

PROPOSED

DATE

14-E CAB
File No. 0802

CERTIFIED MAIL
RETURN RECEIPT REQUESTED
()

Mr. Larry Dill
County Engineer
County of Kauai
Department of Public Works
Moikena Building
4444 Rice Street, Suite 275
Lihue, Hawaii 96766

Dear Mr. Dill:

Subject: Covered Source Permit (CSP) No. 0802-01-C
Initial Application No. 0802-01
Kekaha Landfill
Landfill Gas Collection and Control System
Located At: 6900D Kaumualii Highway, Kekaha, Kauai
Date of Expiration: [five years from DATE]

The subject Covered Source Permit is issued in accordance with Hawaii Administrative Rules, Title 11, Chapter 60.1. The issuance of this permit is based on the plans, specifications and information submitted on January 14, 2014. 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 |

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

| | |
|-------------------------------|---------------------------------|
| Compliance Certification Form | |
| Monitoring Report Form: | Collection and Control System |
| Monitoring Report Form: | Opacity Exceedances |
| Annual Emissions Report Form: | Municipal Solid Waste Landfills |

PROPOSED

Mr. Larry Dill
DATE
Page 2

| | |
|---------------------------|---|
| Supplemental Report Form: | Modification/Reconstruction of MSW Landfill |
| Supplemental Report Form: | Notification of Landfill Closure |
| Supplemental Report Form: | Annual Report |
| Supplemental Report Form: | Notification of Collection and Control Equipment Removal |

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

Visible Emissions Form Requirements, State of Hawaii
Visible Emissions Form

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

If you have any questions regarding this matter, please call Mr. Kevin Kihara of the Clean Air Branch at (808) 586-4200.

Sincerely,

STUART YAMADA, P.E., CHIEF
Environmental Management Division

KK:nn
Enclosures

c: Solid and Hazardous Waste Branch
Logan Kastner, EHS – Kauai
CAB Monitoring Section

**ATTACHMENT I: STANDARD CONDITIONS
COVERED SOURCE PERMIT NO. 0802-01-C**

Issuance Date:

Expiration Date:

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

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

(Auth.: HAR §11-60.1-90)
2. This permit, or a copy thereof, shall be maintained at or near the source and shall be made available for inspection upon request. The permit shall not be willfully defaced, altered, forged, counterfeited, or falsified.

(Auth.: HAR §11-60.1-6; SIP §11-60-11)²
3. This permit is not transferable whether by operation of law or otherwise, from person to person, from place to place, or from one piece of equipment to another without the approval of the Department, except as provided in HAR, Section 11-60.1-91.

(Auth.: HAR §11-60.1-7; SIP §11-60-9)²
4. A request for transfer from person to person shall be made on forms furnished by the Department.

(Auth.: HAR §11-60.1-7)
5. In the event of any changes in control or ownership of the facilities to be constructed or modified, this permit shall be binding on all subsequent owners and operators. The permittee shall notify the succeeding owner and operator of the existence of this permit and its conditions by letter, copies of which will be forwarded to the Department and the U.S. Environmental Protection Agency (EPA), Region 9.

(Auth.: HAR §11-60.1-5, §11-60.1-7, §11-60.1-94)
6. The facility covered by this permit shall be constructed and operated in accordance with the application, and any information submitted as part of the application, for the Covered Source Permit. There shall be no deviation unless additional or revised plans are submitted to and approved by the Department, and the permit is amended to allow such deviation.

(Auth.: HAR §11-60.1-2, §11-60.1-4, §11-60.1-82, §11-60.1-84, §11-60.1-90)
7. This permit (a) does not release the permittee from compliance with other applicable statutes of the State of Hawaii, or with applicable local laws, regulations, or ordinances, and

(b) shall not constitute, nor be construed to be an approval of the design of the covered source.

(Auth.: HAR §11-60.1-5, §11-60.1-82)

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

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

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

(Auth.: HAR §11-60.1-90)

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

(Auth.: HAR §11-60.1-90)

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

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

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

(Auth.: HAR §11-60.1-90)

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

(Auth.: HAR §11-60.1-90)

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

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

(Auth.: HAR §11-60.1-90)

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

(Auth.: HAR §11-60.1-14, §11-60.1-90)

16. The permittee shall notify the Department in writing, of the **intent to shut down air pollution control equipment for necessary scheduled maintenance** at least twenty-four (24) hours prior to the planned shutdown. The submittal of this notice shall not be a defense to an enforcement action. The notice shall include the following:
 - a. Identification of the specific equipment to be taken out of service, as well as its location and permit number;
 - b. The expected length of time that the air pollution control equipment will be out of service;
 - c. The nature and quantity of emissions of air pollutants likely to be emitted during the shutdown period;
 - d. Measures such as the use of off-shift labor and equipment that will be taken to minimize the length of the shutdown period; and
 - e. The reasons why it would be impossible or impractical to shut down the source operation during the maintenance period.

