



Mitchell E. Daniels, Jr.  
Governor

Thomas W. Easterly  
Commissioner

100 North Senate Avenue  
Indianapolis, Indiana 46204  
MC 61-53  
(317) 232-8603  
(800) 451-6027  
www.IN.gov/idem

TO: Interested Parties / Applicant  
DATE: February 5, 2008  
RE: Prairie View Recycling and Disposal Facility / 141-18138-00051  
FROM: Matthew Stuckey, Deputy Branch Chief  
Permits Branch  
Office of Air Quality

### Notice of Decision: Approval – Effective Immediately

Please be advised that on behalf of the Commissioner of the Department of Environmental Management, I have issued a decision regarding the enclosed matter. Pursuant to IC 13-15-5-3, this permit is effective immediately, unless a petition for stay of effectiveness is filed and granted, and may be revoked or modified in accordance with the provisions of IC 13-15-7-1.

If you wish to challenge this decision, IC 4-21.5-3-7 and IC 13-15-6-1(b) or IC 13-15-6-1(a) require that you file a petition for administrative review. This petition may include a request for stay of effectiveness and must be submitted to the Office of Environmental Adjudication, 100 North Senate Avenue, Government Center North, Suite N 501E, Indianapolis, IN 46204.

For an **initial Title V Operating Permit**, a petition for administrative review must be submitted to the Office of Environmental Adjudication within **thirty (30)** days from the receipt of this notice provided under IC 13-15-5-3, pursuant to IC 13-15-6-1(b).

For a **Title V Operating Permit renewal**, a petition for administrative review must be submitted to the Office of Environmental Adjudication within **fifteen (15)** days from the receipt of this notice provided under IC 13-15-5-3, pursuant to IC 13-15-6-1(a).

The filing of a petition for administrative review is complete on the earliest of the following dates that apply to the filing:

- (1) the date the document is delivered to the Office of Environmental Adjudication (OEA);
- (2) the date of the postmark on the envelope containing the document, if the document is mailed to OEA by U.S. mail; or
- (3) The date on which the document is deposited with a private carrier, as shown by receipt issued by the carrier, if the document is sent to the OEA by private carrier.

The petition must include facts demonstrating that you are either the applicant, a person aggrieved or adversely affected by the decision or otherwise entitled to review by law. Please identify the permit, decision, or other order for which you seek review by permit number, name of the applicant, location, date of this notice and all of the following:

- (1) the name and address of the person making the request;
- (2) the interest of the person making the request;
- (3) identification of any persons represented by the person making the request;
- (4) the reasons, with particularity, for the request;
- (5) the issues, with particularity, proposed for considerations at any hearing; and
- (6) identification of the terms and conditions which, in the judgment of the person making the request, would be appropriate in the case in question to satisfy the requirements of the law governing documents of the type issued by the Commissioner.

Pursuant to 326 IAC 2-7-18(d), any person may petition the U.S. EPA to object to the issuance of an initial Title V operating permit, permit renewal, or modification within sixty (60) days of the end of the forty-five (45) day EPA review period. Such an objection must be based only on issues that were raised with reasonable specificity during the public comment period, unless the petitioner demonstrates that it was impracticable to raise such issues, or if the grounds for such objection arose after the comment period.

To petition the U.S. EPA to object to the issuance of a Title V operating permit, contact:

U.S. Environmental Protection Agency  
401 M Street  
Washington, D.C. 20406

If you have technical questions regarding the enclosed documents, please contact the Office of Air Quality, Permits Branch at (317) 233-0178. Callers from within Indiana may call toll-free at 1-800-451-6027, ext. 3-0178.



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## Part 70 Operating Permit Renewal OFFICE OF AIR QUALITY

### Prairie View Recycling and Disposal Facility 15505 Shively Road Wyatt, Indiana 46595

(herein known as the Permittee) is hereby authorized to operate subject to the conditions contained herein, the source described in Section A (Source Summary) of this permit.

**The Permittee must comply with all conditions of this permit. Noncompliance with any provisions of this permit is grounds for enforcement action; permit termination, revocation and reissuance, or modification; or denial of a permit renewal application. Noncompliance with any provision of this permit, except any provision specifically designated as not federally enforceable, constitutes a violation of the Clean Air Act. It shall not be a defense for the Permittee in an enforcement action that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of this permit. An emergency does constitute an affirmative defense in an enforcement action provided the Permittee complies with the applicable requirements set forth in Section B, Emergency Provisions.**

This permit is issued in accordance with 326 IAC 2 and 40 CFR Part 70 Appendix A and contains the conditions and provisions specified in 326 IAC 2-7 as required by 42 U.S.C. 7401, et. seq. (Clean Air Act as amended by the 1990 Clean Air Act Amendments), 40 CFR Part 70.6, IC 13-15 and IC 13-17.

Operation Permit No.: T141-18138-00051	
Issued by:  <i>Original signed by</i> Matthew Stuckey, Deputy Branch Chief Permits Branch Office of Air Quality	Issuance Date: February 5, 2008  Expiration Date: February 5, 2013

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## SECTION A SOURCE SUMMARY

This permit is based on information requested by the Indiana Department of Environmental Management (IDEM), Office of Air Quality (OAQ). The information describing the source contained in conditions A.1 through A.3 is descriptive information and does not constitute enforceable conditions. However, the Permittee should be aware that a physical change or a change in the method of operation that may render this descriptive information obsolete or inaccurate may trigger requirements for the Permittee to obtain additional permits or seek modification of this permit pursuant to 326 IAC 2, or change other applicable requirements presented in the permit application.

### A.1 General Information [326 IAC 2-7-4(c)][326 IAC 2-7-5(15)][326 IAC 2-7-1(22)]

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The Permittee owns and operates a stationary municipal solid waste landfill.

Source Address:	15505 Shively Road, Wyatt, IN 46595
Mailing Address:	P.O. Box 128, 15505 Shively Road, Wyatt, IN 46595
General Source Phone Number:	574-276-8824
SIC Code:	4953, 4911
County Location:	St. Joseph
Source Location Status:	Attainment for all criteria pollutants
Source Status:	Part 70 Operating Permit Program Major Source, under PSD Rules Minor Source, Section 112 of the Clean Air Act Not 1 of 28 Source Categories

### A.2 Emission Units and Pollution Control Equipment Summary [326 IAC 2-7-4(c)(3)][326 IAC 2-7-5(15)]

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This stationary source consists of the following emission units and pollution control devices:

- (a) One (1) solid waste disposal facility that opened in 1981 and has a design capacity of 15.30 Million Megagrams.
- (b) One (1) open flare with a capacity of 2,130 scfm of landfill gas, constructed in 2004. There is no physical means to bypass the landfill gas flow before it reaches the open flare.
- (c) Four (4) Caterpillar 3516 landfill gas fueled engine/generator sets, identified as EG1, EG2, EG3, and EG4, and a single fuel gas compressor. The generators are rated at 800 kilowatts each, and were installed in 1994.
- (d) Gas treatment system, installed in 1994, consisting of dewatering, compressions, cooling, filtering and heat exchange operations. The gas treatment system is enclosed and has no atmospheric vents.
- (e) Four (4) Caterpillar 3516 landfill gas fueled reciprocating internal combustion engine/generator sets, identified as EG5, EG6, EG7, and EG8, to be installed in 2007. The engines are rated at 1148 horsepower each, and each exhausts through one (1) stack, identified as ES5, ES6, ES7, and ES8, respectively.

A.3 Insignificant Activities [326 IAC 2-7-1(21)][326 IAC 2-7-4(c)][326 IAC 2-7-5(15)]

This stationary source also includes the following insignificant activities, as defined in 326 IAC 2-7-1(21):

- (a) One (1) tipper engine, identified as TIPPER1, with a rated capacity of 115 horsepower. [326 IAC 6.5-1]
- (b) Three (3) passive vent flares, each with a capacity of 50 scfm of landfill gas, constructed in 2005. [326 IAC 6.5-1]
- (c) One (1) 20 gallon small parts washing station, using Safety Kleen or other similar cleaning solvent. [326 IAC 8-3-2][326 IAC 8-3-5]
- (d) Paved and unpaved roads and parking lots with public access. [326 IAC 6-4]

A.4 Part 70 Permit Applicability [326 IAC 2-7-2]

This stationary source is required to have a Part 70 permit by 326 IAC 2-7-2 (Applicability) because:

- (a) It is a major source, as defined in 326 IAC 2-7-1(22);
- (b) It is a source in a source category designated by the United States Environmental Protection Agency (U.S. EPA) under 40 CFR 70.3 (Part 70 - Applicability).

## SECTION B GENERAL CONDITIONS

### B.1 Definitions [326 IAC 2-7-1]

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Terms in this permit shall have the definition assigned to such terms in the referenced regulation. In the absence of definitions in the referenced regulation, the applicable definitions found in the statutes or regulations (IC 13-11, 326 IAC 1-2 and 326 IAC 2-7) shall prevail.

### B.2 Permit Term [326 IAC 2-7-5(2)][326 IAC 2-1.1-9.5][326 IAC 2-7-4(a)(1)(D)][IC 13-15-3-6(a)]

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- (a) This permit, T141-18138-00051, is issued for a fixed term of five (5) years from the issuance date of this permit, as determined in accordance with IC 4-21.5-3-5(f) and IC 13-15-5-3. Subsequent revisions, modifications, or amendments of this permit do not affect the expiration date of this permit.
- (b) If IDEM, OAQ, upon receiving a timely and complete renewal permit application, fails to issue or deny the permit renewal prior to the expiration date of this permit, this existing permit shall not expire and all terms and conditions shall continue in effect, including any permit shield provided in 326 IAC 2-7-15, until the renewal permit has been issued or denied.

### B.3 Term of Conditions [326 IAC 2-1.1-9.5]

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Notwithstanding the permit term of a permit to construct, a permit to operate, or a permit modification, any condition established in a permit issued pursuant to a permitting program approved in the state implementation plan shall remain in effect until:

- (a) the condition is modified in a subsequent permit action pursuant to Title I of the Clean Air Act; or
- (b) the emission unit to which the condition pertains permanently ceases operation.

### B.4 Enforceability [326 IAC 2-7-7]

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Unless otherwise stated, all terms and conditions in this permit, including any provisions designed to limit the source's potential to emit, are enforceable by IDEM, the United States Environmental Protection Agency (U.S. EPA) and by citizens in accordance with the Clean Air Act.

### B.5 Severability [326 IAC 2-7-5(5)]

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The provisions of this permit are severable; a determination that any portion of this permit is invalid shall not affect the validity of the remainder of the permit.

### B.6 Property Rights or Exclusive Privilege [326 IAC 2-7-5(6)(D)]

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

### B.7 Duty to Provide Information [326 IAC 2-7-5(6)(E)]

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- (a) The Permittee shall furnish to IDEM, OAQ, within a reasonable time, any information that IDEM, OAQ may request in writing to determine whether cause exists for modifying, revoking and reissuing, or terminating this permit, or to determine compliance with this permit. The submittal by the Permittee does require the certification by the "responsible official" as defined by 326 IAC 2-7-1(34). Upon request, the Permittee shall also furnish to IDEM, OAQ copies of records required to be kept by this permit.
- (b) For information furnished by the Permittee to IDEM, OAQ, the Permittee may include a claim of confidentiality in accordance with 326 IAC 17.1. When furnishing copies of requested records directly to U. S. EPA, the Permittee may assert a claim of confidentiality in accordance with 40 CFR 2, Subpart B.

B.8 Certification [326 IAC 2-7-4(f)][326 IAC 2-7-6(1)][326 IAC 2-7-5(3)(C)]

- (a) Where specifically designated by this permit or required by an applicable requirement, any application form, report, or compliance certification submitted shall contain certification by the "responsible official" of truth, accuracy, and completeness. This certification shall state that, based on information and belief formed after reasonable inquiry, the statements and information in the document are true, accurate, and complete.
- (b) One (1) certification shall be included, using the attached Certification Form, with each submittal requiring certification. One (1) certification may cover multiple forms in one (1) submittal.
- (c) The "responsible official" is defined at 326 IAC 2-7-1(34).

B.9 Annual Compliance Certification [326 IAC 2-7-6(5)]

- (a) The Permittee shall annually submit a compliance certification report which addresses the status of the source's compliance with the terms and conditions contained in this permit, including emission limitations, standards, or work practices. All certifications shall cover the time period from January 1 to December 31 of the previous year, and shall be submitted no later than April 15 of each year to:

Indiana Department of Environmental Management  
Compliance Branch, Office of Air Quality  
100 North Senate Avenue  
MC 61-53 IGCN 1003  
Indianapolis, Indiana 46204-2251

and

United States Environmental Protection Agency, Region V  
Air and Radiation Division, Air Enforcement Branch - Indiana (AE-17J)  
77 West Jackson Boulevard  
Chicago, Illinois 60604-3590

- (b) The annual compliance certification report required by this permit shall be considered timely if the date postmarked on the envelope or certified mail receipt, or affixed by the shipper on the private shipping receipt, is on or before the date it is due. If the document is submitted by any other means, it shall be considered timely if received by IDEM, OAQ on or before the date it is due.
- (c) The annual compliance certification report shall include the following:
  - (1) The appropriate identification of each term or condition of this 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 consistent with 326 IAC 2-7-5(3); and
  - (5) Such other facts, as specified in Sections D of this permit, as IDEM, OAQ may require to determine the compliance status of the source.

The submittal by the Permittee does require the certification by the "responsible official" as defined by 326 IAC 2-7-1(34).

B.10 Preventive Maintenance Plan [326 IAC 2-7-5(1),(3) and (13)][326 IAC 2-7-6(1) and (6)][326 IAC 1-6-3]

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- (a) If required by specific condition(s) in Section D of this permit, the Permittee shall maintain and implement Preventive Maintenance Plans (PMPs) including the following information on each facility:
- (1) Identification of the individual(s) responsible for inspecting, maintaining, and repairing emission control devices;
  - (2) A description of the items or conditions that will be inspected and the inspection schedule for said items or conditions; and
  - (3) Identification and quantification of the replacement parts that will be maintained in inventory for quick replacement.
- (b) A copy of the PMPs shall be submitted to IDEM, OAQ upon request and within a reasonable time, and shall be subject to review and approval by IDEM, OAQ. IDEM, OAQ may require the Permittee to revise its PMPs whenever lack of proper maintenance causes or is the primary contributor to an exceedance of any limitation on emissions or potential to emit. The PMPs do not require the certification by the "responsible official" as defined by 326 IAC 2-7-1(34).
- (c) To the extent the Permittee is required by 40 CFR Part 60/63 to have an Operation Maintenance, and Monitoring (OMM) Plan for a unit, such Plan is deemed to satisfy the PMP requirements of 326 IAC 1-6-3 for that unit.

