and a thermometer, other temperature measuring device, or an access port for temperature measurements at each wellhead and:

a. Measure the gauge pressure in the gas collection header on a monthly basis; and
b. Monitor nitrogen or oxygen concentration in the landfill gas on a monthly basis; and
c. Monitor temperature of the landfill gas on a monthly basis.

(Auth: HAR §11-60.1-3,§11-60.1-90, §11-60.1-174; 40 CFR §60.769)[1]

2. Enclosed Flare

The permittee shall calibrate, maintain, and operate the following equipment according to the manufacturer's specifications:

a. A temperature monitoring device equipped with a continuous recorder and having a minimum accuracy of ±1 percent of the temperature being measured expressed in degrees Celsius or ±0.5 degrees Celsius, whichever is greater. A temperature monitoring device is not required for boilers or process heaters with design heat input capacity equal to or greater than 44 megawatts.

b. A device that records flow to or bypass of the control device. The permittee shall either:

   i. Install, calibrate, and maintain a gas flow rate measuring device that shall record the flow to the control device at least every 15 minutes; or

   ii. Secure the bypass line valve in the closed position with a car- seal or a lock-and-key type configuration. A visual inspection of the seal or closure mechanism shall be performed at least once every month to ensure that the valve is maintained in the closed position and that the gas flow is not diverted through the bypass line.

(Auth: HAR §11-60.1-3,§11-60.1-90, §11-60.1-174; 40 CFR §60.756)[1]

3. Surface Concentrations of Methane

   Each permittee shall monitor surface concentrations of methane according to the instrument specifications and procedures provided in this Attachment, Special Condition No. E.4. Any closed landfill that has no monitored exceedances of the operational standard in three consecutive quarterly monitoring periods may skip to annual monitoring. Any methane reading of 500 ppm or more above background detected during the annual monitoring returns the frequency for that landfill to quarterly monitoring.

   (Auth: HAR §11-60.1-3,§11-60.1-90, §11-60.1-174; 40 CFR §60.756)[1]

4. Alternatives

   Each permittee that specified alternatives in the collection and control design plan shall comply with any additional monitoring requirements set forth in the plan as approved by the Department of Health.

   (Auth: HAR §11-60.1-3,§11-60.1-90, §11-60.1-174; 40 CFR §60.756)[1]

5. Performance Tests

   Initial and annual source performance tests shall be conducted on the collection and control system pursuant to Attachment II, Section H. Test summaries and results shall be maintained in accordance with the requirements of this section.

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

6. In the event that the collection and control system is not in operation and in compliance with this Attachment, Sections D and E:

   a. Annual NMOC emission rates shall be calculated in accordance with Attachment II, Section G; and

   b. NMOC emission rate reports shall be submitted in accordance with Attachment II, Special Condition F.2.

   (Auth: HAR §11-60.1-3,§11-60.1-90, §11-60.1-174; 40 CFR §60.757)[1]

7. Visible Emissions (V.E.)

   a. The permittee shall conduct **monthly** (*calendar month*) V.E. observations for the enclosed flare in accordance with Method 9 or by use of a Ringelmann Chart as provided. For the opacity limits specified in Special Condition D.8.c, the annual source performance test shall satisfy visible emission monitoring requirements for the month the source test was performed. For each period, two (2) consecutive six (6) minute

observations shall be taken at fifteen (15) second intervals for each equipment. Records shall be completed and maintained in accordance with the *Visible Emissions Form Requirements*.

(Auth: HAR §11-60.1-8, §11-60.1-15, §11-60.1-16, §11-60.1-90)

Recordkeeping

8. Except where otherwise specified, all records, including supporting information, data, calculations, sample reports, and measurements used to calculate emissions, shall be maintained in a permanent form suitable for inspection, retained for **at least five (5) years** following the date of such records, and provided to the Department of Health or their authorized representative upon request.

   (Auth: HAR §11-60.1-3, §11-60.1-90, §11-60.1-174; 40 CFR §60.758)[1]

9. Each permittee that specified alternatives in the collection and control design plan shall comply with any additional recordkeeping requirements set forth in the plan as approved by the Department of Health.

   (Auth: HAR §11-60.1-3, §11-60.1-90, §11-60.1-174; 40 CFR §60.758)[1]

10. Except as provided in the collection and control system design plan approved by the Department of Health, the permittee shall maintain the following records:

    a. Equipment operating parameters specified to be monitored in Special Conditions F.1 - F.4, including:

       i. Gauge pressure in each extraction well;

       ii. Nitrogen or oxygen concentration in extracted landfill gas;

       iii. Temperature of extracted landfill gas;

       iv. Methane concentrations along landfill surface;

       v. Gas flow from collection system to the control device; and

       vi. Combustion temperature of an enclosed combustion device or the continuous presence of a pilot flame for an open flare.

b. The following data, as measured during the initial performance test or compliance determination, shall be maintained for the life of the control equipment. Records of subsequent tests or monitoring shall be maintained for a minimum of 5 years.