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

17. **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 the malfunction or breakdown, unless the protection of personnel or public health or safety demands immediate attention to the malfunction or breakdown and makes such notification infeasible. In the latter case, the notice shall be provided as soon as

practicable. Within five (5) working days of this initial notification, the permittee shall also submit, in writing, the following information:

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

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

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

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

(Auth.: HAR §11-60.1-14, §11-60.1-90)

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

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

(Auth.: HAR §11-60.1-9, §11-60.1-90)

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

(Auth.: HAR §11-60.1-9, §11-60.1-90)

21. The permittee shall submit fees in accordance with HAR, Chapter 11-60.1, Subchapter 6.
(Auth.: HAR §11-60.1-90)
22. All certifications shall be in accordance with HAR, Section 11-60.1-4.
(Auth.: HAR §11-60.1-4, HAR §11-60.1-90)
23. The permittee shall allow the Director of Health, the Regional Administrator for the U.S. EPA and/or an authorized representative, upon presentation of credentials or other documents required by law:
 - a. To enter the premises where a source is located or emission-related activity is conducted, or where records must be kept under the conditions of this permit and inspect at reasonable times all facilities, equipment, including monitoring and air pollution control equipment, practices, operations, or records covered under the terms and conditions of this permit and request copies of records or copy records required by this permit; and
 - b. To sample or monitor at reasonable times substances or parameters to ensure compliance with this permit or applicable requirements of HAR, Chapter 11-60.1.
(Auth.: HAR §11-60.1-11, §11-60.1-90)
24. Within thirty (30) days of **permanent discontinuance of the construction, modification, relocation, or operation of the facility covered by this permit**, the discontinuance shall be reported in writing to the Department by a responsible official of the source.
(Auth.: HAR §11-60.1-8; SIP §11-60-10)²
25. Each permit renewal application shall be submitted to the Department and the U.S. EPA, Region 9, no less than twelve (12) months and no more than eighteen (18) months prior to the permit expiration date. The director may allow a permit renewal application to be submitted no less than six months prior to the permit expiration date, if the director determines that there is reasonable justification.
(Auth.: HAR §11-60.1-101, 40 CFR §70.5(a)(1)(iii))¹
26. The terms and conditions included in this permit, including any provision designed to limit a source's potential to emit, are federally enforceable unless such terms, conditions, or requirements are specifically designated as not federally enforceable.
(Auth.: HAR §11-60.1-93)
27. The compliance plan and compliance certification submittal requirements shall be in accordance with HAR, Sections 11-60.1-85 and 11-60.1-86. As specified in HAR,

Section 11-60.1-86, the compliance certification shall be submitted to the Department and the U.S. EPA, Region 9, once per year, or more frequently as set by any applicable requirement.

(Auth.: HAR §11-60.1-90)

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

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

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

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

(Auth.: HAR §11-60.1-4, §11-60.1-90)

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

(Auth.: HAR §11-60.1-5, §11-60.1-90)

¹The 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.

²The 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. 0802-01-C**

Issuance Date:

Expiration Date:

In addition to the standard conditions of the Covered Source Permit, the following special conditions shall apply to the permitted facility:

Section A. Equipment Description

1. This permit encompasses the following equipment and associated appurtenances:
 - a. Kekaha Sanitary Landfill; and
 - b. Active Landfill Gas Collection and Control system for landfill consisting of enclosed flare, extraction wells, landfill gas piping, 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 Municipal Solid Waste (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 Code of Federal Regulations (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 Part 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 Part 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 CFR, 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. A MSW landfill may also receive other types of Resource Conservation and Recovery Act, 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 a MSW landfill may be separated by access roads. A MSW landfill may be publicly or privately owned. A 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 a 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 Kekaha 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.

In addition to the requirements of Hawaii Revised Statutes, 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 Part 60, Subparts A and WWW and 40 CFR Part 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, 40 CFR §63.1930)¹

Section D. Operational Standards for the Collection and Control System

1. Landfill Air Emission Standards
 - a. The landfill shall comply with the following:
 - i. Submit a collection and control system design plan prepared by a professional engineer to the Department and U.S. EPA, Region 9, by June 2, 2015, unless Tier 2 or Tier 3 sampling demonstrates that the emission rate is less than fifty (50) megagrams per year, as specified in 40 CFR §60.757(c)(1) or (2).
 - 1) The collection and control system as described in the plan shall meet the design requirements of this attachment, Special Condition D.1.a.ii.
 - 2) The collection and control system design plan shall include any alternatives to the operational standards, test methods, procedures, compliance measures, monitoring, recordkeeping or reporting provisions of 40 CFR §§60.753 through 60.758 proposed by the owner or operator.