B.11 Emergency Provisions [326 IAC 2-7-16]

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- (a) An emergency, as defined in 326 IAC 2-7-1(12), is not an affirmative defense for an action brought for noncompliance with a federal or state health-based emission limitation.
- (b) An emergency, as defined in 326 IAC 2-7-1(12), constitutes an affirmative defense to an action brought for noncompliance with a technology-based emission limitation if the affirmative defense of an emergency is demonstrated through properly signed, contemporaneous operating logs or other relevant evidence that describe the following:
- (1) An emergency occurred and the Permittee can, to the extent possible, identify the causes of the emergency;
  - (2) The permitted facility was at the time being properly operated;
  - (3) During the period of an emergency, the Permittee took all reasonable steps to minimize levels of emissions that exceeded the emission standards or other requirements in this permit;
  - (4) For each emergency lasting one (1) hour or more, the Permittee notified IDEM, OAQ, and Northern Regional Office within four (4) daytime business hours after the beginning of the emergency, or after the emergency was discovered or reasonably should have been discovered;

Telephone Number: 1-800-451-6027 (ask for Office of Air Quality,  
Compliance Section), or  
Telephone Number: 317-233-0178 (ask for Compliance Section)

Facsimile Number: 317-233-6865  
Northern Regional Office phone: (574) 245-4870; fax: (574) 245-4877.

and

Northern Regional Office  
220 W. Colfax Avenue., Ste 200  
South Bend, Indiana 46601-1634

- (5) For each emergency lasting one (1) hour or more, the Permittee submitted the attached Emergency Occurrence Report Form or its equivalent, either by mail or facsimile to:

Indiana Department of Environmental Management  
Compliance Branch, Office of Air Quality  
100 North Senate Avenue  
MC 61-53 IGCN 1003  
Indianapolis, Indiana 46204-2251

within two (2) working days of the time when emission limitations were exceeded due to the emergency.

The notice fulfills the requirement of 326 IAC 2-7-5(3)(C)(ii) and must contain the following:

- (A) A description of the emergency;
- (B) Any steps taken to mitigate the emissions; and
- (C) Corrective actions taken.

The notification which shall be submitted by the Permittee does not require the certification by the "responsible official" as defined by 326 IAC 2-7-1(34).

- (6) The Permittee immediately took all reasonable steps to correct the emergency.
- (c) In any enforcement proceeding, the Permittee seeking to establish the occurrence of an emergency has the burden of proof.
  - (d) This emergency provision supersedes 326 IAC 1-6 (Malfunctions). This permit condition is in addition to any emergency or upset provision contained in any applicable requirement.
  - (e) The Permittee seeking to establish the occurrence of an emergency shall make records available upon request to ensure that failure to implement a PMP did not cause or contribute to an exceedance of any limitations on emissions. However, IDEM, OAQ may require that the Preventive Maintenance Plans required under 326 IAC 2-7-4(c)(9) be revised in response to an emergency.
  - (f) Failure to notify IDEM, OAQ by telephone or facsimile of an emergency lasting more than one (1) hour in accordance with (b)(4) and (5) of this condition shall constitute a violation of 326 IAC 2-7 and any other applicable rules.

- (g) If the emergency situation causes a deviation from a technology-based limit, the Permittee may continue to operate the affected emitting facilities during the emergency provided the Permittee immediately takes all reasonable steps to correct the emergency and minimize emissions.
- (h) The Permittee shall include all emergencies in the Quarterly Deviation and Compliance Monitoring Report.

B.12 Permit Shield [326 IAC 2-7-15][326 IAC 2-7-20][326 IAC 2-7-12]

- (a) Pursuant to 326 IAC 2-7-15, the Permittee has been granted a permit shield. The permit shield provides that compliance with the conditions of this permit shall be deemed compliance with any applicable requirements as of the date of permit issuance, provided that either the applicable requirements are included and specifically identified in this permit or the permit contains an explicit determination or concise summary of a determination that other specifically identified requirements are not applicable. The Indiana statutes from IC 13 and rules from 326 IAC, referenced in conditions in this permit, are those applicable at the time the permit was issued. The issuance or possession of this permit shall not alone constitute a defense against an alleged violation of any law, regulation or standard, except for the requirement to obtain a Part 70 permit under 326 IAC 2-7 or for applicable requirements for which a permit shield has been granted.

This permit shield does not extend to applicable requirements which are promulgated after the date of issuance of this permit unless this permit has been modified to reflect such new requirements.

- (b) If, after issuance of this permit, it is determined that the permit is in nonconformance with an applicable requirement that applied to the source on the date of permit issuance, IDEM, OAQ, shall immediately take steps to reopen and revise this permit and issue a compliance order to the Permittee to ensure expeditious compliance with the applicable requirement until the permit is reissued. The permit shield shall continue in effect so long as the Permittee is in compliance with the compliance order.
- (c) No permit shield shall apply to any permit term or condition that is determined after issuance of this permit to have been based on erroneous information supplied in the permit application. Erroneous information means information that the Permittee knew to be false, or in the exercise of reasonable care should have been known to be false, at the time the information was submitted.
- (d) Nothing in 326 IAC 2-7-15 or in this permit shall alter or affect the following:
  - (1) The provisions of Section 303 of the Clean Air Act (emergency orders), including the authority of the U.S. EPA under Section 303 of the Clean Air Act;
  - (2) The liability of the Permittee for any violation of applicable requirements prior to or at the time of this permit's issuance;
  - (3) The applicable requirements of the acid rain program, consistent with Section 408(a) of the Clean Air Act; and
  - (4) The ability of U.S. EPA to obtain information from the Permittee under Section 114 of the Clean Air Act.

- (e) This permit shield is not applicable to any change made under 326 IAC 2-7-20(b)(2) (Sections 502(b)(10) of the Clean Air Act changes) and 326 IAC 2-7-20(c)(2) (trading based on State Implementation Plan (SIP) provisions).
- (f) This permit shield is not applicable to modifications eligible for group processing until after IDEM, OAQ, has issued the modifications. [326 IAC 2-7-12(c)(7)]
- (g) This permit shield is not applicable to minor Part 70 permit modifications until after IDEM, OAQ, has issued the modification. [326 IAC 2-7-12(b)(8)]

B.13 Prior Permits Superseded [326 IAC 2-1.1-9.5][326 IAC 2-7-10.5]

- (a) All terms and conditions of permits established prior to T141-18138-00051 and issued pursuant to permitting programs approved into the state implementation plan have been either:
  - (1) incorporated as originally stated,
  - (2) revised under 326 IAC 2-7-10.5, or
  - (3) deleted under 326 IAC 2-7-10.5.
- (b) Provided that all terms and conditions are accurately reflected in this permit, all previous registrations and permits are superseded by this Part 70 operating permit.

B.14 Termination of Right to Operate [326 IAC 2-7-10][326 IAC 2-7-4(a)]

The Permittee's right to operate this source terminates with the expiration of this permit unless a timely and complete renewal application is submitted at least nine (9) months prior to the date of expiration of the source's existing permit, consistent with 326 IAC 2-7-3 and 326 IAC 2-7-4(a).

B.15 Deviations from Permit Requirements and Conditions [326 IAC 2-7-5(3)(C)(ii)]

- (a) Deviations from any permit requirements (for emergencies see Section B - Emergency Provisions), the probable cause of such deviations, and any response steps or preventive measures taken shall be reported to:

Indiana Department of Environmental Management  
Compliance Data Section, Office of Air Quality  
100 North Senate Avenue  
MC 61-53 IGCN 1003  
Indianapolis, Indiana 46204-2251

using the attached Quarterly Deviation and Compliance Monitoring Report, or its equivalent, except as allowed for in 40 CFR 60, Subpart WWW. A deviation required to be reported pursuant to an applicable requirement that exists independent of this permit, shall be reported according to the schedule stated in the applicable requirement and does not need to be included in this report.

The Quarterly Deviation and Compliance Monitoring Report does require the certification by the "responsible official" as defined by 326 IAC 2-7-1(34).

- (b) A deviation is an exceedance of a permit limitation or a failure to comply with a requirement of the permit.

B.16 Permit Modification, Reopening, Revocation and Reissuance, or Termination  
[326 IAC 2-7-5(6)(C)][326 IAC 2-7-8(a)][326 IAC 2-7-9]

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- (a) This permit may be modified, reopened, revoked and reissued, or terminated for cause. The filing of a request by the Permittee for a Part 70 Operating Permit modification, revocation and reissuance, or termination, or of a notification of planned changes or anticipated noncompliance does not stay any condition of this permit. [326 IAC 2-7-5(6)(C)] The notification by the Permittee does require the certification by the "responsible official" as defined by 326 IAC 2-7-1(34).
- (b) This permit shall be reopened and revised under any of the circumstances listed in IC 13-15-7-2 or if IDEM, OAQ determines any of the following:
- (1) That this permit contains a material mistake.
  - (2) That inaccurate statements were made in establishing the emissions standards or other terms or conditions.
  - (3) That this permit must be revised or revoked to assure compliance with an applicable requirement. [326 IAC 2-7-9(a)(3)]
- (c) Proceedings by IDEM, OAQ to reopen and revise this permit shall follow the same procedures as apply to initial permit issuance and shall affect only those parts of this permit for which cause to reopen exists. Such reopening and revision shall be made as expeditiously as practicable. [326 IAC 2-7-9(b)]
- (d) The reopening and revision of this permit, under 326 IAC 2-7-9(a), shall not be initiated before notice of such intent is provided to the Permittee by IDEM, OAQ at least thirty (30) days in advance of the date this permit is to be reopened, except that IDEM, OAQ may provide a shorter time period in the case of an emergency. [326 IAC 2-7-9(c)]

B.17 Permit Renewal [326 IAC 2-7-3][326 IAC 2-7-4][326 IAC 2-7-8(e)]

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- (a) The application for renewal shall be submitted using the application form or forms prescribed by IDEM, OAQ and shall include the information specified in 326 IAC 2-7-4. Such information shall be included in the application for each emission unit at this source, except those emission units included on the trivial or insignificant activities list contained in 326 IAC 2-7-1(21) and 326 IAC 2-7-1(40). The renewal application does require the certification by the "responsible official" as defined by 326 IAC 2-7-1(34).

Request for renewal shall be submitted to:

Indiana Department of Environmental Management  
Permits Branch, Office of Air Quality  
100 North Senate Avenue  
MC 61-53 IGCN 1003  
Indianapolis, Indiana 46204-2251

- (b) A timely renewal application is one that is:
- (1) Submitted at least nine (9) months prior to the date of the expiration of this permit; and
  - (2) If the date postmarked on the envelope or certified mail receipt, or affixed by the shipper on the private shipping receipt, is on or before the date it is due. If the document is submitted by any other means, it shall be considered timely if received by IDEM, OAQ on or before the date it is due.

- (c) If the Permittee submits a timely and complete application for renewal of this permit, the source's failure to have a permit is not a violation of 326 IAC 2-7 until IDEM, OAQ takes final action on the renewal application, except that this protection shall cease to apply if, subsequent to the completeness determination, the Permittee fails to submit by the deadline specified in writing by IDEM, OAQ any additional information identified as being needed to process the application.

**B.18 Permit Amendment or Modification [326 IAC 2-7-11][326 IAC 2-7-12][40 CFR 72]**

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- (a) Permit amendments and modifications are governed by the requirements of 326 IAC 2-7-11 or 326 IAC 2-7-12 whenever the Permittee seeks to amend or modify this permit.

- (b) Any application requesting an amendment or modification of this permit shall be submitted to:

Indiana Department of Environmental Management  
Permits Branch, Office of Air Quality  
100 North Senate Avenue  
MC 61-53 IGCN 1003  
Indianapolis, Indiana 46204-2251

Any such application shall be certified by the "responsible official" as defined by 326 IAC 2-7-1(34).

- (c) The Permittee may implement administrative amendment changes addressed in the request for an administrative amendment immediately upon submittal of the request. [326 IAC 2-7-11(c)(3)]

**B.19 Permit Revision Under Economic Incentives and Other Programs [326 IAC 2-7-5(8)][326 IAC 2-7-12(b)(2)]**

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- (a) No Part 70 permit revision shall be required under any approved economic incentives, marketable Part 70 permits, emissions trading, and other similar programs or processes for changes that are provided for in a Part 70 permit.

- (b) Notwithstanding 326 IAC 2-7-12(b)(1) and 326 IAC 2-7-12(c)(1), minor Part 70 permit modification procedures may be used for Part 70 modifications involving the use of economic incentives, marketable Part 70 permits, emissions trading, and other similar approaches to the extent that such minor Part 70 permit modification procedures are explicitly provided for in the applicable State Implementation Plan (SIP) or in applicable requirements promulgated or approved by the U.S. EPA.

**B.20 Operational Flexibility [326 IAC 2-7-20][326 IAC 2-7-10.5]**

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- (a) The Permittee may make any change or changes at the source that are described in 326 IAC 2-7-20(b),(c), or (e) without a prior permit revision, if each of the following conditions is met:

- (1) The changes are not modifications under any provision of Title I of the Clean Air Act;
- (2) Any preconstruction approval required by 326 IAC 2-7-10.5 has been obtained;
- (3) The changes do not result in emissions which exceed the limitations provided in this permit (whether expressed herein as a rate of emissions or in terms of total emissions);

- (4) The Permittee notifies the:

Indiana Department of Environmental Management  
Permits Branch, Office of Air Quality  
100 North Senate Avenue  
MC 61-53 IGCN 1003  
Indianapolis, Indiana 46204-2251

and

United States Environmental Protection Agency, Region V  
Air and Radiation Division, Regulation Development Branch - Indiana (AR-18J)  
77 West Jackson Boulevard  
Chicago, Illinois 60604-3590

in advance of the change by written notification at least ten (10) days in advance of the proposed change. The Permittee shall attach every such notice to the Permittee's copy of this permit; and

- (5) The Permittee maintains records on-site, on a rolling five (5) year basis, which document all such changes and emission trades that are subject to 326 IAC 2-7-20(b),(c), or (e). The Permittee shall make such records available, upon reasonable request, for public review.

Such records shall consist of all information required to be submitted to IDEM, OAQ in the notices specified in 326 IAC 2-7-20(b)(1), (c)(1), and (e)(2).

- (b) The Permittee may make Section 502(b)(10) of the Clean Air Act changes (this term is defined at 326 IAC 2-7-1(36)) without a permit revision, subject to the constraint of 326 IAC 2-7-20(a). For each such Section 502(b)(10) of the Clean Air Act change, the required written notification shall include the following:

- (1) A brief description of the change within the source;
- (2) The date on which the change will occur;
- (3) Any change in emissions; and
- (4) Any permit term or condition that is no longer applicable as a result of the change.