   i. The maximum expected gas generation flow rate as calculated in Special Condition E.1.a. The owner or operator may use another method to determine the maximum gas generation flow rate, if the method is included in the collection and control system design plan approved by the Department.

   ii. The density of wells, horizontal collectors, surface collectors, or other gas extraction devices determined using the procedures specified in Special Condition C.4.a.

   ii. For an enclosed combustion device other than a boiler or process heater with a design heat input capacity equal to or greater than 44 megawatts:

      (1) The average combustion temperature measured at least every 15 minutes and averaged over the same time period of the performance test.
      (2) The percent reduction of NMOC achieved by the control device.

c. Instances in which positive pressure occurs in efforts to avoid a fire, including the date, time, and duration of positive pressure.

d. Periods of operation during which the parameter boundaries established during the most recent performance test are exceeded, including:

   i. For enclosed combustors except for boilers and process heaters with design heat input capacity of 44 megawatts (150 million British thermal unit per hour) or greater: all 3-hour periods of operation during which the average combustion temperature was more than 28°C below the average combustion temperature.

e. Continuous records of the indication of flow to the control device or the indication of bypass flow or records of monthly inspections of car-seals or lock-and-key configurations used to seal bypass lines.

f. Plot map showing each existing and planned collector in the system and providing a unique identification location label for each collector for the life of the collection system, including:

   i. Installation date and location of all newly installed collectors; and

   ii. Documentation of the nature, date of deposition, amount, and location of asbestos-containing or nondegradable waste excluded from collection as well as any nonproductive areas excluded from collection.

g. All collection and control system exceedances of the operational standards in Attachment II, Section D, the reading in the subsequent month whether or not the second reading is an exceedance, and the location of each exceedance. Records shall also include the dates, times, duration, reasons, sampler's name, and any corrective actions, as applicable.

h. Source performance test plans, summaries, and results for the collection and control system.

I. Equipment inspection, maintenance, and repair work. A log shall be maintained for the equipment covered under this permit. Replacement of parts and repairs to the facility shall be well documented. At a minimum, the log shall include:

i. Date of the inspection/maintenance/repair;

ii. Description of the findings and any maintenance/repair work performed; and

iii. The name and title of the personnel performing the inspection/work.

(Auth: HAR §11-60.1-3,§11-60.1-90, §11-60.1-174; 40 CFR §60.753 and 60.758)[1]

11. Records of the control device vendor specifications shall be maintained until removal.

(Auth: HAR §11-60.1-3,§11-60.1-90, §11-60.1-174; 40 CFR §60.753 and 60.758)[1]

Section G. Notification and Reporting Requirements

1. Notification and reporting pertaining to the following events for each landfill shall be done in accordance with Attachment I, Standard Condition Nos. 14, 16, 17 and 25, respectively:

a. *Anticipated date of initial start-up, actual date of construction commencement, and actual date of start-up;*
b. *Intent to shut down air pollution control equipment for necessary scheduled maintenance;*
c. *Emissions of air pollutants in violation of HAR, Chapter 11-60.1 or this permit (excluding technology-based emission exceedances 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; SIP §11-60-10, §11-60-16)[2]

2. Monitoring Reports

The permittee shall submit **semi-annually** the following written report to the Department of Health. The report 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),* shall be signed and dated by an authorized representative, and shall include:

a. Information as required by the Initial Compliance Report in Special Condition G.3; and
b. Additional information, including:

i. Average and maximum gauge pressure within each gas extraction well measured over 6-month period;

ii. Average and maximum nitrogen concentration or average and maximum oxygen concentration measured over 6-month period;

iii. Average and maximum landfill gas temperature in extraction well measured over six-month period;

iv. Average and maximum methane concentration at landfill surface measured over quarterly period. If annual monitoring is allowed, the average and maximum methane concentration at landfill surface during the most recent monitoring event;

v. Identification of any instances when the gas flow has been diverted from the control device, enclosed combustor, or open flare;

vi. Average, maximum, and minimum combustion temperature of an enclosed combustion device, as applicable;

vii. Identification of any instances in which the pilot flame or flare flame for an open flare was not present;

viii. For all maximum values, include the date and time that the value was identified;

ix. For all instances of non-compliance, indicate the dates, times, duration, and reason; and

x. Any opacity exceedances as determined by the required monthly visible emissions monitoring. Each exceedance reported shall include the date, six (6) minute average opacity reading, possible reasons 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 Monitoring Report Form(s): **Collection and Control System**, and **Visible Emissions** shall be used.