- 3) The collection and control system design plan shall either conform with specifications for active collection systems in 40 CFR §60.759 or include a demonstration which satisfies to the Department and/or U.S. EPA, Region 9, as applicable, the sufficiency of the alternative provisions to 40 CFR §60.759.
 - 4) The Department and/or U.S. EPA, Region 9, as applicable, shall review the information submitted under this attachment, Special Conditions D.1.a.i.1 thru D.1.a.i.3, and either approve it, disapprove it, or request that additional information be submitted. Because of the many site-specific factors involved with landfill gas system design, alternative systems may be necessary. A wide variety of system designs are possible, such as vertical wells, combination horizontal and vertical collection systems, or horizontal trenches only, leachate collection components, and passive systems.
- ii. Install a collection and control system that captures the gas generated within the landfill as required by this attachment, Special Conditions D.1.a.ii and D.1.a.iii by December 1, 2016, unless Tier 2 or Tier 3 sampling, demonstrates that the emission rate is less than fifty (50) megagrams per year, as specified in 40 CFR §60.757(c)(1) or (2).
- 1) The Active collection system shall:
 - a) Be designed to handle the maximum expected gas flow rate from the entire area of the landfill that warrants control over the intended use period of the gas control or treatment system equipment;
 - b) Collect gas from each area, cell, or group of cells in the landfill in which the initial solid waste has been placed for a period of:
 - i) Five (5) years or more if active; or
 - ii) Two (2) years or more if closed or at final grade.
 - c) Collect gas at a sufficient extraction rate; and
 - d) Be designed to minimize off-site migration of subsurface gas.
- iii. Route all the collected gas to a control system that complies with the requirements in either paragraph 1), 2), or 3) of this section.
- 1) An open flare designed and operated in accordance with 40 CFR §60.18 except as noted in 40 CFR §60.754(e);
 - 2) 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 twenty (20) parts per million (ppm) by volume, dry basis as hexane at three (3) percent oxygen. The reduction efficiency or ppm by volume shall be established by an initial performance test to be completed no later than 180 days after the initial startup of the approved control system using the test methods specified in 40 CFR §60.754(d).

- a) If a boiler or process heater is used as the control device, the landfill gas stream shall be introduced into the flame zone.
 - b) The control device shall be operated within the parameter ranges established during the initial or most recent performance test. The operating parameters to be monitored are specified in 40 CFR §60.756;
- 3) Route the collected gas to a treatment system that processes the collected gas for subsequent sale or use. All emissions from any atmospheric vent from the gas treatment system shall be subject to the requirements of this attachment, Special Conditions D.1.a.iii.1) or D.1.a.iii.2).
- iv. Operate the collection and control device installed to comply with this subpart in accordance with the provisions of 40 CFR §§60.753, 60.755, and 60.756.
 - v. The collection and control system may be capped or removed provided that all the conditions of paragraphs 1), 2), and 3) of this section are met:
 - 1) The landfill shall be a closed landfill as defined in this attachment, Special Condition B.4. A closure report shall be submitted to the Department and U.S. EPA, Region 9, as provided in this attachment, Special Condition G.8;
 - 2) The collection and control system shall have been in operation a minimum of fifteen (15) years; and
 - 3) Following the procedures specified in 40 CFR §60.754(b), the calculated NMOC gas produced by the landfill shall be less than fifty (50) megagrams per year on three (3) successive test dates. 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)¹

2. Gas Collection System Standards

Each owner or operator of a 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 monitoring reports as provided in this attachment, 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 Department and/or U.S. EPA, Region 9, as applicable.
- 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 twenty (20) percent or an oxygen level less than five (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, unless an alternative test method is established as allowed by 40 CFR §60.752(b)(2)(i).
 - ii. Unless an alternate test method is established as allowed by 40 CFR §60.752(b)(2)(i), the oxygen shall be determined by an oxygen meter using 40 CFR Part 60, Appendix A, Method 3A or 3C except that:
 - 1) The span shall be set so that the regulatory limit is between twenty (20) and fifty (50) percent of the span;
 - 2) A data recorder is not required;
 - 3) Only two (2) 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.
- d. Operate the collection system so that the methane concentration is less than 500 ppm 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 thirty (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 thirty (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 designed and operated in compliance with 40 CFR §60.752(b)(2)(iii). 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;
- f. Operate the control or treatment system at all times when the collected gas is routed to the system; and

- g. If monitoring demonstrates that the operational requirements of this attachment, 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. Visible Emissions

- a. The permittee shall take measures to control fugitive dust at all material transfer points and throughout the workyard. The Department 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 not greater than twenty (20), but not exceeding sixty (60) percent opacity for a period aggregating not more than six (6) minutes in any sixty (60) minute period.