The notification which shall be submitted is not considered an application form, report or compliance certification. Therefore, the notification by the Permittee does not require the certification by the "responsible official" as defined by 326 IAC 2-7-1(34).

- (c) Emission Trades [326 IAC 2-7-20(c)]  
The Permittee may trade emissions increases and decreases at the source, where the applicable SIP provides for such emission trades without requiring a permit revision, subject to the constraints of Section (a) of this condition and those in 326 IAC 2-7-20(c).
- (d) Alternative Operating Scenarios [326 IAC 2-7-20(d)]  
The Permittee may make changes at the source within the range of alternative operating scenarios that are described in the terms and conditions of this permit in accordance with 326 IAC 2-7-5(9). No prior notification of IDEM, OAQ, or U.S. EPA is required.

- (e) Backup fuel switches specifically addressed in, and limited under, Section D of this permit shall not be considered alternative operating scenarios. Therefore, the notification requirements of part (a) of this condition do not apply.

B.21 Source Modification Requirement [326 IAC 2-7-10.5]

- (a) A modification, construction, or reconstruction is governed by the requirements of 326 IAC 2 and 326 IAC 2-7-10.5.
- (b) Any modification at an existing major source is governed by the requirements of 326 IAC 2-2 and/or 326 IAC 2-3 (for sources located in NA areas).

B.22 Inspection and Entry [326 IAC 2-7-6][IC 13-14-2-2][IC 13-30-3-1][IC 13-17-3-2]

Upon presentation of proper identification cards, credentials, and other documents as may be required by law, and subject to the Permittee's right under all applicable laws and regulations to assert that the information collected by the agency is confidential and entitled to be treated as such, the Permittee shall allow IDEM, OAQ, U.S. EPA, or an authorized representative to perform the following:

- (a) Enter upon the Permittee's premises where a Part 70 source is located, or emissions related activity is conducted, or where records must be kept under the conditions of this permit;
- (b) As authorized by the Clean Air Act, IC 13-14-2-2, IC 13-17-3-2, and IC 13-30-3-1, have access to and copy any records that must be kept under the conditions of this permit;
- (c) As authorized by the Clean Air Act, IC 13-14-2-2, IC 13-17-3-2, and IC 13-30-3-1, inspect any facilities, equipment (including monitoring and air pollution control equipment), practices, or operations regulated or required under this permit;
- (d) As authorized by the Clean Air Act, IC 13-14-2-2, IC 13-17-3-2, and IC 13-30-3-1, sample or monitor substances or parameters for the purpose of assuring compliance with this permit or applicable requirements; and
- (e) As authorized by the Clean Air Act, IC 13-14-2-2, IC 13-17-3-2, and IC 13-30-3-1, utilize any photographic, recording, testing, monitoring, or other equipment for the purpose of assuring compliance with this permit or applicable requirements.

B.23 Transfer of Ownership or Operational Control [326 IAC 2-7-11]

- (a) The Permittee must comply with the requirements of 326 IAC 2-7-11 whenever the Permittee seeks to change the ownership or operational control of the source and no other change in the permit is necessary.
- (b) Any application requesting a change in the ownership or operational control of the source shall contain a written agreement containing a specific date for transfer of permit responsibility, coverage and liability between the current and new Permittee. The application shall be submitted to:

Indiana Department of Environmental Management  
Permits Branch, Office of Air Quality  
100 North Senate Avenue  
MC 61-53 IGCN 1003  
Indianapolis, Indiana 46204-2251

The application which shall be submitted by the Permittee does require the certification by the "responsible official" as defined by 326 IAC 2-7-1(34).

- (c) The Permittee may implement administrative amendment changes addressed in the request for an administrative amendment immediately upon submittal of the request. [326 IAC 2-7-11(c)(3)]

B.24 Annual Fee Payment [326 IAC 2-7-19] [326 IAC 2-7-5(7)][326 IAC 2-1.1-7]

- (a) The Permittee shall pay annual fees to IDEM, OAQ within thirty (30) calendar days of receipt of a billing. Pursuant to 326 IAC 2-7-19(b), if the Permittee does not receive a bill from IDEM, OAQ the applicable fee is due April 1 of each year.
- (b) Except as provided in 326 IAC 2-7-19(e), failure to pay may result in administrative enforcement action or revocation of this permit.
- (c) The Permittee may call the following telephone numbers: 1-800-451-6027 or 317-233-4230 (ask for OAQ, Billing, Licensing, and Training Section), to determine the appropriate permit fee.

B.25 Credible Evidence [326 IAC 2-7-5(3)][326 IAC 2-7-6][62 FR 8314] [326 IAC 1-1-6]

For the purpose of submitting compliance certifications or establishing whether or not the Permittee has violated or is in violation of any condition of this permit, nothing in this permit shall preclude the use, including the exclusive use, of any credible evidence or information relevant to whether the Permittee would have been in compliance with the condition of this permit if the appropriate performance or compliance test or procedure had been performed.

## SECTION C SOURCE OPERATION CONDITIONS

Entire Source

### Emission Limitations and Standards [326 IAC 2-7-5(1)]

C.1 Particulate Emission Limitations For Processes with Process Weight Rates Less Than One Hundred (100) Pounds per Hour [326 IAC 6-3-2]

Pursuant to 326 IAC 6-3-2(e)(2), particulate emissions from any process not exempt under 326 IAC 6-3-1(b) or (c) which has a maximum process weight rate less than 100 pounds per hour and the methods in 326 IAC 6-3-2(b) through (d) do not apply shall not exceed 0.551 pounds per hour.

C.2 Opacity [326 IAC 5-1]

Pursuant to 326 IAC 5-1-2 (Opacity Limitations), except as provided in 326 IAC 5-1-3 (Temporary Alternative Opacity Limitations), opacity shall meet the following, unless otherwise stated in this permit:

- (a) Opacity shall not exceed an average of thirty percent (30%) in any one (1) six (6) minute averaging period as determined in 326 IAC 5-1-4.
- (b) Opacity shall not exceed sixty percent (60%) for more than a cumulative total of fifteen (15) minutes (sixty (60) readings as measured according to 40 CFR 60, Appendix A, Method 9 or fifteen (15) one (1) minute nonoverlapping integrated averages for a continuous opacity monitor) in a six (6) hour period.

C.3 Open Burning [326 IAC 4-1] [IC 13-17-9]

The Permittee shall not open burn any material except as provided in 326 IAC 4-1-3, 326 IAC 4-1-4 or 326 IAC 4-1-6. The previous sentence notwithstanding, the Permittee may open burn in accordance with an open burning approval issued by the Commissioner under 326 IAC 4-1-4.1. 326 IAC 4-1-3 (a)(2)(A) and (B) are not federally enforceable.

C.4 Incineration [326 IAC 4-2] [326 IAC 9-1-2]

The Permittee shall not operate an incinerator or incinerate any waste or refuse except as provided in 326 IAC 4-2 and 326 IAC 9-1-2.

C.5 Fugitive Dust Emissions [326 IAC 6-4]

The Permittee shall not allow fugitive dust to escape beyond the property line or boundaries of the property, right-of-way, or easement on which the source is located, in a manner that would violate 326 IAC 6-4 (Fugitive Dust Emissions). 326 IAC 6-4-2(4) is not federally enforceable.

C.6 Asbestos Abatement Projects [326 IAC 14-10] [326 IAC 18] [40 CFR 61, Subpart M]

- (a) Notification requirements apply to each owner or operator. If the combined amount of regulated asbestos containing material (RACM) to be stripped, removed or disturbed is at least 260 linear feet on pipes or 160 square feet on other facility components, or at least thirty-five (35) cubic feet on all facility components, then the notification requirements of 326 IAC 14-10-3 are mandatory. All demolition projects require notification whether or not asbestos is present.
- (b) The Permittee shall ensure that a written notification is sent on a form provided by the Commissioner at least ten (10) working days before asbestos stripping or removal work or before demolition begins, per 326 IAC 14-10-3, and shall update such notice as necessary, including, but not limited to the following:

- (1) When the amount of affected asbestos containing material increases or decreases by at least twenty percent (20%); or
- (2) If there is a change in the following:
  - (A) Asbestos removal or demolition start date;
  - (B) Removal or demolition contractor; or
  - (C) Waste disposal site.
- (c) The Permittee shall ensure that the notice is postmarked or delivered according to the guidelines set forth in 326 IAC 14-10-3(2).
- (d) The notice to be submitted shall include the information enumerated in 326 IAC 14-10-3(3).

All required notifications shall be submitted to:

Indiana Department of Environmental Management  
Asbestos Section, Office of Air Quality  
100 North Senate Avenue  
MC 61-52 IGCN 1003  
Indianapolis, Indiana 46204-2251

The notice shall include a signed certification from the owner or operator that the information provided in this notification is correct and that only Indiana licensed workers and project supervisors will be used to implement the asbestos removal project. The notifications do not require a certification by the "responsible official" as defined by 326 IAC 2-7-1(34).

- (e) **Procedures for Asbestos Emission Control**  
The Permittee shall comply with the applicable emission control procedures in 326 IAC 14-10-4 and 40 CFR 61.145(c). Per 326 IAC 14-10-1, emission control requirements are applicable for any removal or disturbance of RACM greater than three (3) linear feet on pipes or three (3) square feet on any other facility components or a total of at least 0.75 cubic feet on all facility components.
- (f) **Demolition and Renovation**  
The Permittee shall thoroughly inspect the affected facility or part of the facility where the demolition or renovation will occur for the presence of asbestos pursuant to 40 CFR 61.145(a).
- (g) **Indiana Accredited Asbestos Inspector**  
The Permittee shall comply with 326 IAC 14-10-1(a) that requires the owner or operator, prior to a renovation/demolition, to use an Indiana Accredited Asbestos Inspector to thoroughly inspect the affected portion of the facility for the presence of asbestos. The requirement to use an Indiana Accredited Asbestos inspector is not federally enforceable.

### Testing Requirements [326 IAC 2-7-6(1)]

#### C.7 Performance Testing [326 IAC 3-6]

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- (a) All testing shall be performed according to the provisions of 326 IAC 3-6 (Source Sampling Procedures), except as provided elsewhere in this permit, utilizing any applicable procedures and analysis methods specified in 40 CFR 51, 40 CFR 60, 40 CFR 61, 40 CFR 63, 40 CFR 75, or other procedures approved by IDEM, OAQ.

A test protocol, except as provided elsewhere in this permit, shall be submitted to:

Indiana Department of Environmental Management  
Compliance Data Section, Office of Air Quality  
100 North Senate Avenue  
MC 61-53 IGCN 1003  
Indianapolis, Indiana 46204-2251

no later than thirty-five (35) days prior to the intended test date. The protocol submitted by the Permittee does not require certification by the "responsible official" as defined by 326 IAC 2-7-1(34).

- (b) The Permittee shall notify IDEM, OAQ of the actual test date at least fourteen (14) days prior to the actual test date. The notification submitted by the Permittee does not require certification by the "responsible official" as defined by 326 IAC 2-7-1(34).
- (c) Pursuant to 326 IAC 3-6-4(b), all test reports must be received by IDEM, OAQ not later than forty-five (45) days after the completion of the testing. An extension may be granted by IDEM, OAQ if the Permittee submits to IDEM, OAQ, a reasonable written explanation not later than five (5) days prior to the end of the initial forty-five (45) day period.

### Compliance Requirements [326 IAC 2-1.1-11]

#### C.8 Compliance Requirements [326 IAC 2-1.1-11]

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The commissioner may require stack testing, monitoring, or reporting at any time to assure compliance with all applicable requirements by issuing an order under 326 IAC 2-1.1-11. Any monitoring or testing shall be performed in accordance with 326 IAC 3 or other methods approved by the commissioner or the U. S. EPA.

### Compliance Monitoring Requirements [326 IAC 2-7-5(1)][326 IAC 2-7-6(1)]

#### C.9 Compliance Monitoring [326 IAC 2-7-5(3)][326 IAC 2-7-6(1)]

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Unless otherwise specified in this permit, all monitoring and record keeping requirements not already legally required shall be implemented within ninety (90) days of permit issuance, except as otherwise provided for in 40 CFR 60, Subpart WWW. If required by Section D, the Permittee shall be responsible for installing any necessary equipment and initiating any required monitoring related to that equipment. If due to circumstances beyond its control, that equipment cannot be installed and operated within ninety (90) days, the Permittee may extend the compliance schedule related to the equipment for an additional ninety (90) days provided the Permittee notifies:

Indiana Department of Environmental Management  
Compliance Branch, Office of Air Quality  
100 North Senate Avenue  
MC 61-53 IGCN 1003  
Indianapolis, Indiana 46204-2251

in writing, prior to the end of the initial ninety (90) day compliance schedule, with full justification of the reasons for the inability to meet this date.

The notification which shall be submitted by the Permittee does require the certification by the "responsible official" as defined by 326 IAC 2-7-1(34).

Unless otherwise specified in the approval for the new emission unit(s), compliance monitoring for new emission units or emission units added through a source modification shall be implemented when operation begins.

**C.10 Monitoring Methods [326 IAC 3] [40 CFR 60] [40 CFR 63]**

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Any monitoring or testing required by Section D of this permit shall be performed according to the provisions of 326 IAC 3, 40 CFR 60, Appendix A, 40 CFR 60, Appendix B, 40 CFR 63, or other approved methods as specified in this permit.

**C.11 Instrument Specifications [326 IAC 2-1.1-11] [326 IAC 2-7-5(3)] [326 IAC 2-7-6(1)]**

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- (a) When required by any condition of this permit, an analog instrument used to measure a parameter related to the operation of an air pollution control device shall have a scale such that the expected maximum reading for the normal range shall be no less than twenty percent (20%) of full scale.
- (b) The Permittee may request that the IDEM, OAQ approve the use of an instrument that does not meet the above specifications provided the Permittee can demonstrate that an alternative instrument specification will adequately ensure compliance with permit conditions requiring the measurement of the parameters.

**Corrective Actions and Response Steps [326 IAC 2-7-5][326 IAC 2-7-6]**

**C.12 Emergency Reduction Plans [326 IAC 1-5-2] [326 IAC 1-5-3]**

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Pursuant to 326 IAC 1-5-2 (Emergency Reduction Plans; Submission):

- (a) The Permittee prepared and submitted written emergency reduction plans (ERPs) consistent with safe operating procedures on November 8, 1999.
- (b) Upon direct notification by IDEM, OAQ that a specific air pollution episode level is in effect, the Permittee shall immediately put into effect the actions stipulated in the approved ERP for the appropriate episode level.  
[326 IAC 1-5-3]

**C.13 Risk Management Plan [326 IAC 2-7-5(12)] [40 CFR 68]**

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If a regulated substance, as defined in 40 CFR 68, is present at a source in more than a threshold quantity, the Permittee must comply with the applicable requirements of 40 CFR 68.