(Auth: HAR §11-60.1-3,§11-60.1-90, §11-60.1-174; 40 CFR §60.756)[1]

3. Initial Compliance Report

The permittee with an active collection system shall submit an initial compliance report **within 180 days** *of installation and start-up of the collection and control system.* The initial annual report shall include the initial performance test and the following information:

a. Value, date, time, and duration of each exceedance of applicable parameters for:

   i. Gauge pressure in the gas collection header;

   ii. Nitrogen or oxygen concentration in the landfill gas;

   iii. Temperature of landfill gas; and

   iv. Surface concentrations of methane.

b. Description, reason, dates, start and end times, and duration of all periods when the gas stream is diverted from the control device through a bypass line or the indication of bypass flow as specified in Attachment II, Section E.
c. Description, reason, dates, start and end times, and duration of all periods when the control device was not operating for a period exceeding one (1) hour and length of time the control device was not operating.
d. All periods when the collection system was not operating in excess of five (5) days, including dates and times that operation ceased, reason for not operating, actions taken, dates and times that operation resumed, and future operational protocol that will prevent a reoccurrence of the situation.
e. The location of each exceedance of the 500 ppm surface methane concentration as provided in 60.753(d), concentration at each location for which an exceedance was recorded in the previous month. Also identify the dates of sampling, sampler's name, and actions taken to address the exceedance.
f. The date of installation and the location of each well or collection system expansion added.

The Supplemental Report Form *Initial Compliance Report* shall be used.

(Auth: HAR §11-60.1-3,§11-60.1-90, §11-60.1-174; 40 CFR §60.758)[1]

4. Annual Emissions Reporting

   a. As required by Attachment IV, the permittee shall report annually the NMOC emission rate and total tons per year emitted of each regulated air pollutant from the municipal solid waste landfill facility, 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: *Municipal Solid Waste Landfills,* shall be used for reporting.

      Upon written request of the facility, the deadline for reporting of 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)

5. Performance test reports

   a. At least **thirty (30) days prior** *to conducting a source performance test,* the permittee shall submit to the Department of Health a test plan in accordance with Special Condition H.4.

   b. Written reports of the results of all source performance tests conducted pursuant to this permit shall be submitted to the Department of Health **within sixty (60) days** *after the completion of the performance test* in accordance with Special Condition H.6.

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

6. Design Capacity Increase

   The permittee shall submit information regarding landfill modifications (as defined in Special Condition B.12) to the Department of Health at least **thirty (30) days prior** to commencement of construction. The information submitted shall include the following:

   a. Name, address, and phone number of the facility and the plant site manager or other contact;
   b. Current design capacity of the landfill (m^3 and Mg);
   c. Current site-specific density (Mg/m^3);
   d. Description of the reconstruction or modification;
   e. Site map of the landfill containing the following information:

      i. Location of the landfill and area of proposed modification or reconstruction;

      ii. Current lateral boundaries of the existing landfill;

iii. Proposed lateral boundaries of the expansion; and

iv. Current and proposed vertical dimensions of the landfill;

f. Projected date of construction commencement;
g. Projected waste acceptance rate for the proposed modification;
h. Certification that no air pollution equipment will be added to the facility and operational methods will remain similar as permitted under this Covered Source Permit; and
i. Certification that the permittee shall comply with each applicable requirement of this Covered Source Permit.
j. Other information as may be required by the Department of Health; and
k. A ***certified statement by a responsible official*** that all information contained in the notification is accurate and true.

The enclosed Supplemental Report Form: *Modification/Reconstruction of MSW Landfill,* shall be used.

(Auth: HAR §11-60.1-3, §11-60.1-90)

7. Landfill Closure

The permittee shall submit a **closure report** to the Department of Health **within 30 days** of waste acceptance cessation. If a closure report is submitted, no additional wastes may be placed into the landfill without filing a notification of modification as in 40 CFR §60.7(a)(4). The closure report shall contain the following information:

a. Last day of waste acceptance (month, day, year);
b. Date of closure (month, day, year);
c. Design capacity (Mg and m3);
d. Quantity of refuse-in-place (Mg and m3); and
e. Identification and quantity of additional capacity, if any;
f. Certification that no additional waste will be placed in the landfill; and
g. Name, address, and phone number of the facility and the plant site manager or other contact.

The enclosed Supplemental Report Form: *Notification of Upcoming Landfill Closure,* shall be used.

The Department of Health may request additional information as may be necessary to verify that permanent closure has taken place in accordance with 40 CFR §60.258.60.

(Auth: HAR §11-60.1-3, §11-60.1-90, §11-60.1-174; 40 CFR §60.757)[1]

8. Equipment Removal Notification

The permittee shall submit an equipment removal report to the Department of Health **30 days prior** to removal or cessation of operation of the control equipment.

a. The equipment removal report shall contain the following items:

i. A copy of the closure report submitted in accordance with Special Condition G.7;

ii. A copy of the initial performance test report demonstrating that the 15-year minimum control period has expired; and

iii. Dated copies of three successive NMOC emission rate reports demonstrating that the landfill is no longer producing 50 megagrams or greater of NMOC per year.

b. The Department of Health may request such additional information as may be necessary to verify that all of the conditions for removal in Special Condition G.10 have been met.