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

Section E. Compliance Provisions

1. Except as provided in the collection and control system design plan submitted pursuant to this attachment, Special Condition D.1.a.i, the permittee shall use the following methods to determine whether the gas collection system is in compliance with this attachment, Special Conditions D.1.a.ii.1 and D.1.a.iii.

- 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_0 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. 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 fifteen (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:

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

- 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 $c = 0$ and $e^{-kc} = 1$)

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

$$Q_M = \sum_{i=1}^n 2kL_oM_i (e^{-kt_i})$$

- 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. If a collection and control system has been installed, actual flow data may be used to project the maximum expected gas generation flow rate instead of, or in conjunction with, the equations in this attachment, 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 this attachment, Special Conditions E.1.a.i and E.1.a.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 Department and/or U.S. EPA, Region 9, as applicable, 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 owner or

operator shall measure gauge pressure in the gas collection header at each individual well, monthly. If a positive pressure exists, action shall be initiated to correct the exceedance within five (5) calendar days, except for the three (3) conditions allowed under this attachment, Special Condition D.2.b. If negative pressure cannot be achieved without excess air infiltration within fifteen (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. 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 Department and/or U.S. EPA, Region 9, as applicable, for approval.

- d. Owners or operators are not required to install additional wells as required in this attachment, Special Condition E.1.c during the first 180 days after gas collection system startup.
- e. Identification of Excess Air Infiltration

For the purpose of identifying whether excess air infiltration into the landfill is occurring, the owner or operator shall monitor each well monthly for temperature and nitrogen or oxygen as provided in 40 CFR §60.753(c). If a well exceeds one of these operating parameters, action shall be initiated to correct the exceedance within five (5) calendar days. If correction of the exceedance cannot be achieved within fifteen (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. 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 Department and/or U.S. EPA, Region 9, as applicable.

- f. An owner or operator seeking to demonstrate compliance with §60.752(b)(2)(ii)(A)(4) through the use of a collection system not conforming to the specifications provided in 40 CFR §60.759, shall provide information as specified in §60.752(b)(2)(i)(C) satisfactory to the Department and/or U.S. EPA, Region 9, as applicable, demonstrating that off-site migration is being controlled.

(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 sixty (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 this attachment, 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 thirty (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 this attachment, 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 thirty (30) meters from the perimeter wells.
 - c. Surface emission monitoring shall be performed in accordance with §4.3.1 of Method 21 of 40 CFR Part 60, Appendix A, except that the probe inlet shall be placed within five (5) to ten (10) centimeters of the ground. Monitoring shall be performed during typical meteorological conditions.
 - d. Any reading of 500 ppm 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 this attachment, 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 ten (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 ten (10) days of the second exceedance. If the re-monitoring shows a third exceedance for the same location, the action specified in this attachment, Special Condition E.3.d.v shall be taken, and no further monitoring of that location is required until the action specified in this attachment, 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 ten-day (10-day) re-monitoring specified in this attachment, Special Conditions E.3.d.ii or E.3.d.iii shall be re-monitored one-month (1-month) from the initial exceedance. If the one-month (1-month) re-monitoring shows a concentration less than 500 ppm above background, no further monitoring of that location is required until the next quarterly monitoring period. If the one-month (1-month) re-monitoring shows an exceedance, the actions specified in this attachment, 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 ppm above background three (3) 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 Department and/or U.S. EPA, Region 9, as applicable, 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 ppm in air;
 - c. To meet the performance evaluation requirements in Section 3.1.3 of Method 21 of 40 CFR Part 60, Appendix A, the instrument evaluation procedures of Section 4.4 of Method 21 of 40 CFR Part 60, Appendix A shall be used; and
 - d. The calibration procedures provided in Section 4.2 of Method 21 of 40 CFR Part 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 this attachment, 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 (1) 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

- 6. If you are required by 40 CFR §60.752(b)(2) of Subpart WWW, the Federal plan, or an EPA approved and effective State or tribal plan to install a collection and control system, you must comply with the requirements in 40 CFR §§63.1960 through 63.1985 and with the general provisions of this part specified in Table 1 of 40 CFR Part 63, Subpart AAAA.