**C.14 Response to Excursions or Exceedances [326 IAC 2-7-5] [326 IAC 2-7-6]**

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- (a) Except as otherwise provided for in 40 CFR 60, Subpart WWW, upon detecting an excursion or exceedance, the Permittee shall restore operation of the emissions unit (including any control device and associated capture system) to its normal or usual manner of operation as expeditiously as practicable in accordance with good air pollution control practices for minimizing emissions.
- (b) The response shall include minimizing the period of any startup, shutdown or malfunction and taking any necessary corrective actions to restore normal operation and prevent the likely recurrence of the cause of an excursion or exceedance (other than those caused by excused startup or shutdown conditions). Corrective actions may include, but are not limited to, the following:

- (1) initial inspection and evaluation;
  - (2) recording that operations returned to normal without operator action (such as through response by a computerized distribution control system); or
  - (3) any necessary follow-up actions to return operation to within the indicator range, designated condition, or below the applicable emission limitation or standard, as applicable.
- (c) A determination of whether the Permittee has used acceptable procedures in response to an excursion or exceedance will be based on information available, which may include, but is not limited to, the following:
- (1) monitoring results;
  - (2) review of operation and maintenance procedures and records; and/or
  - (3) inspection of the control device, associated capture system, and the process.
- (d) Failure to take reasonable response steps shall be considered a deviation from the permit.
- (e) The Permittee shall maintain the following records:
- (1) monitoring data;
  - (2) monitor performance data, if applicable; and
  - (3) corrective actions taken.

C.15 Actions Related to Noncompliance Demonstrated by a Stack Test [326 IAC 2-7-5][326 IAC 2-7-6]

- (a) When the results of a stack test performed in conformance with Section C - Performance Testing, of this permit exceed the level specified in any condition of this permit, the Permittee shall take appropriate response actions. The Permittee shall submit a description of these response actions to IDEM, OAQ, within thirty (30) days of receipt of the test results. The Permittee shall take appropriate action to minimize excess emissions from the affected facility while the response actions are being implemented.
- (b) A retest to demonstrate compliance shall be performed within one hundred twenty (120) days of receipt of the original test results. Should the Permittee demonstrate to IDEM, OAQ that retesting in one hundred twenty (120) days is not practicable, IDEM, OAQ may extend the retesting deadline.
- (c) IDEM, OAQ reserves the authority to take any actions allowed under law in response to noncompliant stack tests.

The response action documents submitted pursuant to this condition do require the certification by the "responsible official" as defined by 326 IAC 2-7-1(34).

## Record Keeping and Reporting Requirements [326 IAC 2-7-5(3)] [326 IAC 2-7-19]

### C.16 Emission Statement [326 IAC 2-7-5(3)(C)(iii)][326 IAC 2-7-5(7)][326 IAC 2-7-19(c)][326 IAC 2-6]

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- (a) In accordance with the compliance schedule specified in 326 IAC 2-6-3(b)(1), starting in 2004 and every three (3) years thereafter, the Permittee shall submit by July 1 an emission statement covering the previous calendar year. The emission statement shall contain, at a minimum, the information specified in 326 IAC 2-6-4(c) and shall meet the following requirements:
- (1) Indicate estimated actual emissions of all pollutants listed in 326 IAC 2-6-4(a);
  - (2) Indicate estimated actual emissions of regulated pollutants as defined by 326 IAC 2-7-1 (32) ("Regulated pollutant, which is used only for purposes of Section 19 of this rule") from the source, for purpose of fee assessment.

The statement must be submitted to:

Indiana Department of Environmental Management  
Technical Support and Modeling Section, Office of Air Quality  
100 North Senate Avenue  
MC 61-50 IGCN 1003  
Indianapolis, Indiana 46204-2251

The emission statement does require the certification by the "responsible official" as defined by 326 IAC 2-7-1(34).

- (b) The emission statement required by this permit shall be considered timely if the date postmarked on the envelope or certified mail receipt, or affixed by the shipper on the private shipping receipt, is on or before the date it is due. If the document is submitted by any other means, it shall be considered timely if received by IDEM, OAQ on or before the date it is due.

### C.17 General Record Keeping Requirements [326 IAC 2-7-5(3)] [326 IAC 2-7-6] [326 IAC 2-2][326 IAC 2-3]

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- (a) Records of all required monitoring data, reports and support information required by this permit shall be retained for a period of at least five (5) years from the date of monitoring sample, measurement, report, or application. These records shall be physically present or electronically accessible at the source location for a minimum of three (3) years. The records may be stored elsewhere for the remaining two (2) years as long as they are available upon request. If the Commissioner makes a request for records to the Permittee, the Permittee shall furnish the records to the Commissioner within a reasonable time.
- (b) Unless otherwise specified in this permit, all record keeping requirements not already legally required shall be implemented within ninety (90) days of permit issuance.
- (c) If there is a "project" (as defined in 326 IAC 2-2-1(qq) and/or 326 IAC 2-3-1(II)) at an existing emissions unit, other than projects at a source with a Plantwide Applicability Limitation (PAL), which is not part of a "major modification" (as defined in 326 IAC 2-2-1(ee) and/or 326 IAC 2-3-1(z)) and the Permittee elects to utilize the "projected actual emissions" (as defined in 326 IAC 2-2-1(rr) and/or 326 IAC 2-3-1(mm)), the Permittee shall comply with following:

- (1) Before beginning actual construction of the "project" (as defined in 326 IAC 2-2-1(qq) and/or 326 IAC 2-3-1(II)) at an existing emissions unit, document and maintain the following records:
  - (A) A description of the project.
  - (B) Identification of any emissions unit whose emissions of a regulated new source review pollutant could be affected by the project.
  - (C) A description of the applicability test used to determine that the project is not a major modification for any regulated NSR pollutant, including:
    - (i) Baseline actual emissions;
    - (ii) Projected actual emissions;
    - (iii) Amount of emissions excluded under section 326 IAC 2-2-1(rr)(2)(A)(iii) and/or 326 IAC 2-3-1 (mm)(2)(A)(iii); and
    - (iv) An explanation for why the amount was excluded, and any netting calculations, if applicable.
- (2) Monitor the emissions of any regulated NSR pollutant that could increase as a result of the project and that is emitted by any existing emissions unit identified in (1)(B) above; and
- (3) Calculate and maintain a record of the annual emissions, in tons per year on a calendar year basis, for a period of five (5) years following resumption of regular operations after the change, or for a period of ten (10) years following resumption of regular operations after the change if the project increases the design capacity of or the potential to emit that regulated NSR pollutant at the emissions unit.

C.18 General Reporting Requirements [326 IAC 2-7-5(3)(C)] [326 IAC 2-1.1-11]  
[326 IAC 2-2][326 IAC 2-3]

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- (a) The Permittee shall submit the attached Quarterly Deviation and Compliance Monitoring Report or its equivalent. Any deviation from permit requirements, the date(s) of each deviation, the cause of the deviation, and the response steps taken must be reported. This report shall be submitted within thirty (30) days of the end of the reporting period. The Quarterly Deviation and Compliance Monitoring Report shall include the certification by the "responsible official" as defined by 326 IAC 2-7-1(34).
- (b) The report required in (a) of this condition and reports required by conditions in Section D of this permit shall be submitted to:

Indiana Department of Environmental Management  
Compliance Data Section, Office of Air Quality  
100 North Senate Avenue  
MC 61-53 IGCN 1003  
Indianapolis, Indiana 46204-2251

- (c) Unless otherwise specified in this permit, any notice, report, or other submission required by this permit shall be considered timely if the date postmarked on the envelope or certified mail receipt, or affixed by the shipper on the private shipping receipt, is on or before the date it is due. If the document is submitted by any other means, it shall be considered timely if received by IDEM, OAQ on or before the date it is due.
  - (d) Unless otherwise specified in this permit, all reports required in Section D of this permit shall be submitted within thirty (30) days of the end of the reporting period. All reports do require the certification by the "responsible official" as defined by 326 IAC 2-7-1(34).
  - (e) Reporting periods are based on calendar years, unless otherwise specified in this permit. For the purpose of this permit "calendar year" means the twelve (12) month period from January 1 to December 31 inclusive.
  - (f) If the Permittee is required to comply with the recordkeeping provisions of (c) in Section C- General Record Keeping Requirements for any "project" (as defined in 326 IAC 2-2-1 (qq) and/or 326 IAC 2-3-1 (ll) at an existing emissions unit, and the project meets the following criteria, then the Permittee shall submit a report to IDEM, OAQ :
    - (1) The annual emissions, in tons per year, from the project identified in (c)(1) in Section C- General Record Keeping Requirements exceed the baseline actual emissions, as documented and maintained under Section C- General Record Keeping Requirements (c)(1)(C)(i), by a significant amount, as defined in 326 IAC 2-2-1 (xx) and/or 326 IAC 2-3-1 (qq), for that regulated NSR pollutant, and
    - (2) The emissions differ from the preconstruction projection as documented and maintained under Section C- General Record Keeping Requirements (c)(1)(C)(ii).
  - (g) The report for project at an existing emissions unit shall be submitted within sixty (60) days after the end of the year and contain the following:
    - (1) The name, address, and telephone number of the major stationary source.
    - (2) The annual emissions calculated in accordance with (c)(2) and (3) in Section C- General Record Keeping Requirements.
    - (3) The emissions calculated under the actual-to-projected actual test stated in 326 IAC 2-2-2(d)(3) and/or 326 IAC 2-3-2(c)(3).
    - (4) Any other information that the Permittee deems fit to include in this report,
- Reports required in this part shall be submitted to:
- Indiana Department of Environmental Management  
Air Compliance Section, Office of Air Quality  
100 North Senate Avenue  
MC 61-53 IGCN 1003  
Indianapolis, Indiana 46204-2251
- (h) The Permittee shall make the information required to be documented and maintained in accordance with (c) in Section C- General Record Keeping Requirements available for review upon a request for inspection by IDEM, OAQ. The general public may request this information from the IDEM, OAQ under 326 IAC 17.1.

## **Stratospheric Ozone Protection**

### **C.19 Compliance with 40 CFR 82 and 326 IAC 22-1**

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Pursuant to 40 CFR 82 (Protection of Stratospheric Ozone), Subpart F, except as provided for motor vehicle air conditioners in Subpart B, the Permittee shall comply with the standards for recycling and emissions reduction:

- (a) Persons opening appliances for maintenance, service, repair, or disposal must comply with the required practices pursuant to 40 CFR 82.156.
- (b) Equipment used during the maintenance, service, repair, or disposal of appliances must comply with the standards for recycling and recovery equipment pursuant to 40 CFR 82.158.
- (c) Persons performing maintenance, service, repair, or disposal of appliances must be certified by an approved technician certification program pursuant to 40 CFR 82.161.

## SECTION D.1 EMISSIONS UNIT OPERATION CONDITIONS

### Emissions Unit Description:

- (a) One (1) solid waste disposal facility that opened in 1981 and has a design capacity of 15.30 Million Megagrams.
- (b) One (1) open flare with a capacity of 2,130 scfm of landfill gas, constructed in 2004. There is no physical means to bypass the landfill gas flow before it reaches the open flare.
- (c) Four (4) Caterpillar 3516 landfill gas fueled engine/generator sets, identified as EG1, EG2, EG3, and EG4, and a single fuel gas compressor. The generators are rated at 800 kilowatts each, and were installed in 1994.
- (d) Gas treatment system, installed in 1994, consisting of dewatering, compressions, cooling, filtering and heat exchange operations. The gas treatment system is enclosed and has no atmospheric vents.
- (e) Four (4) Caterpillar 3516 landfill gas fueled reciprocating internal combustion engine/generator sets, identified as EG5, EG6, EG7, and EG8, to be installed in 2007. The engines are rated at 1148 horsepower each, and each exhausts through one (1) stack, identified as ES5, ES6, ES7, and ES8, respectively.

(The information describing the process contained in this emissions unit description box is descriptive information and does not constitute enforceable conditions.)

### Emission Limitations and Standards [326 IAC 2-7-5(1)]

#### D.1.1 Non-applicability Determination

The municipal solid waste landfill is not subject to the provisions of the following 40 CFR Part 60 Subparts: Cc, D, Da, Db, Dc, E, Ea, Eb, K, Ka, Kb, O, GG, and OOO.

#### D.1.2 NOx Emissions [326 IAC 2-3]

- (a) Emissions of NOx from each of the four (4) landfill gas engine/generator sets (EG1, EG2, EG3, and EG4) shall not exceed 4.025 pounds per hour.

Compliance with this limit combined with the unrestricted potential to emit of NOx from the open flare, the TIPPER1 engine, and the three (3) passive vent flares will ensure that NOx emissions from the engine/generator sets EG1, EG2, EG3, and EG4, the open flare, the TIPPER1 engine, and the three (3) passive vent flares do not exceed 100 tons per year so that the requirements of 326 IAC 2-3 (Emission Offset) do not apply.

- (b) In order to ensure compliance with the limit in (a) above, the Permittee shall install automatic air/fuel controllers on each of the engine/generator sets identified as EG1, EG2, and EG4, prior to start-up of any of the engine/generator sets identified as EG5, EG6, EG7, and EG8.

#### D.1.3 CO Emissions [326 IAC 2-2]

The Permittee shall not operate more than three (3) passive vent flares at this municipal solid waste landfill.

Compliance with this requirement combined with the unrestricted potential to emit of CO from the four (4) engine/generator sets identified as EG1, EG2, EG3, and EG4, the TIPPER1 engine, and the open flare will ensure that CO emissions from the open flare, the four (4) engine/generator sets identified as EG1, EG2, EG3, and EG4, the TIPPER1 engine, and the three (3) passive vent flares are less than 250 tons per year so that the requirements of 326 IAC 2-2 (PSD) do not apply.

**D.1.4 Particulate Matter (PM) [326 IAC 6.5-1]**

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Pursuant to 326 IAC 6.5-1-2(a)(Nonattainment Area Particulate Limitations), particulate matter (PM) emissions from the open flare and the eight (8) engine/generator sets (EG1 through EG8) shall each be limited to 0.03 grain per dry standard cubic foot of exhaust air.

**Compliance Determination Requirements**

**D.1.5 Testing Requirements [326 IAC 2-7-6(1),(6)] [326 IAC 2-1.1-11]**

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During the period between April 2011 and October 2011, in order to demonstrate compliance with Condition D.1.2, the Permittee shall perform NOx testing on at least one (1) of the four (4) landfill gas engine/generator sets identified as EG1, EG2, EG3, and EG4 utilizing methods as approved by the Commissioner. This test shall be repeated at least once every five (5) years from the date of this valid compliance demonstration. Testing shall be conducted in accordance with Section C-Performance Testing.