The enclosed Supplemental Report Form: *Notification of Collection and Control Equipment Removal,* shall be used.

(Auth: HAR §11-60.1-3, §11-60.1-90, §11-60.1-174; 40 CFR §60.757)[1]

9. Compliance Certification

During the permit term, the permittee shall submit at least **annually** to the Department of Health and U.S. EPA Region 9, a compliance certification 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 an 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 an authorized representative.

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)

10. Discontinuance of the Collection and Control System

The permittee shall calculate the NMOC emission rate for purposes of determining when a collection and control system can be removed, using the following equation:

$M_{NMOC} = 1.89 \times 10^{-3} Q_{LFG} C_{NMOC}$, where

M_{NMOC} = mass emission rate of NMOC (Mg/yr)
Q_{LFG} = flow rate of landfill gas (m3/min)
C_{NMOC} = NMOC concentration (ppm by volume as hexane)

a. The flow rate of landfill gas, Q_{LFG}, shall be determined by measuring the total landfill gas flow rate at the common header pipe that leads to the control device using a gas flow measuring device calibrated according to the provisions of section 4 of Method 2E of appendix A.
b. The average NMOC concentration, C_{NMOC}, shall be determined by collecting and analyzing landfill gas sampled from the common header pipe before the gas moving or condensate removal equipment using the procedures in Method 25C or Method 18 of appendix A. If using Method 18 of appendix A, the minimum list of compounds to be tested shall be those published in the most recent Compilation of Air Pollutant Emission Factors (AP-42). The sample location on the common header pipe shall be before any condensate removal or other gas refining units. The permittee shall divide the NMOC concentration from Method 25C of 40 CFR 60 appendix A by six to convert from C_{NMOC} as carbon to C_{NMOC} as hexane.
c. The owner or operator may use another method to determine landfill gas flow rate and NMOC concentration if the method has been approved by the Administrator.

(Auth: HAR §11-60.1-3, §11-60.1-90, §11-60.1-174; 40 CFR §60.754)[1]

Section H. Testing Requirements

1. **Within sixty (60) days after** *achieving the maximum production rate* of the collection and control system but not later than one hundred eighty (180) days after initial start-up, and annually thereafter, the permittee shall conduct or cause to be conducted performance tests on the collection and control system for the following purposes:

   a. To establish the reduction efficiency or parts per million volume of a control system designed and operated to reduce NMOC by 98 weight-percent, or, when an enclosed combustion device is used for control, to either reduce NMOC by 98 weight percent or reduce the outlet NMOC concentration to less than 20 parts per million by volume, dry basis as hexane at 3 percent oxygen.

   The Department of Health may require testing at other points in the facility or more frequent testing if an inspection indicates poor or insufficient controls.

   (Auth: HAR §11-60.1-3,§11-60.1-90, §11-60.1-174; 40 CFR §60.754)[1]

2. On an annual basis or other times as may be specified by the Department of Health, performance tests for the emissions of NMOC and the determination of opacity shall be conducted and results reported in accordance with the test methods set forth in 40 CFR Part 60, Appendix A and 40 CFR Part 60.8. The following test methods or U.S. EPA-approved equivalent methods with written consent from the Department of Health shall be used:

   a. The permittee shall use Method 25, 25C, or Method 18 of 40 CFR 60 Appendix A to determine compliance with the 98 weight-percent efficiency or the 20 ppmv outlet concentration level, unless another method to demonstrate compliance is included in the collection and control system design plan approved by the Department of Health.
   b. The permittee shall use Method 3 or 3A determine the oxygen for correcting the NMOC concentration as hexane to 3 percent.
   c. The permittee shall use Method 25A in place of Method 25 in cases where the outlet concentration is less than 50 parts per million NMOC as carbon (8 ppm NMOC as hexane).
   d. If using Method 18 of Appendix A, the minimum list of compounds to be tested shall be those published in the most recent Compilation of Air Pollutant Emission Factors (AP-42).
   e. The permittee shall use the following equation to calculate efficiency:

      Control Efficiency = $(NMOC_{in} - NMOC_{out})/NMOC_{in}$

      Where, $NMOC_{in}$ = mass of NMOC entering control device and
      $NMOC_{out}$ = mass of NMOC exiting control device.

   (Auth: HAR §11-60.1-3,§11-60.1-90, §11-60.1-174; 40 CFR §60.754)[1]

3. The initial performance test report shall include the following information:

   a. A diagram of the collection system showing collection system positioning including all wells, horizontal collectors, surface collectors, or other gas extraction devices, including the locations of any areas excluded from collection and the proposed sites for the future collection system expansion;
   b. The data upon which the sufficient density of wells, horizontal collectors, surface collectors, or other gas extraction devices and the gas mover equipment sizing are based;
   c. The documentation of the presence of asbestos or nondegradable material for each area from which collection wells have been excluded based on the presence of asbestos or nondegradable material;
   d. The sum of the gas generation flow rates for all areas from which collection wells have been excluded based on nonproductivity and the calculations of gas generation flow rate for each excluded area;
   e. The provisions for increasing gas mover equipment capacity with increased gas generation flow rate, if the present gas mover equipment is inadequate to move the maximum flow rate expected over the life of the landfill; and
   f. The provisions fo the control of off-site migration.