(Auth: HAR §11-60.1-3, §11-60.1-90, §11-60.1-174, 40 CFR §63.1955)¹

- 7. All affected sources must comply with the Startup, Shutdown, and Malfunction (SSM) requirements, in Subpart A of 40 CFR Part 63, Subpart AAAA, as specified in Table 1 of this subpart and all affected sources must submit compliance reports every six (6) months as specified in §63.1980(a) and (b), including information on all deviations that occurred during the six-month (6-month) reporting period. Deviations for continuous emission

monitors or numerical continuous parameter monitors must be determined using a three-hour (3 hour) monitoring block average.

(Auth: HAR §11-60.1-3, §11-60.1-90, §11-60.1-174, 40 CFR §63.1955)¹

8. Compliance with 40 CFR Part 63, Subpart AAAA, is determined in the same way it is determined for 40 CFR Part 60, Subpart WWW, including performance testing, monitoring of the collection system, continuous parameter monitoring, and other credible evidence. In addition, continuous parameter monitoring data, collected under 40 CFR §60.756(b)(1), (c)(1), and (d) of Subpart WWW, are used to demonstrate compliance with the operating conditions for control systems. If a deviation occurs, you have failed to meet the control device operating conditions described in 40 CFR Part 63, Subpart AAAA, and have deviated from the requirements of 40 CFR Part 63, Subpart AAAA. Finally, you must develop a written SSM plan according to the provisions in 40 CFR §63.6(e)(3). A copy of the SSM plan must be maintained on site. Failure to write or maintain a copy of the SSM plan is a deviation from the requirements of 40 CFR Part 63, Subpart AAAA.

(Auth: HAR §11-60.1-3, §11-60.1-90, §11-60.1-174, 40 CFR §63.1960)¹

9. A deviation is defined in 40 CFR §63.1990. For the purposes of the landfill monitoring and SSM plan requirements, deviations include the following:
 - a. A deviation occurs when the control device operating parameter boundaries described in 40 CFR §60.758(c)(1) of Subpart WWW are exceeded;
 - b. A deviation occurs when one-hour (1-hour) or more of the hours during the three-hour (3-hour) block averaging period does not constitute a valid hour of data. A valid hour of data must have measured values for at least three (3) fifteen-minute (15-minute) monitoring periods within the hour; and
 - c. A deviation occurs when a SSM plan is not developed or maintained on site.

(Auth: HAR §11-60.1-3, §11-60.1-90, §11-60.1-174, 40 CFR §63.1960, 63.1965)¹

Section F. Monitoring and Recordkeeping Requirements

Monitoring Requirements

1. Active Gas Collection System

Except as provided in the collection and control system design plan submitted pursuant to this attachment, Special Condition D.1.a.i, the 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 as provided for in this attachment, Special Condition E.1.c;

- b. Monitor nitrogen or oxygen concentration in the landfill gas on a monthly basis; as provided for in this attachment, Special Condition E.1.e; and
- c. Monitor temperature of the landfill gas on a monthly basis as provided in this attachment, Special Condition E.1.e.

(Auth: HAR §11-60.1-3, §11-60.1-90, §11-60.1-174; 40 CFR §60.756)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 forty-four (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 fifteen (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

The 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 (3) 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

All of the 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 and/or U.S. EPA, Region 9, as applicable.

(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 this attachment, 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 this attachment, Section G; and
- b. NMOC emission rate reports shall be submitted in accordance with this attachment, Special Condition G.4.

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

7. Visible Emissions (VE)

The permittee shall conduct **monthly** (*calendar month*) VE observations for the enclosed flare in accordance with 40 CFR Part 60, Appendix A, Method 9, or U.S. EPA approved equivalent methods, or alternate methods with prior written approval from the Department. For each month, 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 Requirements

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

(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, the permittee shall maintain the following records:
 - a. Equipment operating parameters specified to be monitored in this attachment, Special Conditions F.1 thru 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 five (5) years.
 - i. The maximum expected gas generation flow rate as calculated in this attachment, 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 and/or U.S. EPA, Region 9, as applicable.
 - ii. The density of wells, horizontal collectors, surface collectors, or other gas extraction devices determined using the procedures specified in this attachment, Special Condition E.1.
 - 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.
 - 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 this attachment, 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. As 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, §60.758)¹

8. 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, §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 Conditions 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. 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)**, and shall include:

- a. Information as required by the Annual Report in this attachment, Special Condition G.3; and
- b. Additional information, including:

- i. Average and maximum gauge pressure within each gas extraction well measured over six-month (6-month) period;
- ii. Average and maximum nitrogen concentration or average and maximum oxygen concentration measured over six-month (6-month) period;
- iii. Average and maximum landfill gas temperature in extraction well measured over six-month (6-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;
- 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; and
- xi. All deviations from the requirements of 40 CFR Part 63, Subpart AAAAA, including the actions taken during a startup, shutdown, or malfunction, were consistent with the procedures in the SSM plan, that occurred during the six-month (6-month) reporting 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. Annual Reports

The permittee with an active collection system shall submit to the Department and U.S. EPA, Region 9, annual reports of the recorded information in Conditions G.3.a through G.3.f of this paragraph. The initial report shall be submitted **within 180 days of installation and start-up of the collection and control system**, and shall include the initial performance test report required under 40 CFR §60.8. For enclosed combustion devices and flares, reportable exceedances are defined under 40 CFR §60.758(c).

- 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 40 CFR §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: **Annual 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 Report Submission

Pursuant to 40 CFR §63.1980, the annual report described in this attachment, Special Condition G.3, shall be updated and submitted every six (6) months.

(Auth: HAR §11-60.1-3, §11-60.1-90, §11-60.1-174; 40 CFR §60.758, 40 CFR §63.1980)¹

5. Annual Emissions Reporting

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 determines that reasonable justification exists for the extension.

(Auth: HAR §11-60.1-3, §11-60.1-90)

6. Performance Test Reports

- a. At least **thirty (30) days prior** to conducting a source performance test, the permittee shall submit to the Department a test plan in accordance with this attachment, 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 **within sixty (60) days after the completion of the performance test** in accordance with this attachment, Special Condition H.6.

(Auth: HAR §11-60.1-3, §11-60.1-90)

7. Design Capacity Increase

The permittee shall submit information regarding landfill modifications (as defined in Special Condition B.23) to the Department 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;
 - iv. Current and proposed vertical dimensions of the landfill;
 - v. Projected date of construction commencement;
 - vi. Projected waste acceptance rate for the proposed modification;
 - vii. 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;
 - viii. Certification that the permittee shall comply with each applicable requirement of this Covered Source Permit;
 - ix. Other information as may be required by the Department; and
 - x. 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)

8. Landfill Closure

The permittee shall submit a **closure report** to the Department **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);
- 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 Landfill Closure** shall be used.

The Department may request additional information as may be necessary to verify that permanent closure has taken place in accordance with 40 CFR §258.60.

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

9. Equipment Removal Notification

The permittee shall submit an equipment removal report to the Department **thirty (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 fifteen (15) year minimum control period has expired; and
 - iii. Dated copies of three (3) successive NMOC emission rate reports demonstrating that the landfill is no longer producing fifty (50) megagrams or greater of NMOC per year.
- b. The Department may request such additional information as may be necessary to verify that all of the conditions for removal in Special Condition G.11 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

10. Compliance Certification

During the permit term, the permittee shall submit at least **annually** to the Department 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 any applicable enhanced monitoring and compliance certification including the requirements of Section 114(a)(3) of the Clean Air Act or any applicable monitoring and analysis provisions of Section 504(b) of the Clean Air Act;
- f. A brief description of any deviations including identifying as possible exceptions to compliance any periods during which compliance is required and in which the excursion or exceedances as defined in 40 CFR Part 64 occurred; and
- g. Any additional information as required by the Department including information to determine compliance.

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

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

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

11. 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:

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

M_{NMOC} = mass emission rate of NMOC (Mg/yr)
 Q_{LFG} = flow rate of landfill gas (m^3/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 40 CFR Part 60, 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 40 CFR Part 60, 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 Part 60, Appendix A, by six (6) 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 Department and/or U.S. EPA, Region 9, as applicable.

(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 (ppmv) of a control system designed and operated to reduce NMOC by ninety-eight (98) weight-percent, or, when an enclosed combustion device is used for control, to either reduce NMOC by ninety-eight (98) weight percent or reduce the outlet NMOC concentration to less than twenty (20) ppm by volume, dry basis as hexane at three (3) percent oxygen.