**New Source Performance Standards (NSPS) Requirements [326 IAC 2-7-5(1)]**

**D.1.6 General Provisions Relating to New Source Performance Standards [326 IAC 12-1] [40 CFR Part 60, Subpart A]**

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(a) Pursuant to 40 CFR 60.1, the Permittee shall comply with the provisions of 40 CFR Part 60 Subpart A – General Provisions, which are incorporated by reference as 326 IAC 12-1 for the solid waste disposal facility except as otherwise specified in 40 CFR Part 60, Subpart WWW.

(b) Pursuant to 40 CFR 60.10, the Permittee shall submit all required notifications and reports to:

Indiana Department of Environmental Management  
Compliance Branch, Office of Air Quality  
100 North Senate Avenue  
MC 61-53 IGCN 1003  
Indianapolis, Indiana 46204-2251

(c) Pursuant to a determination letter from EPA region V (dated February 25, 2004), the landfill gas treatment system at the source is considered a treatment system that meets the intent of 40 CFR 60.752 (b)(2)(iii)(C). The eight (8) engine/generator sets (EG1 through EG8), which combust the treated landfill gas, are not subject to the operational requirements in 40 CFR 60.753, the testing requirements in 40 CFR 60.754, the compliance provisions of 40 CFR 60.755, the monitoring requirements in 40 CFR 60.756, the reporting requirements in 40 CFR 60.757, and the record keeping requirements in 40 CFR 60.758. The eight (8) engine/generator sets (EG1 through EG8) are also not subject to the requirements of 40 CFR 63, Subpart AAAA and 40 CFR 63, Subpart ZZZZ.

**D.1.7 New Source Performance Standard for Municipal Solid Waste Landfills Requirements [40 CFR Part 60, Subpart WWW] [326 IAC 12]**

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Pursuant to 40 CFR Part 60, Subpart WWW, the Permittee shall comply with the provisions of the New Source Performance Standard for Municipal Solid Waste Landfills, which are incorporated by reference as 326 IAC 12, for the solid waste disposal facility as specified as follows.

**§ 60.750 Applicability, designation of affected facility, and delegation of authority.**

(a) The provisions of this subpart apply to each municipal solid waste landfill that commenced construction, reconstruction or modification on or after May 30, 1991. Physical or operational changes made to an existing MSW landfill solely to comply with Subpart Cc of this part are not considered construction, reconstruction, or modification for the purposes of this section.

(b) The following authorities shall be retained by the Administrator and not transferred to the State: §60.754(a)(5).

(c) Activities required by or conducted pursuant to a CERCLA, RCRA, or State remedial action are not considered construction, reconstruction, or modification for purposes of this subpart.

**§ 60.751 Definitions.**

As used in this subpart, all terms not defined herein shall have the meaning given them in the Act or in subpart A of this part.

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

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

*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 §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.

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

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

*Controlled landfill* means any landfill at which collection and control systems are required under this subpart as a result of the nonmethane organic compounds emission rate. The landfill is considered controlled at the time a collection and control system design plan is submitted in compliance with §60.752(b)(2)(i).

*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.

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

*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.

*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.

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

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

*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).

*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 this title. 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.

*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.

*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 §257.2 of this title.

*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.

*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.

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

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

*NMOC* means nonmethane organic compounds, as measured according to the provisions of §60.754.

*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.

*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.

*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.

*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.).

*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 this part.

*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.

**§ 60.752 Standards for air emissions from municipal solid waste landfills.**

(b) Each owner or operator of an MSW landfill having a design capacity equal to or greater than 2.5 million megagrams and 2.5 million cubic meters, shall either comply with paragraph (b)(2) of this section or calculate an NMOC emission rate for the landfill using the procedures specified in §60.754. The NMOC emission rate shall be recalculated annually, except as provided in §60.757(b)(1)(ii) of this subpart. The owner or operator of an MSW landfill subject to this subpart with a design capacity greater than or equal to 2.5 million megagrams and 2.5 million cubic meters is subject to part 70 or 71 permitting requirements.

(2) If the calculated NMOC emission rate is equal to or greater than 50 megagrams per year, the owner or operator shall:

(ii) Install a collection and control system that captures the gas generated within the landfill as required by paragraphs (b)(2)(ii)(A) or (B) and (b)(2)(iii) of this section within 30 months after the first annual report in which the emission rate equals or exceeds 50 megagrams per year, unless Tier 2 or Tier 3 sampling demonstrates that the emission rate is less than 50 megagrams per year, as specified in §60.757(c)(1) or (2).

(A) An active collection system shall:

( 1 ) 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;

( 2 ) 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 ) 5 years or more if active; or

( ii ) 2 years or more if closed or at final grade.

( 3 ) Collect gas at a sufficient extraction rate;

( 4 ) Be designed to minimize off-site migration of subsurface gas.

(B) A passive collection system shall:

( 1 ) Comply with the provisions specified in paragraphs (b)(2)(ii)(A)( 1 ), ( 2 ), and (2)(ii)(A)( 4 ) of this section.

( 2 ) Be installed with liners on the bottom and all sides in all areas in which gas is to be collected. The liners shall be installed as required under §258.40.

(iii) Route all the collected gas to a control system that complies with the requirements in either paragraph (b)(2)(iii) (A), (B) or (C) of this section.

(A) An open flare designed and operated in accordance with §60.18 except as noted in §60.754(e);

(B) A control system designed and operated to reduce NMOC by 98 weight-percent, or, when an enclosed combustion device is used for control, to either reduce NMOC by 98 weight percent or reduce the outlet NMOC concentration to less than 20 parts per million by volume, dry basis as hexane at 3 percent oxygen. The reduction efficiency or parts per million 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 §60.754(d).

( 1 ) If a boiler or process heater is used as the control device, the landfill gas stream shall be introduced into the flame zone.

( 2 ) 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 §60.756;

(C) 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 paragraph (b)(2)(iii) (A) or (B) of this section.

(iv) Operate the collection and control device installed to comply with this subpart in accordance with the provisions of §§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 (b)(2)(v) (A), (B), and (C) of this section are met:

(A) The landfill shall be a closed landfill as defined in §60.751 of this subpart. A closure report shall be submitted to the Administrator as provided in §60.757(d);

(B) The collection and control system shall have been in operation a minimum of 15 years; and

(C) Following the procedures specified in §60.754(b) of this subpart, the calculated NMOC gas produced by the landfill shall be less than 50 megagrams per year on three successive test dates. The test dates shall be no less than 90 days apart, and no more than 180 days apart.

(d) When a MSW landfill subject to this subpart is closed, the owner or operator is no longer subject to the requirement to maintain an operating permit under part 70 or 71 of this chapter for the landfill if the landfill is not otherwise subject to the requirements of either part 70 or 71 and if either of the following conditions are met:

(1) The landfill was never subject to the requirement for a control system under paragraph (b)(2) of this section; or

(2) The owner or operator meets the conditions for control system removal specified in paragraph (b)(2)(v) of this section.

**§ 60.753 Operational standards for collection and control systems.**

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

(1) 5 years or more if active; or

(2) 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:

(1) A fire or increased well temperature. The owner or operator shall record instances when positive pressure occurs in efforts to avoid a fire. These records shall be submitted with the annual reports as provided in §60.757(f)(1);

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

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

(c) Operate each interior wellhead in the collection system with a landfill gas temperature less than 55 °C and with either a nitrogen level less than 20 percent or an oxygen level less than 5 percent. The owner or operator 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.

(1) The nitrogen level shall be determined using Method 3C, unless an alternative test method is established as allowed by §60.752(b)(2)(i) of this subpart.

(2) Unless an alternative test method is established as allowed by §60.752(b)(2)(i) of this subpart, the oxygen shall be determined by an oxygen meter using Method 3A or 3C except that:

(i) The span shall be set so that the regulatory limit is between 20 and 50 percent of the span;

(ii) A data recorder is not required;

(iii) Only two calibration gases are required, a zero and span, and ambient air may be used as the span;

(iv) A calibration error check is not required;

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

(e) Operate the system such that all collected gases are vented to a control system designed and operated in compliance with §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 1 hour; and

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

(g) If monitoring demonstrates that the operational requirements in paragraphs (b), (c), or (d) of this section are not met, corrective action shall be taken as specified in §60.755(a)(3) through (5) or §60.755(c) of this subpart. If corrective actions are taken as specified in §60.755, the monitored exceedance is not a violation of the operational requirements in this section.

**§ 60.754 Test methods and procedures.**

(b) After the installation of a collection and control system in compliance with §60.755, the owner or operator shall calculate the NMOC emission rate for purposes of determining when the system can be removed as provided in §60.752(b)(2)(v), using the following equation:

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

where,

$M_{\text{NMOC}}$  = mass emission rate of NMOC, megagrams per year

$Q_{\text{LFG}}$  = flow rate of landfill gas, cubic meters per minute

$C_{\text{NMOC}}$  = NMOC concentration, parts per million by volume as hexane

(1) The flow rate of landfill gas,  $Q_{\text{LFG}}$ , shall be determined by measuring the total landfill gas flow rate at the common header pipe that leads to the control device using a gas flow measuring device calibrated according to the provisions of section 4 of Method 2E of appendix A of this part.

(2) The average NMOC concentration,  $C_{\text{NMOC}}$ , shall be determined by collecting and analyzing landfill gas sampled from the common header pipe before the gas moving or condensate removal equipment using the procedures in Method 25C or Method 18 of appendix A of this part. If using Method 18 of appendix A of this part, 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 landfill owner or operator shall divide the NMOC concentration from Method 25C of appendix A of this part by six to convert from  $C_{\text{NMOC}}$  as carbon to  $C_{\text{NMOC}}$  as hexane.

(3) The owner or operator may use another method to determine landfill gas flow rate and NMOC concentration if the method has been approved by the Administrator.

(c) When calculating emissions for PSD purposes, the owner or operator of each MSW landfill subject to the provisions of this subpart shall estimate the NMOC emission rate for comparison to

the PSD major source and significance levels in §§51.166 or 52.21 of this chapter using AP-42 or other approved measurement procedures.

(d) For the performance test required in §60.752(b)(2)(iii)(B), Method 25, 25C, or Method 18 of Appendix A of this part must be used to determine compliance with the 98 weight-percent efficiency or the 20 ppmv outlet concentration level, unless another method to demonstrate compliance has been approved by the Administrator as provided by §60.752(b)(2)(i)(B). Method 3 or 3A shall be used to determine oxygen for correcting the NMOC concentration as hexane to 3 percent. In cases where the outlet concentration is less than 50 ppm NMOC as carbon (8 ppm NMOC as hexane), Method 25A should be used in place of Method 25. If using Method 18 of appendix A of this part, 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 following equation shall be used to calculate efficiency:

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

where,

$\text{NMOC}_{\text{in}}$  = mass of NMOC entering control device

$\text{NMOC}_{\text{out}}$  = mass of NMOC exiting control device

(e) For the performance test required in §60.752(b)(2)(iii)(A), the net heating value of the combusted landfill gas as determined in §60.18(f)(3) is calculated from the concentration of methane in the landfill gas as measured by Method 3C. A minimum of three 30-minute Method 3C samples are determined. The measurement of other organic components, hydrogen, and carbon monoxide is not applicable. Method 3C may be used to determine the landfill gas molecular weight for calculating the flare gas exit velocity under §60.18(f)(4).

#### **§ 60.755 Compliance provisions.**

(a) Except as provided in §60.752(b)(2)(i)(B), the specified methods in paragraphs (a)(1) through (a)(6) of this section shall be used to determine whether the gas collection system is in compliance with §60.752(b)(2)(ii).

(1) For the purposes of calculating the maximum expected gas generation flow rate from the landfill to determine compliance with §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 Administrator. If  $k$  has been determined as specified in §60.754(a)(4), the value of  $k$  determined from the test shall be used. A value of no more than 15 years shall be used for the intended use period of the gas mover equipment. The active life of the landfill is the age of the landfill plus the estimated number of years until closure.

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

$$Q_m = 2L_0R (e^{-k_c} - e^{-kt})$$

where,

$Q_m$  = maximum expected gas generation flow rate, cubic meters per year

$L_0$  = methane generation potential, cubic meters per megagram solid waste

$R$  = average annual acceptance rate, megagrams per year

$k$  = methane generation rate constant, year<sup>-1</sup>

$t$  = 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:

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

where,

$Q_M$  = maximum expected gas generation flow rate, cubic meters per year

$k$  = methane generation rate constant, year<sup>-1</sup>

$L_o$  = methane generation potential, cubic meters per megagram solid waste

$M_i$  = mass of solid waste in the  $i^{\text{th}}$  section, megagrams

$t_i$  = age of the  $i^{\text{th}}$  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 paragraphs (a)(1) (i) and (ii) of this section. If the landfill is still accepting waste, the actual measured flow data will not equal the maximum expected gas generation rate, so calculations using the equations in paragraphs (a)(1) (i) or (ii) or other methods shall be used to predict the maximum expected gas generation rate over the intended period of use of the gas control system equipment.

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

(3) For the purpose of demonstrating whether the gas collection system flow rate is sufficient to determine compliance with §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 5 calendar days, except for the three conditions allowed under §60.753(b). If negative pressure cannot be achieved without excess air infiltration within 15 calendar days of the first measurement, the gas collection system shall be expanded to correct the exceedance within 120 days of the initial measurement of positive pressure. Any attempted corrective measure shall not cause exceedances of other operational or performance standards. An alternative timeline for correcting the exceedance may be submitted to the Administrator for approval.

(4) Owners or operators are not required to expand the system as required in paragraph (a)(3) of this section during the first 180 days after gas collection system startup.

(5) 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 §60.753(c). If a well exceeds one of these operating parameters, action shall be initiated to correct the exceedance within 5 calendar days. If correction of the exceedance cannot be achieved within 15 calendar days of the first measurement, the gas collection system shall be expanded to correct the exceedance within 120 days of the initial exceedance. Any attempted corrective measure shall not cause exceedances of other operational or performance standards. An alternative timeline for correcting the exceedance may be submitted to the Administrator for approval.

(6) 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 §60.759 shall provide information satisfactory to the Administrator as specified in §60.752(b)(2)(i)(C) demonstrating that off-site migration is being controlled.

(b) For purposes of compliance with §60.753(a), each owner or operator of a controlled landfill shall place each well or design component as specified in the approved design plan as provided in §60.752(b)(2)(i). Each well shall be installed no later than 60 days after the date on which the initial solid waste has been in place for a period of:

(1) 5 years or more if active; or

(2) 2 years or more if closed or at final grade.

(c) The following procedures shall be used for compliance with the surface methane operational standard as provided in §60.753(d).