   (Auth: HAR §11-60.1-3,§11-60.1-90, §11-60.1-174; 40 CFR §60.754, 60.757)[1]

3. The performance tests shall be made at the expense of the permittee and shall be conducted at the maximum expected operating capacity of the collection and control system. All performance tests may be monitored by the Department of Health.

   (Auth: HAR §11-60.1-3, §11-60.1-11, §11-60.1-90, SIP §11-60-15)[2]

4. At least **thirty (30) calendar days prior** *to conducting a performance test*, the owner or operator shall submit a written performance test plan to the Department of Health that includes date(s) of the test, test duration, test locations, test methods, source operation, location of visible emissions, and other parameters that may affect performance 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 §60.8, SIP §11-60-15)[1,2]

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 §11-60.1-3, §11-60.1-11, §11-60.1-90)

6. **Within sixty (60) days after** *completion of the performance test*, the permittee shall submit to the Department of Health the test report which shall include the operating conditions (e.g., operating rate in tons/hour and pressure drop readings, etc.) of the portable drum mix asphalt concrete plant, the summarized test results, comparative results with the permit emissions limits, and other pertinent field data, laboratory data, and support calculations.

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

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

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

Section I. 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. 29.

(Auth: HAR §11-60.1-4, §11-60.1-90)

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

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

ATTACHMENT II - INSIG: SPECIAL CONDITIONS
COVERED SOURCE PERMIT NO. 0489-01-C
INSIGNIFICANT ACTIVITIES

Issuance Date: March 11, 2005 **Expiration Date: March 10, 2010**

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 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, Attachment V: Compliance Certification 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; and
e. Any additional information as required by the Department of Health including information to determine compliance.

In lieu of addressing each emission unit as specified in Attachment V, 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.

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 or authorized representative.

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

Section E. Agency Notification

Any document (including reports) required to be submitted by this Covered Source Permit shall be done in accordance with Attachment 1, Standard Condition No. 29.

(Auth: HAR §11-60.1-4, §11-60.1-90)

ATTACHMENT III: ANNUAL FEE REQUIREMENTS
COVERED SOURCE PERMIT NO. 0489-01-C

Issuance Date: March 11, 2005 **Expiration Date: March 10, 2010**

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

1. Annual fees shall be paid in full:

   a. **Within 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 HAR, Chapter 11-60.1, Subchapter 6.

3. The annual emissions data for which the annual fees are based shall accompany the submittal of any annual fees and be submitted on forms furnished by the Department 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. 0489-01-C

Issuance Date: March 11, 2005 **Expiration Date: March 10, 2010**

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

1. Complete the attached Annual Emissions Report Form: "Municipal Solid Waste Landfills."

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 Department of Health and clearly identifying the specific information that is to be accorded confidential treatment.

ATTACHMENT V: COMPLIANCE CERTIFICATION
COVERED SOURCE PERMIT NO. 0489-01-C

Issuance Date: March 11, 2005 **Expiration Date: March 10, 2010**

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 set by an applicable requirement:

(Make Copies for Future Use)

For Period: _____ Date: _____

Facility Name: _____

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.

Responsible Official (PRINT): _____

TITLE: _____

Responsible Official (Signature): _____

Complete the following information for ***each*** term or condition of the permit that applies to ***each*** emissions unit at the source. Also include any additional information as required by the Department. The compliance certification may reference information contained in a previous compliance certification submittal to the Department, provided such referenced information is certified as being current and still applicable.

1. Current permit number: _____
2. Emissions Unit No./Description: _____
3. Identify the permit term(s) or condition(s) that is/are the basis of this certification:

   _____
   _____
   _____
   _____
   _____

4. Compliance status during the reporting period:
   a. Has the emissions unit been in compliance with the identified permit term(s) or condition(s)?

      ☐ YES ☐ NO

   b. If YES, was compliance continuous or intermittent?

      ☐ Continuous ☐ Intermittent

c. If NO, explain.

5. The methods used for determining the compliance status of the emissions unit currently and over the reporting period (e.g., monitoring, recordkeeping, reporting, test methods, etc.):

Provide a detailed description of the methods used to determine compliance: (e.g., monitoring device type and location, test method description, or parameter being recorded, frequency of recordkeeping, etc.)

6. Statement of Compliance with Enhanced Monitoring and Compliance Certification Requirements.

a. Is the emissions unit identified in this application in compliance with applicable enhanced monitoring and compliance certification requirements?