The Department 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. The performance tests for the emissions of NMOC 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 shall be used:
 - a. The permittee shall use Method 25, 25C, or Method 18 of 40 CFR Part 60, Appendix A, to determine compliance with the ninety-eight (98) weight-percent efficiency or the twenty (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;
 - b. The permittee shall use Method 3 or 3A, to determine the oxygen for correcting the NMOC concentration as hexane to three (3) percent;

- c. The permittee shall use Method 25A in place of Method 25 in cases where the outlet concentration is less than fifty (50) ppm NMOC as carbon (eight (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); and
- e. The permittee shall use the following equation to calculate efficiency:

$$\text{Control Efficiency} = (\text{NMOC}_{\text{in}} - \text{NMOC}_{\text{out}}) / \text{NMOC}_{\text{in}}$$

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 for 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

4. 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.

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

5. Unless otherwise specified in the applicable subpart, each performance test shall consist of three separate runs using the applicable test method. Each run shall be conducted for the time and under the conditions specified in the applicable standard. For the purpose of

determining compliance with an applicable standard, the arithmetic means of results of the three (3) runs shall apply.

(Auth: HAR §11-60.1-3, §11-60.1-11, §11-60.1-90 40 CFR §60.8)²

6. 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 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 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}

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

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

8. **Within sixty (60) days after completion of the performance test**, the permittee shall submit to the Department the test report which shall include the operating conditions of the landfill gas collection and control system, 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)

9. Upon written request and justification, the Department may waive the requirement for, or a portion of, a specific performance test. The waiver request is to be submitted prior to the required test and must include documentation justifying such action. Documentation should include, but is not limited to, the results of the prior performance test indicating compliance by a wide margin, documentation of continuing compliance, and further that operations of the source have not changed since the previous 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. 28.

(Auth: HAR §11-60.1-4, §11-60.1-90)

¹The 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.

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

**ATTACHMENT II - INSIG
SPECIAL CONDITIONS – INSIGNIFICANT ACTIVITIES
COVERED SOURCE PERMIT NO. 0802-01-C**

Issuance Date:

Expiration Date:

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

Section A. Equipment Description

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

(Auth: HAR §11-60.1-3)

Section B. Operational Limitations

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

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

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

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

Section C. Monitoring and Recordkeeping Requirements

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

(Auth: HAR §11-60.1-3, §11-60.1-90)

2. All records shall be maintained for at least five (5) years from the date of any required monitoring, recordkeeping, testing, or reporting. These records shall be in a permanent form suitable for inspection and made available to the Department 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 and U.S. EPA, Region 9, the attached *Compliance Certification Form* pursuant to HAR,

Subsection 11-60.1-86. The permittee shall indicate whether or not compliance is being met with each term or condition of this permit. The compliance certification shall include at a minimum the following information:

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

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

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

In lieu of addressing each emission unit as specified in 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.

(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. 28.

(Auth: HAR §11-60.1-4, §11-60.1-90)

**ATTACHMENT III: ANNUAL FEE REQUIREMENTS
COVERED SOURCE PERMIT NO. 0802-01-C**

Issuance Date:

Expiration Date:

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

1. Annual fees shall be paid in full:
 - a. **Within 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.
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. 0802-01-C**

Issuance Date:

Expiration Date:

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

1. Complete the attached 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.

**COMPLIANCE CERTIFICATION FORM
COVERED SOURCE PERMIT NO. 0802-01-C
PAGE 1 OF ____**

Issuance Date: _____

Expiration Date: _____

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

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

For Period: _____ Date: _____

Company/Facility Name: _____

Responsible Official (Print): _____

Title: _____

Responsible Official (Signature): _____

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

**COMPLIANCE CERTIFICATION FORM
COVERED SOURCE PERMIT NO. 0802-01-C
(CONTINUED, PAGE 2 OF ___)**

Issuance Date:

Expiration Date:

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

Instructions:

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

A. Attachment I, Standard Conditions

| <u>Permit term/condition</u> | <u>Equipment(s)</u> | <u>Compliance</u> |
|------------------------------|---------------------------------------|--|
| All standard conditions | All Equipment(s) listed in the permit | <input type="checkbox"/> Continuous <input type="checkbox"/> Intermittent |

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

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

**COMPLIANCE CERTIFICATION FORM
COVERED SOURCE PERMIT NO. 0802-01-C
(CONTINUED, PAGE ____ OF ____)**

Issuance Date:

Expiration Date:

C. Special Conditions - Operational and Emissions Limitations

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

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

(Make Additional Copies if Needed)

**COMPLIANCE CERTIFICATION FORM
COVERED SOURCE PERMIT NO. 0802-01-C
(CONTINUED, PAGE ___ OF ___)**

Issuance Date:

Expiration Date:

D. Deviations

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

*Identify as possible exceptions to compliance any periods during which compliance is required and in which an excursion or exceedance as defined under 40 CFR 64 occurred.