(1) After installation of the collection system, the owner or operator shall monitor surface concentrations of methane along the entire perimeter of the collection area and along a pattern that traverses the landfill at 30 meter intervals (or a site-specific established spacing) for each collection area on a quarterly basis using an organic vapor analyzer, flame ionization detector, or other portable monitor meeting the specifications provided in paragraph (d) of this section.

(2) The background concentration shall be determined by moving the probe inlet upwind and downwind outside the boundary of the landfill at a distance of at least 30 meters from the perimeter wells.

(3) Surface emission monitoring shall be performed in accordance with section 4.3.1 of Method 21 of appendix A of this part, except that the probe inlet shall be placed within 5 to 10 centimeters of the ground. Monitoring shall be performed during typical meteorological conditions.

(4) Any reading of 500 parts per million or more above background at any location shall be recorded as a monitored exceedance and the actions specified in paragraphs (c)(4) (i) through (v) of this section shall be taken. As long as the specified actions are taken, the exceedance is not a violation of the operational requirements of §60.753(d).

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

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

(iii) If the re-monitoring of the location shows a second exceedance, additional corrective action shall be taken and the location shall be monitored again within 10 days of the second exceedance. If the re-monitoring shows a third exceedance for the same location, the action specified in paragraph (c)(4)(v) of this section shall be taken, and no further monitoring of that location is required until the action specified in paragraph (c)(4)(v) has been taken.

(iv) Any location that initially showed an exceedance but has a methane concentration less than 500 ppm methane above background at the 10-day re-monitoring specified in paragraph (c)(4) (ii) or (iii) of this section shall be re-monitored 1 month from the initial exceedance. If the 1-month re-monitoring shows a concentration less than 500 parts per million above background, no further monitoring of that location is required until the next quarterly monitoring period. If the 1-month re-monitoring shows an exceedance, the actions specified in paragraph (c)(4) (iii) or (v) shall be taken.

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

(5) The owner or operator shall implement a program to monitor for cover integrity and implement cover repairs as necessary on a monthly basis.

(d) Each owner or operator seeking to comply with the provisions in paragraph (c) of this section shall comply with the following instrumentation specifications and procedures for surface emission monitoring devices:

(1) The portable analyzer shall meet the instrument specifications provided in section 3 of Method 21 of appendix A of this part, except that "methane" shall replace all references to VOC.

(2) The calibration gas shall be methane, diluted to a nominal concentration of 500 parts per million in air.

(3) To meet the performance evaluation requirements in section 3.1.3 of Method 21 of appendix A of this part, the instrument evaluation procedures of section 4.4 of Method 21 of appendix A of this part shall be used.

(4) The calibration procedures provided in section 4.2 of Method 21 of appendix A of this part shall be followed immediately before commencing a surface monitoring survey.

(e) The provisions of this subpart 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 5 days for collection systems and shall not exceed 1 hour for treatment or control devices.

**§ 60.756 Monitoring of operations.**

Except as provided in §60.752(b)(2)(i)(B),

(a) Each owner or operator seeking to comply with §60.752(b)(2)(ii)(A) for 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:

(1) Measure the gauge pressure in the gas collection header on a monthly basis as provided in §60.755(a)(3); and

(2) Monitor nitrogen or oxygen concentration in the landfill gas on a monthly basis as provided in §60.755(a)(5); and

(3) Monitor temperature of the landfill gas on a monthly basis as provided in §60.755(a)(5).

(b) Each owner or operator seeking to comply with §60.752(b)(2)(iii) using an enclosed combustor shall calibrate, maintain, and operate according to the manufacturer's specifications, the following equipment.

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

(2) A device that records flow to or bypass of the control device. The owner or operator shall either:

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

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

(c) Each owner or operator seeking to comply with §60.752(b)(2)(iii) using an open flare shall install, calibrate, maintain, and operate according to the manufacturer's specifications the following equipment:

(1) A heat sensing device, such as an ultraviolet beam sensor or thermocouple, at the pilot light or the flame itself to indicate the continuous presence of a flame.

(d) Each owner or operator seeking to demonstrate compliance with §60.752(b)(2)(iii) using a device other than an open flare or an enclosed combustor shall provide information satisfactory to the Administrator as provided in §60.752(b)(2)(i)(B) describing the operation of the control device, the operating parameters that would indicate proper performance, and appropriate monitoring procedures. The Administrator shall review the information and either approve it, or request that additional information be submitted. The Administrator may specify additional appropriate monitoring procedures.

(e) Each owner or operator seeking to install a collection system that does not meet the specifications in §60.759 or seeking to monitor alternative parameters to those required by §60.753 through §60.756 shall provide information satisfactory to the Administrator as provided in §60.752(b)(2)(i) (B) and (C) describing the design and operation of the collection system, the operating parameters that would indicate proper performance, and appropriate monitoring procedures. The Administrator may specify additional appropriate monitoring procedures.

(f) Each owner or operator seeking to demonstrate compliance with §60.755(c), shall monitor surface concentrations of methane according to the instrument specifications and procedures provided in §60.755(d). Any closed landfill that has no monitored exceedances of the operational standard in three consecutive quarterly monitoring periods may skip to annual monitoring. Any methane reading of 500 ppm or more above background detected during the annual monitoring returns the frequency for that landfill to quarterly monitoring.

**§ 60.757 Reporting requirements.**

Except as provided in §60.752(b)(2)(i)(B),

(d) Each owner or operator of a controlled landfill shall submit a closure report to the Administrator within 30 days of waste acceptance cessation. The Administrator may request additional information as may be necessary to verify that permanent closure has taken place in accordance with the requirements of 40 CFR 258.60. If a closure report has been submitted to the Administrator, no additional wastes may be placed into the landfill without filing a notification of modification as described under §60.7(a)(4).

(e) Each owner or operator of a controlled landfill shall submit an equipment removal report to the Administrator 30 days prior to removal or cessation of operation of the control equipment.

(1) The equipment removal report shall contain all of the following items:

- (i) A copy of the closure report submitted in accordance with paragraph (d) of this section;
  - (ii) A copy of the initial performance test report demonstrating that the 15 year minimum control period has expired; and
  - (iii) Dated copies of three successive NMOC emission rate reports demonstrating that the landfill is no longer producing 50 megagrams or greater of NMOC per year.
- (2) The Administrator may request such additional information as may be necessary to verify that all of the conditions for removal in §60.752(b)(2)(v) have been met.
- (f) Each owner or operator of a landfill seeking to comply with §60.752(b)(2) using an active collection system designed in accordance with §60.752(b)(2)(ii) shall submit to the Administrator annual reports of the recorded information in (f)(1) through (f)(6) of this paragraph. The initial annual 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 §60.8. For enclosed combustion devices and flares, reportable exceedances are defined under §60.758(c).
- (1) Value and length of time for exceedance of applicable parameters monitored under §60.756(a), (b), (c), and (d).
  - (3) Description and duration of all periods when the control device was not operating for a period exceeding 1 hour and length of time the control device was not operating.
  - (4) All periods when the collection system was not operating in excess of 5 days.
  - (5) The location of each exceedance of the 500 parts per million methane concentration as provided in §60.753(d) and the concentration recorded at each location for which an exceedance was recorded in the previous month.
  - (6) The date of installation and the location of each well or collection system expansion added pursuant to paragraphs (a)(3), (b), and (c)(4) of §60.755.

*Note that compliance with the reporting requirements pursuant to 40 CFR 63.1980(a) shall constitute compliance with the reporting requirements pursuant to 40 CFR 63.757(f).*

- (g) Each owner or operator seeking to comply with §60.752(b)(2)(iii) shall include the following information with the initial performance test report required under §60.8:
- (1) 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;
  - (2) 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;
  - (3) 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;
  - (4) 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; and

(5) 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

(6) The provisions for the control of off-site migration.

**§ 60.758 Recordkeeping requirements.**

(a) Except as provided in §60.752(b)(2)(i)(B), each owner or operator of an MSW landfill subject to the provisions of §60.752(b) shall keep for at least 5 years up-to-date, readily accessible, on-site records of the design capacity report which triggered §60.752(b), the current amount of solid waste in-place, and the year-by-year waste acceptance rate. Off-site records may be maintained if they are retrievable within 4 hours. Either paper copy or electronic formats are acceptable.

(b) Except as provided in §60.752(b)(2)(i)(B), each owner or operator of a controlled landfill shall keep up-to-date, readily accessible records for the life of the control equipment of the data listed in paragraphs (b)(1) through (b)(4) of this section as measured during the initial performance test or compliance determination. Records of subsequent tests or monitoring shall be maintained for a minimum of 5 years. Records of the control device vendor specifications shall be maintained until removal.

(1) Where an owner or operator subject to the provisions of this subpart seeks to demonstrate compliance with §60.752(b)(2)(ii):

(i) The maximum expected gas generation flow rate as calculated in §60.755(a)(1). The owner or operator may use another method to determine the maximum gas generation flow rate, if the method has been approved by the Administrator.

(ii) The density of wells, horizontal collectors, surface collectors, or other gas extraction devices determined using the procedures specified in §60.759(a)(1).

(2) Where an owner or operator subject to the provisions of this subpart seeks to demonstrate compliance with §60.752(b)(2)(iii) through use of an enclosed combustion device other than a boiler or process heater with a design heat input capacity equal to or greater than 44 megawatts:

(i) The average combustion temperature measured at least every 15 minutes and averaged over the same time period of the performance test.

(ii) The percent reduction of NMOC determined as specified in §60.752(b)(2)(iii)(B) achieved by the control device.

(3) Where an owner or operator subject to the provisions of this subpart seeks to demonstrate compliance with §60.752(b)(2)(iii)(B)( 1 ) through use of a boiler or process heater of any size: a description of the location at which the collected gas vent stream is introduced into the boiler or process heater over the same time period of the performance testing.

(4) Where an owner or operator subject to the provisions of this subpart seeks to demonstrate compliance with §60.752(b)(2)(iii)(A) through use of an open flare, the flare type (i.e., steam-assisted, air-assisted, or nonassisted), all visible emission readings, heat content determination, flow rate or bypass flow rate measurements, and exit velocity determinations made during the performance test as specified in §60.18; continuous records of the flare pilot flame or flare flame monitoring and records of all periods of operations during which the pilot flame of the flare flame is absent.

(c) Except as provided in §60.752(b)(2)(i)(B), each owner or operator of a controlled landfill subject to the provisions of this subpart shall keep for 5 years up-to-date, readily accessible continuous records of the equipment operating parameters specified to be monitored in §60.756

as well as up-to-date, readily accessible records for periods of operation during which the parameter boundaries established during the most recent performance test are exceeded.

(1) The following constitute exceedances that shall be recorded and reported under §60.757(f):

(i) For enclosed combustors except for boilers and process heaters with design heat input capacity of 44 megawatts (150 million British thermal unit per hour) or greater, all 3-hour periods of operation during which the average combustion temperature was more than 28°C below the average combustion temperature during the most recent performance test at which compliance with §60.752(b)(2)(iii) was determined.

(ii) For boilers or process heaters, whenever there is a change in the location at which the vent stream is introduced into the flame zone as required under paragraph (b)(3) of this section.

(3) Each owner or operator subject to the provisions of this subpart who uses a boiler or process heater with a design heat input capacity of 44 megawatts or greater to comply with §60.752(b)(2)(iii) shall keep an up-to-date, readily accessible record of all periods of operation of the boiler or process heater. (Examples of such records could include records of steam use, fuel use, or monitoring data collected pursuant to other State, local, Tribal, or Federal regulatory requirements.)

(4) Each owner or operator seeking to comply with the provisions of this subpart by use of an open flare shall keep up-to-date, readily accessible continuous records of the flame or flare pilot flame monitoring specified under §60.756(c), and up-to-date, readily accessible records of all periods of operation in which the flame or flare pilot flame is absent.

(d) Except as provided in §60.752(b)(2)(i)(B), each owner or operator subject to the provisions of this subpart shall keep for the life of the collection system an up-to-date, readily accessible plot map showing each existing and planned collector in the system and providing a unique identification location label for each collector.

(1) Each owner or operator subject to the provisions of this subpart shall keep up-to-date, readily accessible records of the installation date and location of all newly installed collectors as specified under §60.755(b).

(2) Each owner or operator subject to the provisions of this subpart shall keep readily accessible documentation of the nature, date of deposition, amount, and location of asbestos-containing or nondegradable waste excluded from collection as provided in §60.759(a)(3)(i) as well as any nonproductive areas excluded from collection as provided in §60.759(a)(3)(ii).

(e) Except as provided in §60.752(b)(2)(i)(B), each owner or operator subject to the provisions of this subpart shall keep for at least 5 years up-to-date, readily accessible records of all collection and control system exceedances of the operational standards in §60.753, the reading in the subsequent month whether or not the second reading is an exceedance, and the location of each exceedance.

(f) Landfill owners or operators who convert design capacity from volume to mass or mass to volume to demonstrate that landfill design capacity is less than 2.5 million megagrams or 2.5 million cubic meters, as provided in the definition of "design capacity", shall keep readily accessible, on-site records of the annual recalculation of site-specific density, design capacity, and the supporting documentation. Off-site records may be maintained if they are retrievable within 4 hours. Either paper copy or electronic formats are acceptable.

**§ 60.759 Specifications for active collection systems.**

(a) Each owner or operator seeking to comply with §60.752(b)(2)(i) shall site active collection wells, horizontal collectors, surface collectors, or other extraction devices at a sufficient density

throughout all gas producing areas using the following procedures unless alternative procedures have been approved by the Administrator as provided in §60.752(b)(2)(i)(C) and (D):

(1) The collection devices within the interior and along the perimeter areas shall be certified to achieve comprehensive control of surface gas emissions by a professional engineer. The following issues shall be addressed in the design: depths of refuse, refuse gas generation rates and flow characteristics, cover properties, gas system expandability, leachate and condensate management, accessibility, compatibility with filling operations, integration with closure end use, air intrusion control, corrosion resistance, fill settlement, and resistance to the refuse decomposition heat.

(2) The sufficient density of gas collection devices determined in paragraph (a)(1) of this section shall address landfill gas migration issues and augmentation of the collection system through the use of active or passive systems at the landfill perimeter or exterior.

(3) The placement of gas collection devices determined in paragraph (a)(1) of this section shall control all gas producing areas, except as provided by paragraphs (a)(3)(i) and (a)(3)(ii) of this section.

(i) Any segregated area of asbestos or nondegradable material may be excluded from collection if documented as provided under §60.758(d). The documentation shall provide the nature, date of deposition, location and amount of asbestos or nondegradable material deposited in the area, and shall be provided to the Administrator upon request.