☐ YES ☐ NO

b. If YES, identify those requirements:

c. If NO, describe below which requirements are not being met:

MONITORING REPORT FORM
COLLECTION AND CONTROL SYSTEM
COVERED SOURCE PERMIT NO. 0489-01-C
(PAGE 1 OF 3)

Issuance Date: March 11, 2005 **Expiration Date: March 10, 2010**

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: _____

Facility 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): _____ Date: _____

1. Value and length of time for exceedance of applicable parameters. If there were 'no exceedances' identified, then write no exceedances in the comment column.

Parameter	Value	Date	Start Time	End Time	Duration	Comments
Gauge pressure in gas collection header						
Nitrogen Conc.(%), or						
Oxygen Conc. (%)						
Temp. (°C) of landfill gas						
Surface Conc. of Methane (ppmv as hexane)						

2. Average and maximum values for the following:

Parameter	Average Value	Maximum Value	Date of Max. Value	Comments
Gauge pressure in gas collection header				
Nitrogen Conc. (%)				
Oxygen Conc. (%)				
Temp. (°C) of landfill gas				
Surface Concentrations of Methane*				

*If annual monitoring is allowed, the average and maximum methane concentration at landfill surface during the most recent monitoring event.

MONITORING REPORT FORM
COLLECTION AND CONTROL SYSTEM
COVERED SOURCE PERMIT NO. 0489-01-C
(CONTINUED, PAGE 2 OF 3)

Issuance Date: March 11, 2005 **Expiration Date: March 10, 2010**

2. Identify the dates, times, duration, reason, and description of all periods when the gas stream is diverted from the control device through a bypass line or the indication of bypass flow. If there were no occurrences, then write 'no occurrences' in the comment column.

Description and Reason	Date	Start - End Time	Duration	Comments

3. Identify the dates, times, duration, reason, and description of all periods when the control device was not operating for a period exceeding one (1) hour and length of time the control device was not operating. If there were no occurrences, then write 'no occurrences' in the comment column.

Description and Reason	Dates	Start/End Times	Duration	Comments

4. Identify all periods when the collection system was not operating in excess of five (5) days, including the dates and times that operation ceased, reason for not operating, actions taken, dates and times that operation resumed, and future operational protocol that will prevent a reoccurrence of the situation. If there were no occurrences, then write 'no occurrences' in the comment column.

Reason, Actions Taken	Start/End Dates	Start/End Times	Duration	Future Protocol, Comments

MONITORING REPORT FORM
COLLECTION AND CONTROL SYSTEM
COVERED SOURCE PERMIT NO. 0489-01-C
(CONTINUED, PAGE 3 OF 3)

Issuance Date: March 11, 2005 **Expiration Date: March 10, 2010**

5. Identify the location of each exceedance of the 500 ppm surface methane concentration and the concentration at each location for which an exceedance was recorded in the previous month. Also identify the dates of sampling, sampler's name, and actions taken to address the exceedance. If there were no exceedances, then write 'no occurrences' in the table.

Sampling Date	Location	Conc. (ppm)	Previous Conc. (ppm)	Actions Taken	Sampler's Name

6. Identify the date of installation and the location of each well or collection system expansion added. If no additions were made, then write 'no additions' in the table.

Installation Date	Description of Addition	Location

7. Identify any instances when the gas flow has been diverted from the control device, enclosed combustor, or open flare. If there were no occurrences, then write 'no occurrences' in the table.

Description and Reason	Dates	Start/End Times	Duration	Comments

ANNUAL EMISSIONS REPORT FORM
MUNICIPAL SOLID WASTE LANDFILLS
COVERED SOURCE PERMIT NO. 0489-01-C

Issuance Date: March 11, 2005 **Expiration Date: March 10, 2010**

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, annually.

(Make Copies for Future Use)

For Period: _____ Date: _____

Facility Name: _____

Facility 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): _____ Date: _____

1. Landfill Emissions

Landfill type (circle one): Area Trench Ramp

Average annual refuse acceptance rate during active life (Mg/yr): _____

Parameter	Site-Specific Value, if available	Calculation Method
Methane generation potential, L_o (m^3 CH_4/Mg refuse)		
Methane generation rate constant, k (yr^{-1})		
Concentration of CH_4 in landfill gas (ppmv)		
Concentration of CO_2 in landfill gas (ppmv)		
Concentration of N_2 in landfill gas (ppmv)		
Concentration of O_2 in landfill gas (ppmv)		
Temperature of landfill gas (°C)		

Note:
If the permittee intends to use the site-specific values to compute annual emissions from the municipal solid waste landfill, all data, background information, and calculations shall be provided with the submittal of this form. If the requested information is not provided, default values will be assumed.

2. For MSW Landfills with a Collection and Control System:

Indicate the control efficiency of the collection and control system: _____

Control Efficiency = $(NMOC_{in} - NMOC_{out})/NMOC_{in}$

Where, $NMOC_{in}$ = mass of NMOC entering control device and
$NMOC_{out}$ = mass of NMOC exiting control device.