(Make Additional Copies if Needed)

**MONITORING REPORT FORM
COLLECTION AND CONTROL SYSTEM
COVERED SOURCE PERMIT 0802-01-C
(PAGE 1 OF 3)**

Issuance Date: _____

Expiration Date: _____

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

(Make copies for Future Use)

For Period: _____ Date: _____

Facility Name: _____

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. (EC) 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 0802-01-C
(PAGE 2 of 3)**

Issuance Date:

Expiration Date:

3. 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 |
|------------------------|------|------------------|----------|----------|
| | | | | |
| | | | | |
| | | | | |
| | | | | |

4. 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 |
|------------------------|-------|-----------------|----------|----------|
| | | | | |
| | | | | |
| | | | | |
| | | | | |

5. 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 |
|-----------------------|-----------------|-----------------|----------|---------------------------|
| | | | | |
| | | | | |
| | | | | |

6. 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 |
|---------------|----------|-------------|----------------------|---------------|----------------|
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |

**ANNUAL EMISSIONS REPORT FORM
MUNICIPAL SOLID WASTE LANDFILLS
COVERED SOURCE PERMIT 0802-01-C**

Issuance Date: _____

Expiration Date: _____

In accordance with the Hawaii Administrative Rules, Title 11, Chapter 60.1, Air Pollution Control, the permittee shall report to the Department of Health the nature and amounts of emissions, 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_0 ($m^3 CH_4/Mg$ 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 ($^{\circ}C$) | | |

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: _____

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

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. 0802-01-C**

Issuance Date: _____

Expiration Date: _____

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 the landfill 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. 0802-01-C**

Issuance Date: _____

Expiration Date: _____

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 m³): _____

Final quantity of refuse-in-place (Mg **and** m³): _____

Anticipated additional capacity, if any (Mg or m³): _____

**SUPPLEMENTAL REPORT FORM
ANNUAL REPORT
COVERED SOURCE PERMIT NO. 0802-01-C
(PAGE 1 OF 2)**

Issuance Date: _____

Expiration Date: _____

In accordance with the Hawaii Administrative Rules, Title 11, Chapter 60.1, Air Pollution Control, the permittee shall report 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
ANNUAL REPORT
COVERED SOURCE PERMIT NO. 0802-01-C
(PAGE 2 OF 2)**

Issuance Date:

Expiration Date:

In accordance with the Hawaii Administrative Rules, Title 11, Chapter 60.1, Air Pollution Control, the permittee shall report 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. 0802-01-C**

Issuance Date: _____

Expiration Date: _____

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 m³): _____

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 fifteen (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 fifty (50) megagrams or greater of NMOC per year. (Use equations for landfills without a collection and control system to make this determination.)

**VISIBLE EMISSIONS FORM REQUIREMENTS
STATE OF HAWAII
COVERED SOURCE PERMIT NO. 0802-01-C**

Issuance Date:

Expiration Date:

The following Visible Emissions (VE) Form shall be completed **monthly** (*each calendar month*) for each equipment subject to opacity limits in accordance with Method 9. At least **annually** (*calendar year*), VE observations shall be conducted for each equipment subject to opacity limits by a certified reader in accordance with Method 9. The VE Form shall be completed as follows:

1. Visible emissions observations shall take place during the day only. The opacity shall be noted in five (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 VE 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 VE Forms for recordkeeping. These records shall be in a permanent form suitable for inspection, retained for a minimum of five (5) years, and made available to the Department of Health, or their representative upon request.

**VISIBLE EMISSIONS FORM
STATE OF HAWAII
COVERED SOURCE PERMIT NO. 0802-01-C**

Issuance Date: _____

Expiration Date: _____

(Make Copies for Future Use For Each Equipment)

Permit No.: 0802-01-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): _____

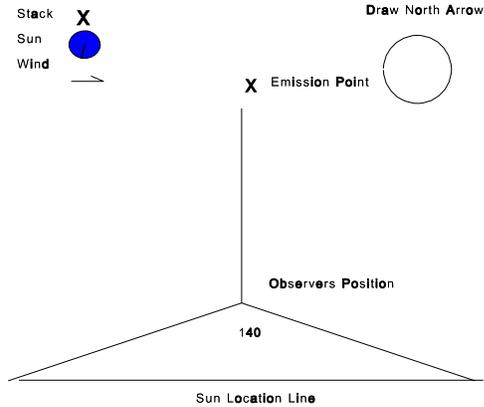
Wind speed (mph): _____

Temperature (EF): _____

Observer Name: _____

Certified? (Yes/No): _____

Observation Date and Start Time: _____



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

Observation Date and Start Time: _____

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