(ii) Any nonproductive area of the landfill may be excluded from control, provided that the total of all excluded areas can be shown to contribute less than 1 percent of the total amount of NMOC emissions from the landfill. The amount, location, and age of the material shall be documented and provided to the Administrator upon request. A separate NMOC emissions estimate shall be made for each section proposed for exclusion, and the sum of all such sections shall be compared to the NMOC emissions estimate for the entire landfill. Emissions from each section shall be computed using the following equation:

$$Q_i = 2 k L_o M_i (e^{-k t_i}) (C_{NMOC}) (3.6 \times 10^{-9})$$

where,

$Q_i$  = NMOC emission rate from the  $i^{\text{th}}$  section, megagrams per year

$k$  = methane generation rate constant, year<sup>-1</sup>

$L_o$  = methane generation potential, cubic meters per megagram solid waste

$M_i$  = mass of the degradable solid waste in the  $i^{\text{th}}$  section, megagram

$t_i$  = age of the solid waste in the  $i^{\text{th}}$  section, years

$C_{NMOC}$  = concentration of nonmethane organic compounds, parts per million by volume

$3.6 \times 10^{-9}$  = conversion factor

(iii) The values for  $k$  and  $C_{NMOC}$  determined in field testing shall be used if field testing has been performed in determining the NMOC emission rate or the radii of influence (this distance from the well center to a point in the landfill where the pressure gradient applied by the blower or compressor approaches zero). If field testing has not been performed, the default values for  $k$ ,  $L_o$  and  $C_{NMOC}$  provided in §60.754(a)(1) or the alternative values from §60.754(a)(5) shall be used. The mass of nondegradable solid waste contained within the given section may be subtracted from the total mass of the section when estimating emissions provided the nature, location, age, and amount of the nondegradable material is documented as provided in paragraph (a)(3)(i) of this section.

(b) Each owner or operator seeking to comply with §60.752(b)(2)(i)(A) shall construct the gas collection devices using the following equipment or procedures:

(1) The landfill gas extraction components shall be constructed of polyvinyl chloride (PVC), high density polyethylene (HDPE) pipe, fiberglass, stainless steel, or other nonporous corrosion resistant material of suitable dimensions to: convey projected amounts of gases; withstand installation, static, and settlement forces; and withstand planned overburden or traffic loads. The collection system shall extend as necessary to comply with emission and migration standards. Collection devices such as wells and horizontal collectors shall be perforated to allow gas entry without head loss sufficient to impair performance across the intended extent of control. Perforations shall be situated with regard to the need to prevent excessive air infiltration.

(2) Vertical wells shall be placed so as not to endanger underlying liners and shall address the occurrence of water within the landfill. Holes and trenches constructed for piped wells and horizontal collectors shall be of sufficient cross-section so as to allow for their proper construction and completion including, for example, centering of pipes and placement of gravel backfill. Collection devices shall be designed so as not to allow indirect short circuiting of air into the cover or refuse into the collection system or gas into the air. Any gravel used around pipe perforations should be of a dimension so as not to penetrate or block perforations.

(3) Collection devices may be connected to the collection header pipes below or above the landfill surface. The connector assembly shall include a positive closing throttle valve, any necessary seals and couplings, access couplings and at least one sampling port. The collection devices shall be constructed of PVC, HDPE, fiberglass, stainless steel, or other nonporous material of suitable thickness.

(c) Each owner or operator seeking to comply with §60.752(b)(2)(i)(A) shall convey the landfill gas to a control system in compliance with §60.752(b)(2)(iii) through the collection header pipe(s). The gas mover equipment shall be sized to handle the maximum gas generation flow rate expected over the intended use period of the gas moving equipment using the following procedures:

(1) For existing collection systems, the flow data shall be used to project the maximum flow rate. If no flow data exists, the procedures in paragraph (c)(2) of this section shall be used.

(2) For new collection systems, the maximum flow rate shall be in accordance with §60.755(a)(1).

### **National Emission Standards for Hazardous Air Pollutants (NESHAP) Requirements [326 IAC 2-7-5(1)]**

#### **D.1.8 General Provisions Relating to National Emission Standards for Hazardous Air Pollutants under 40 CFR Part 61 [326 IAC 14-1] [40 CFR Part 61, Subpart A]**

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(a) Pursuant to 40 CFR 61.156, the Permittee shall comply with the provisions of 40 CFR Part 61, Subpart A – General Provisions, which are incorporated by reference as 326 IAC 14-1-1 for the municipal solid waste landfill as specified in 40 CFR 61 Subpart M.

(b) Pursuant to 40 CFR 61.17, the Permittee shall submit all required notifications and reports to:

Indiana Department of Environmental Management  
Compliance Branch, Office of Air Quality  
100 North Senate Avenue  
MC 61-53 IGCN 1003  
Indianapolis, Indiana 46204-2251

#### **D.1.9 National Emission Standard for Asbestos Requirements [40 CFR Part 61, Subpart M][326 IAC 14-2]**

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Pursuant to CFR Part 61, Subpart M, the Permittee shall comply with the provisions of National

Emission Standards for Asbestos, which are incorporated by reference as 326 IAC 14-2 for the municipal solid waste landfill as specified as follows.

**§ 61.140 Applicability.**

The provisions of this subpart are applicable to those sources specified in §§61.142 through 61.151, 61.154, and 61.155.

**§ 61.141 Definitions.**

All terms that are used in this subpart and are not defined below are given the same meaning as in the Act and in subpart A of this part.

*Active waste disposal site* means any disposal site other than an inactive site.

*Adequately wet* means sufficiently mix or penetrate with liquid to prevent the release of particulates. If visible emissions are observed coming from asbestos-containing material, then that material has not been adequately wetted. However, the absence of visible emissions is not sufficient evidence of being adequately wet.

*Asbestos* means the asbestiform varieties of serpentinite (chrysotile), riebeckite (crocidolite), cummingtonite-grunerite, anthophyllite, and actinolite-tremolite.

*Asbestos-containing waste materials* means mill tailings or any waste that contains commercial asbestos and is generated by a source subject to the provisions of this subpart. This term includes filters from control devices, friable asbestos waste material, and bags or other similar packaging contaminated with commercial asbestos. As applied to demolition and renovation operations, this term also includes regulated asbestos-containing material waste and materials contaminated with asbestos including disposable equipment and clothing.

*Asbestos mill* means any facility engaged in converting, or in any intermediate step in converting, asbestos ore into commercial asbestos. Outside storage of asbestos material is not considered a part of the asbestos mill.

*Asbestos tailings* means any solid waste that contains asbestos and is a product of asbestos mining or milling operations.

*Asbestos waste from control devices* means any waste material that contains asbestos and is collected by a pollution control device.

*Category I nonfriable asbestos-containing material (ACM)* means asbestos-containing packings, gaskets, resilient floor covering, and asphalt roofing products containing more than 1 percent asbestos as determined using the method specified in appendix E, subpart E, 40 CFR part 763, section 1, Polarized Light Microscopy.

*Category II nonfriable ACM* means any material, excluding Category I nonfriable ACM, containing more than 1 percent asbestos as determined using the methods specified in appendix E, subpart E, 40 CFR part 763, section 1, Polarized Light Microscopy that, when dry, cannot be crumbled, pulverized, or reduced to powder by hand pressure.

*Commercial asbestos* means any material containing asbestos that is extracted from ore and has value because of its asbestos content.

*Cutting* means to penetrate with a sharp-edged instrument and includes sawing, but does not include shearing, slicing, or punching.

*Demolition* means the wrecking or taking out of any load-supporting structural member of a facility together with any related handling operations or the intentional burning of any facility.

*Emergency renovation operation* means a renovation operation that was not planned but results from a sudden, unexpected event that, if not immediately attended to, presents a safety or public health hazard, is necessary to protect equipment from damage, or is necessary to avoid imposing an unreasonable financial burden. This term includes operations necessitated by nonroutine failures of equipment.

*Fabricating* means any processing ( e.g., cutting, sawing, drilling) of a manufactured product that contains commercial asbestos, with the exception of processing at temporary sites (field fabricating) for the construction or restoration of facilities. In the case of friction products, fabricating includes bonding, debonding, grinding, sawing, drilling, or other similar operations performed as part of fabricating.

*Facility* means any institutional, commercial, public, industrial, or residential structure, installation, or building (including any structure, installation, or building containing condominiums or individual dwelling units operated as a residential cooperative, but excluding residential buildings having four or fewer dwelling units); any ship; and any active or inactive waste disposal site. For purposes of this definition, any building, structure, or installation that contains a loft used as a dwelling is not considered a residential structure, installation, or building. Any structure, installation or building that was previously subject to this subpart is not excluded, regardless of its current use or function.

*Facility component* means any part of a facility including equipment.

*Friable asbestos material* means any material containing more than 1 percent asbestos as determined using the method specified in appendix E, subpart E, 40 CFR part 763, section 1, Polarized Light Microscopy, that, when dry, can be crumbled, pulverized, or reduced to powder by hand pressure. If the asbestos content is less than 10 percent as determined by a method other than point counting by polarized light microscopy (PLM), verify the asbestos content by point counting using PLM.

*Fugitive source* means any source of emissions not controlled by an air pollution control device.

*Glove bag* means a sealed compartment with attached inner gloves used for the handling of asbestos-containing materials. Properly installed and used, glove bags provide a small work area enclosure typically used for small-scale asbestos stripping operations. Information on glove-bag installation, equipment and supplies, and work practices is contained in the Occupational Safety and Health Administration's (OSHA's) final rule on occupational exposure to asbestos (appendix G to 29 CFR 1926.58).

*Grinding* means to reduce to powder or small fragments and includes mechanical chipping or drilling.

*In poor condition* means the binding of the material is losing its integrity as indicated by peeling, cracking, or crumbling of the material.

*Inactive waste disposal site* means any disposal site or portion of it where additional asbestos-containing waste material has not been deposited within the past year.

*Installation* means any building or structure or any group of buildings or structures at a single demolition or renovation site that are under the control of the same owner or operator (or owner or operator under common control).

*Leak-tight* means that solids or liquids cannot escape or spill out. It also means dust-tight.

*Malfunction* means any sudden and unavoidable failure of air pollution control equipment or process equipment or of a process to operate in a normal or usual manner so that emissions of asbestos are increased. Failures of equipment shall not be considered malfunctions if they are caused in any way by poor maintenance, careless operation, or any other preventable upset conditions, equipment breakdown, or process failure.

*Manufacturing* means the combining of commercial asbestos—or, in the case of woven friction products, the combining of textiles containing commercial asbestos—with any other material(s), including commercial asbestos, and the processing of this combination into a product. Chlorine production is considered a part of manufacturing.

*Natural barrier* means a natural object that effectively precludes or deters access. Natural barriers include physical obstacles such as cliffs, lakes or other large bodies of water, deep and wide ravines, and mountains. Remoteness by itself is not a natural barrier.

*Nonfriable asbestos-containing material* means any material containing more than 1 percent asbestos as determined using the method specified in appendix E, subpart E, 40 CFR part 763, section 1, Polarized Light Microscopy, that, when dry, cannot be crumbled, pulverized, or reduced to powder by hand pressure.

*Nonscheduled renovation operation* means a renovation operation necessitated by the routine failure of equipment, which is expected to occur within a given period based on past operating experience, but for which an exact date cannot be predicted.

*Outside air* means the air outside buildings and structures, including, but not limited to, the air under a bridge or in an open air ferry dock.

*Owner or operator of a demolition or renovation activity* means any person who owns, leases, operates, controls, or supervises the facility being demolished or renovated or any person who owns, leases, operates, controls, or supervises the demolition or renovation operation, or both.

*Particulate asbestos material* means finely divided particles of asbestos or material containing asbestos.

*Planned renovation operations* means a renovation operation, or a number of such operations, in which some RACM will be removed or stripped within a given period of time and that can be predicted. Individual nonscheduled operations are included if a number of such operations can be predicted to occur during a given period of time based on operating experience.

*Regulated asbestos-containing material (RACM)* means (a) Friable asbestos material, (b) Category I nonfriable ACM that has become friable, (c) Category I nonfriable ACM that will be or has been subjected to sanding, grinding, cutting, or abrading, or (d) Category II nonfriable ACM that has a high probability of becoming or has become crumbled, pulverized, or reduced to powder by the forces expected to act on the material in the course of demolition or renovation operations regulated by this subpart.

*Remove* means to take out RACM or facility components that contain or are covered with RACM from any facility.

*Renovation* means altering a facility or one or more facility components in any way, including the stripping or removal of RACM from a facility component. Operations in which load-supporting structural members are wrecked or taken out are demolitions.

*Resilient floor covering* means asbestos-containing floor tile, including asphalt and vinyl floor tile, and sheet vinyl floor covering containing more than 1 percent asbestos as determined using

polarized light microscopy according to the method specified in appendix E, subpart E, 40 CFR part 763, section 1, Polarized Light Microscopy.

*Roadways* means surfaces on which vehicles travel. This term includes public and private highways, roads, streets, parking areas, and driveways.

*Strip* means to take off RACM from any part of a facility or facility components.

*Structural member* means any load-supporting member of a facility, such as beams and load supporting walls; or any nonload-supporting member, such as ceilings and nonload-supporting walls.

*Visible emissions* means any emissions, which are visually detectable without the aid of instruments, coming from RACM or asbestos-containing waste material, or from any asbestos milling, manufacturing, or fabricating operation. This does not include condensed, uncombined water vapor.

*Waste generator* means any owner or operator of a source covered by this subpart whose act or process produces asbestos-containing waste material.

*Waste shipment record* means the shipping document, required to be originated and signed by the waste generator, used to track and substantiate the disposition of asbestos-containing waste material.

*Working day* means Monday through Friday and includes holidays that fall on any of the days Monday through Friday.

### **§ 61.153 Reporting.**

(a) Any new source to which this subpart applies (with the exception of sources subject to §§61.143, 61.145, 61.146, and 61.148), which has an initial startup date preceding the effective date of this revision, shall provide the following information to the Administrator postmarked or delivered within 90 days of the effective date. In the case of a new source that does not have an initial startup date preceding the effective date, the information shall be provided, postmarked or delivered, within 90 days of the initial startup date. Any owner or operator of an existing source shall provide the following information to the Administrator within 90 days of the effective date of this subpart unless the owner or operator of the existing source has previously provided this information to the Administrator. Any changes in the information provided by any existing source shall be provided to the Administrator, postmarked or delivered, within 30 days after the change.

(5) For sources subject to §§61.151 and 61.154:

(i) A brief description of the site; and

(ii) The method or methods used to comply with the standard, or alternative procedures to be used.

(b) The information required by paragraph (a) of this section must accompany the information required by §61.10. Active waste disposal sites subject to §61.154 shall also comply with this provision. Roadways, demolition and renovation, spraying, and insulating materials are exempted from the requirements of §61.10(a). The information described in this section must be reported using the format of appendix A of this part as a guide.