SUPPLEMENTAL REPORT FORM
MODIFICATION/RECONSTRUCTION OF MSW LANDFILL
COVERED SOURCE PERMIT NO. 0489-01-C

Issuance Date: March 11, 2005 **Expiration Date: March 10, 2010**

This form fulfills the requirements of the Amended Design Capacity Report.

(Make Copies for Future Use)

For Period: _____ Date: _____

Facility Name: _____

Facility 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.

I certify that no air pollution equipment will be added to the facility and operational methods will remain similar as permitted under this Covered Source Permit.

I certify to comply with each applicable requirement of this Covered Source Permit.

Responsible Official (Print): _____

Title: _____

Responsible Official (Signature): _____ Date: _____

1. Current design capacity of the landfill (m^3 and Mg): _____
2. Current site-specific density (Mg/m^3): _____
3. Description of the reconstruction or modification: _____

   _____

   _____

   _____
4. Current lateral dimensions of the landfill (meters): _____

   Proposed lateral dimensions of the landfill (meters): _____

   Current vertical limit of the landfill (meters): _____

   Proposed vertical limit of the landfill (meters): _____
5. Projected date of construction commencement: _____
6. Projected waste acceptance rate (Mg/yr): _____
7. Include a site map of thelandfill containing the following information:
   a) Location of the landfill and area of proposed modification or reconstruction;
   b) Current lateral boundaries of the existing landfill;
   c) Proposed lateral boundaries of the expansion; and
   d) Current and proposed vertical dimensions of the landfill.

SUPPLEMENTAL REPORT FORM
NOTIFICATION OF LANDFILL CLOSURE
COVERED SOURCE PERMIT NO. 0489-01-C

Issuance Date: March 11, 2005 **Expiration Date: March 10, 2010**

For Period: _____ Date: _____

Facility Name: _____

Facility 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.

I certify that the landfill closure is intended to be permanent.

Responsible Official (Print): _____

Title: _____

Responsible Official (Signature): _____ Date: _____

Last day of waste acceptance (month, day, year): _____

Date of landfill closure (month, day, year): _____

Final design capacity of landfill (Mg or m^3): _____

Final quantity of refuse-in-place (Mg **and** m^3): _____

Anticipated additional capacity, if any (Mg or m^3): _____

SUPPLEMENTAL REPORT FORM
INITIAL COMPLIANCE REPORT
COVERED SOURCE PERMIT NO. 0489-01-C
(PAGE 1 OF 2)

Issuance Date: March 11, 2005 **Expiration Date: March 10, 2010**

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

This report shall be submitted to the Department of Health *within 180 days of installation and start-up* of the collection and control system. Attach additional sheets if necessary. The initial performance test report shall also be included with this submittal.

Facility Name: _____ Date: _____

Facility 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): _____ Date: _____

Start-up date of collection and control system: _____

1. Value and length of time for exceedance of applicable parameters. If there were no exceedances identified, then write "no exceedances" in the comment column.

Parameter	Value	Date	Start Time	End Time	Duration	Comments
Gauge pressure in gas collection header						
Nitrogen Concentration or						
Oxygen Concentration						
Temperature of landfill gas						
Surface Concentrations of Methane						

2. Identify the dates, times, duration, reason, and description of all periods when the gas stream is diverted from the control device through a bypass line or the indication of bypass flow. If there were no occurrences, then write 'no occurrences' in the comment column.

Description and Reason	Date	Start - End Time	Duration	Comments

SUPPLEMENTAL REPORT FORM
INITIAL COMPLIANCE REPORT
COVERED SOURCE PERMIT NO. 0489-01-C
(CONTINUED, PAGE 2 OF 2)

Issuance Date: March 11, 2005 **Expiration Date: March 10, 2010**

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

3. Identify the dates, times, duration, reason, and description of all periods when the control device was not operating for a period exceeding one (1) hour and length of time the control device was not operating. If there were no occurrences, then write 'no occurrences' in the comment column.

Description and Reason	Dates	Start/End Times	Duration	Comments

4. Identify all periods when the collection system was not operating in excess of five (5) days, including the dates and times that operation ceased, reason for not operating, actions taken, dates and times that operation resumed, and future operational protocol that will prevent a reoccurrence of the situation. If there were no occurrences, then write 'no occurrences' in the comment column.

Reason, Actions Taken	Start/End Dates	Start/End Times	Duration	Future Protocol, Comments

5. Identify the location of each exceedance of the 500 ppm surface methane concentration and the concentration at each location for which an exceedance was recorded in the previous month. Also identify the dates of sampling, sampler's name, and actions taken to address the exceedance. If there were no exceedances, then write 'no occurrences' in the table.

Sampling Date	Location	Conc. (ppm)	Previous Conc. (ppm)	Actions Taken	Sampler's Name

6. Identify the date of installation and the location of each well or collection system expansion added. If no additions were made, then write 'no additions' in the table.

Installation Date	Description of Addition	Location

SUPPLEMENTAL REPORT FORM
NOTIFICATION OF COLLECTION AND CONTROL EQUIPMENT REMOVAL
COVERED SOURCE PERMIT NO. 0489-01-C

Issuance Date: March 11, 2005 **Expiration Date: March 10, 2010**

For Period: _____ Date: _____

Facility Name: _____

Facility 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.

I certify that the landfill closure is intended to be permanent.

Responsible Official (Print): _____

Title: _____

Responsible Official (Signature): _____ Date: _____

Last day of waste acceptance (month, day, year): _____

Date of landfill closure (month, day, year): _____

Final design capacity of landfill (Mg or m^3): _____

Date of closure report (month, day, year), including a copy of the closure report: _____

Has the collection and control system been in operation for a minimum of 15 years (based on the date of the most recent addition to the system?) Yes No

Include dated copies of three successive NMOC emission rate reports demonstrating that the landfill is no longer producing 50 megagrams or greater of NMOC per year. (Use equations for landfills without a collection and control system to make this determination.)

MONITORING REPORT FORM
VISIBLE EMISSIONS
COVERED SOURCE PERMIT NO. 0489-01-C

Issuance Date: March 11, 2005 **Expiration Date: March 10, 2010**

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:_____

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

Responsible Official (PRINT): _____

TITLE: _____

Responsible Official (Signature): _____

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

EQUIPMENT	SERIAL/ID NO.	DATE	6 MIN. AVG. (%)	COMMENTS

VISIBLE EMISSIONS FORM REQUIREMENTS
STATE OF HAWAII

The following Visible Emissions (V.E.) Form shall be completed **monthly** (*each calendar month*) for each equipment subject to opacity limits in accordance with Method 9 or by use of a Ringelmann Chart as provided. At least **annually** (*calendar year*), V.E. observations 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 5 percent increments (i.e., 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. Stand at least three (3) stack heights, but not more than a quarter mile from the stack.

4. Two (2) observations shall be taken at fifteen (15) second intervals for six (6) consecutive minutes for each equipment.

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

6. 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 maximum permitted capacity.

7. 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 (5) years, and made available to the Department of Health, or their representative upon request.

VISIBLE EMISSIONS FORM
STATE OF HAWAII

(Make Copies for Future Use For Each Equipment)

Permit No.: 0489-01-C

Company Name:_____

Equipment and Fuel:_____

Site Conditions:

Stack height above ground (ft):_____

Stack distance from observer (ft):_____

Emission color (black or white):_____

Sky conditions (% cloud cover):_____

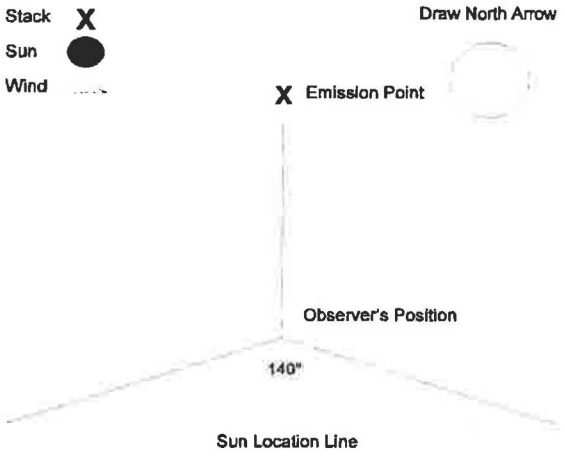
Wind speed (mph):_____

Temperature (°F):_____

Observer Name:_____

Certified? (Yes/No):_____

Observation Date and Start Time:_____



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

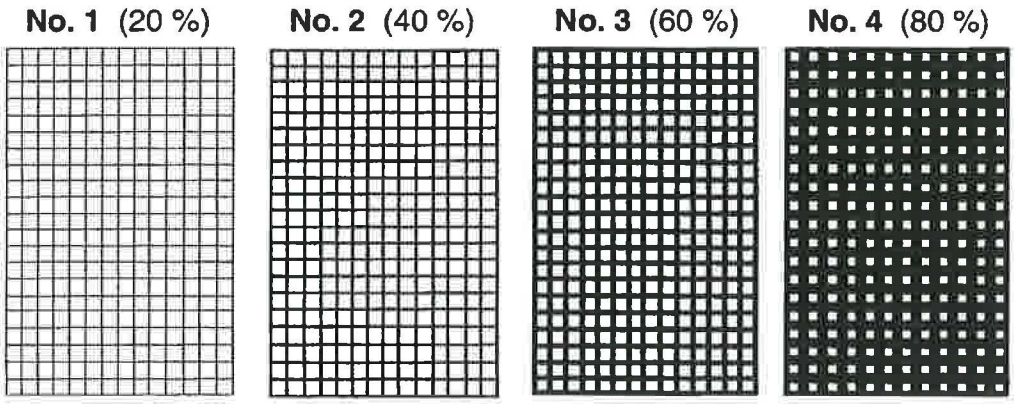
Observation Date and Start Time:_____

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

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.