### **§ 61.154 Standard for active waste disposal sites.**

Each owner or operator of an active waste disposal site that receives asbestos-containing waste material from a source covered under §61.149, 61.150, or 61.155 shall meet the requirements of this section:

(a) Either there must be no visible emissions to the outside air from any active waste disposal site where asbestos-containing waste material has been deposited, or the requirements of paragraph (c) or (d) of this section must be met.

(b) Unless a natural barrier adequately deters access by the general public, either warning signs and fencing must be installed and maintained as follows, or the requirements of paragraph (c)(1) of this section must be met.

(1) Warning signs must be displayed at all entrances and at intervals of 100 m (330 ft) or less along the property line of the site or along the perimeter of the sections of the site where asbestos-containing waste material is deposited. The warning signs must:

(i) Be posted in such a manner and location that a person can easily read the legend; and

(ii) Conform to the requirements of 51 cm × 36 cm (20&inch;×14&inch;) upright format signs specified in 29 CFR 1910.145(d)(4) and this paragraph; and

(iii) Display the following legend in the lower panel with letter sizes and styles of a visibility at least equal to those specified in this paragraph.

<b>Legend</b>	<b>Notation</b>
Asbestos Waste Disposal Site	2.5 cm (1 inch) Sans Serif, Gothic or Block.
Do Not Create Dust	1.9 cm ( 3/4 inch) Sans Serif, Gothic or Block.
Breathing Asbestos is Hazardous to Your Health	14 Point Gothic.

Spacing between any two lines must be at least equal to the height of the upper of the two lines.

(2) The perimeter of the disposal site must be fenced in a manner adequate to deter access by the general public.

(3) Upon request and supply of appropriate information, the Administrator will determine whether a fence or a natural barrier adequately deters access by the general public.

(c) Rather than meet the no visible emission requirement of paragraph (a) of this section, at the end of each operating day, or at least once every 24-hour period while the site is in continuous operation, the asbestos-containing waste material that has been deposited at the site during the operating day or previous 24-hour period shall:

(1) Be covered with at least 15 centimeters (6 inches) of compacted nonasbestos-containing material, or

(2) Be covered with a resinous or petroleum-based dust suppression agent that effectively binds dust and controls wind erosion. Such an agent shall be used in the manner and frequency recommended for the particular dust by the dust suppression agent manufacturer to achieve and maintain dust control. Other equally effective dust suppression agents may be used upon prior approval by the Administrator. For purposes of this paragraph, any used, spent, or other waste oil is not considered a dust suppression agent.

(d) Rather than meet the no visible emission requirement of paragraph (a) of this section, use an alternative emissions control method that has received prior written approval by the Administrator according to the procedures described in §61.149(c)(2).

(e) For all asbestos-containing waste material received, the owner or operator of the active waste disposal site shall:

(1) Maintain waste shipment records, using a form similar to that shown in Figure 4, and include the following information:

(i) The name, address, and telephone number of the waste generator.

(ii) The name, address, and telephone number of the transporter(s).

(iii) The quantity of the asbestos-containing waste material in cubic meters (cubic yards).

(iv) The presence of improperly enclosed or uncovered waste, or any asbestos-containing waste material not sealed in leak-tight containers. Report in writing to the local, State, or EPA Regional office responsible for administering the asbestos NESHAP program for the waste generator (identified in the waste shipment record), and, if different, the local, State, or EPA Regional office responsible for administering the asbestos NESHAP program for the disposal site, by the following working day, the presence of a significant amount of improperly enclosed or uncovered waste. Submit a copy of the waste shipment record along with the report.

(v) The date of the receipt.

(2) As soon as possible and no longer than 30 days after receipt of the waste, send a copy of the signed waste shipment record to the waste generator.

(3) Upon discovering a discrepancy between the quantity of waste designated on the waste shipment records and the quantity actually received, attempt to reconcile the discrepancy with the waste generator. If the discrepancy is not resolved within 15 days after receiving the waste, immediately report in writing to the local, State, or EPA Regional office responsible for administering the asbestos NESHAP program for the waste generator (identified in the waste shipment record), and, if different, the local, State, or EPA Regional office responsible for administering the asbestos NESHAP program for the disposal site. Describe the discrepancy and attempts to reconcile it, and submit a copy of the waste shipment record along with the report.

(4) Retain a copy of all records and reports required by this paragraph for at least 2 years.

(f) Maintain, until closure, records of the location, depth and area, and quantity in cubic meters (cubic yards) of asbestos-containing waste material within the disposal site on a map or diagram of the disposal area.

(g) Upon closure, comply with all the provisions of §61.151.

(h) Submit to the Administrator, upon closure of the facility, a copy of records of asbestos waste disposal locations and quantities.

(i) Furnish upon request, and make available during normal business hours for inspection by the Administrator, all records required under this section.

(j) Notify the Administrator in writing at least 45 days prior to excavating or otherwise disturbing any asbestos-containing waste material that has been deposited at a waste disposal site and is covered. If the excavation will begin on a date other than the one contained in the original notice, notice of the new start date must be provided to the Administrator at least 10 working days before

excavation begins and in no event shall excavation begin earlier than the date specified in the original notification. Include the following information in the notice:

- (1) Scheduled starting and completion dates.
- (2) Reason for disturbing the waste.
- (3) Procedures to be used to control emissions during the excavation, storage, transport, and ultimate disposal of the excavated asbestos-containing waste material. If deemed necessary, the Administrator may require changes in the emission control procedures to be used.
- (4) Location of any temporary storage site and the final disposal site.

**§ 61.156 Cross-reference to other asbestos regulations.**

In addition to this subpart, the regulations referenced in Table 1 also apply to asbestos and may be applicable to those sources specified in §§61.142 through 61.151, 61.154, and 61.155 of this subpart. These cross-references are presented for the reader's information and to promote compliance with the cited regulations.

**Table 1—Cross-Reference to Other Asbestos Regulations**

Agency	CFR citation	Comment
EPA	40 CFR part 763, subpart E	Requires schools to inspect for asbestos and implement response actions and submit asbestos management plans to States. Specifies use of accredited inspectors, air sampling methods, and waste disposal procedures.
	40 CFR part 427	Effluent standards for asbestos manufacturing source categories.
	40 CFR part 763, subpart G	Protects public employees performing asbestos abatement work in States not covered by OSHA asbestos standard.
OSHA	29 CFR 1910.1001	Worker protection measures-engineering controls, worker training, labeling, respiratory protection, bagging of waste, permissible exposure level.
	29 CFR 1926.1101	Worker protection measures for all construction work involving asbestos, including demolition and renovation-work practices, worker training, bagging of waste, permissible exposure level.
MSHA	30 CFR part 56, subpart D	Specifies exposure limits, engineering controls, and respiratory protection measures for workers in surface mines.
	30 CFR part 57, subpart D	Specifies exposure limits, engineering controls, and respiratory protection measures for workers in underground mines.
DOT	49 CFR parts 171 and 172	Regulates the transportation of asbestos-containing waste material. Requires waste containment and shipping papers.

**§ 61.157 Delegation of authority.**

(a) In delegating implementation and enforcement authority to a State under section 112(d) of the Act, the authorities contained in paragraph (b) of this section shall be retained by the Administrator and not transferred to a State.

(b) Authorities that will not be delegated to States:

- (1) Section 61.149(c)(2)

(2) Section 61.150(a)(4)

(3) Section 61.151(c)

(4) Section 61.152(b)(3)

(5) Section 61.154(d)

(6) Section 61.155(a).

D.1.10 General Provisions Relating to National Emission Standards for Hazardous Air Pollutants under 40 CFR Part 63 [326 IAC 20-1] [40 CFR Part 63, Subpart A]

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- (a) Pursuant to 40 CFR 63.1955, the Permittee shall comply with the provisions of 40 CFR Part 63, Subpart A – General Provisions, which are incorporated by reference as 326 IAC 20-1-1 for the municipal solid waste landfill as specified in Table 1 of 40 CFR 63, Subpart AAAA in accordance with schedule in 40 CFR 63 Subpart AAAA.
- (b) Pursuant to 40 CFR 63.10, the Permittee shall submit all required notifications and reports to:  
Indiana Department of Environmental Management  
Compliance Branch, Office of Air Quality  
100 North Senate Avenue  
MC 61-53 IGCN 1003  
Indianapolis, Indiana 46204-2251
- (c) Pursuant to a determination letter from EPA region V (dated February 25, 2004), the landfill gas treatment system at the source is considered a treatment system that meets the intent of 40 CFR 60.752 (b)(2)(iii)(c). The eight (8) engine/generator sets (EG1 through EG8), which combust the treated landfill gas, are not subject to the operational requirements in 40 CFR 60.753, the testing requirements in 40 CFR 60.754, the monitoring requirements in 40 CFR 60.756, the reporting requirements in 40 CFR 60.757, and the record keeping requirements in 40 CFR 60.758. The eight (8) engine/generator sets (EG1 through EG8) are also not subject to the requirements of 40 CFR 63, Subpart AAAA and 40 CFR 63, Subpart ZZZZ.

D.1.11 National Emission Standards for Hazardous Air Pollutants: Municipal Solid Waste Landfills Requirements [40 CFR Part 63, Subpart AAAA] [326 IAC 20-67]

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Pursuant to CFR Part 63, Subpart AAAA, the Permittee shall comply with the provisions of National Emission Standards for Hazardous Air Pollutants: Municipal Solid Waste Landfills, which are incorporated by reference as 326 IAC 20-67 for the municipal solid waste landfill as specified as follows.

**§ 63.1930 What is the purpose of this subpart?**

This subpart establishes national emission standards for hazardous air pollutants for existing and new municipal solid waste (MSW) landfills. This subpart requires all landfills described in §63.1935 to meet the requirements of 40 CFR part 60, subpart Cc or WWW and requires timely control of bioreactors. This subpart also requires such landfills to meet the startup, shutdown, and malfunction (SSM) requirements of the general provisions of this part and provides that compliance with the operating conditions shall be demonstrated by parameter monitoring results that are within the specified ranges. It also includes additional reporting requirements.

**§ 63.1935 Am I subject to this subpart?**

You are subject to this subpart if you meet the criteria in paragraph (a) or (b) of this section.

(a) You are subject to this subpart if you own or operate a MSW landfill that has accepted waste since November 8, 1987 or has additional capacity for waste deposition and meets any one of the three criteria in paragraphs (a)(1) through (3) of this section:

(1) Your MSW landfill is a major source as defined in 40 CFR 63.2 of subpart A.

(2) Your MSW landfill is collocated with a major source as defined in 40 CFR 63.2 of subpart A.

(3) Your MSW landfill is an area source landfill that has a design capacity equal to or greater than 2.5 million megagrams (Mg) and 2.5 million cubic meters (m<sup>3</sup>) and has estimated uncontrolled emissions equal to or greater than 50 megagrams per year (Mg/yr) NMOC as calculated according to §60.754(a) of the MSW landfills new source performance standards in 40 CFR part 60, subpart WWW, the Federal plan, or an EPA approved and effective State or tribal plan that applies to your landfill.

**§ 63.1940 What is the affected source of this subpart?**

(a) An affected source of this subpart is a MSW landfill, as defined in §63.1990, that meets the criteria in §63.1935(a) or (b). The affected source includes the entire disposal facility in a contiguous geographic space where household waste is placed in or on land, including any portion of the MSW landfill operated as a bioreactor.

(c) An affected source of this subpart is existing if it is not new.

**§ 63.1945 When do I have to comply with this subpart?**

(b) If your landfill is an existing affected source, you must comply with this subpart by January 16, 2004.

(f) If your landfill is an existing affected source and is an area source meeting the criteria in §63.1935(a)(3), you must comply with the requirements in §§63.1955(b) and 63.1960 through 63.1980 by the date your landfill is required to install a collection and control system by 40 CFR 60.752(b)(2) of subpart WWW, the Federal plan, or EPA approved and effective State or tribal plan that applies to your landfill or by January 16, 2004, whichever occurs later.

**§ 63.1950 When am I no longer required to comply with this subpart?**

You are no longer required to comply with the requirements of this subpart when you are no longer required to apply controls as specified in 40 CFR 60.752(b)(2)(v) of subpart WWW, or the Federal plan or EPA approved and effective State plan or tribal plan that implements 40 CFR part 60, subpart Cc, whichever applies to your landfill.

**§ 63.1955 What requirements must I meet?**

(a) You must fulfill one of the requirements in paragraph (a)(1) or (2) of this section, whichever is applicable:

(1) Comply with the requirements of 40 CFR part 60, subpart WWW.

(b) 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 §§63.1960 through 63.1985 and with the general provisions of this part specified in table 1 of this subpart.

(c) For approval of collection and control systems that include any alternatives to the operational standards, test methods, procedures, compliance measures, monitoring, recordkeeping or reporting provisions, you must follow the procedures in 40 CFR 60.752(b)(2). If alternatives have already been approved under 40 CFR part 60 subpart WWW or the Federal plan, or EPA approved and effective State or tribal plan, these alternatives can be used to comply with this subpart, except that all affected sources must comply with the SSM requirements in Subpart A of this part as specified in Table 1 of this subpart and all affected sources must submit compliance reports every 6 months as specified in §63.1980(a) and (b), including information on all deviations that occurred during the 6-month reporting period. Deviations for continuous emission monitors or numerical continuous parameter monitors must be determined using a 3 hour monitoring block average.

**§ 63.1960 How is compliance determined?**

Compliance 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 this subpart and have deviated from the requirements of this subpart. 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 this subpart.

**§ 63.1965 What is a deviation?**

A deviation is defined in §63.1990. For the purposes of the landfill monitoring and SSM plan requirements, deviations include the items in paragraphs (a) through (c) of this section.

(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 1 hour or more of the hours during the 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 15-minute monitoring periods within the hour.

(c) A deviation occurs when a SSM plan is not developed or maintained on site.

**§ 63.1975 How do I calculate the 3-hour block average used to demonstrate compliance?**

Averages are calculated in the same way as they are calculated in 40 CFR part 60, subpart WWW, except that the data collected during the events listed in paragraphs (a), (b), (c), and (d) of this section are not to be included in any average computed under this subpart:

(a) Monitoring system breakdowns, repairs, calibration checks, and zero (low-level) and high-level adjustments.

(b) Startups.

(c) Shutdowns.

(d) Malfunctions.

**§ 63.1980 What records and reports must I keep and submit?**

(a) Keep records and reports as specified in 40 CFR part 60, subpart WWW, or in the Federal plan, EPA approved State plan or tribal plan that implements 40 CFR part 60, subpart Cc, whichever applies to your landfill, with one exception: You must submit the annual report described in 40 CFR 60.757(f) every 6 months.

(b) You must also keep records and reports as specified in the general provisions of 40 CFR part 60 and this part as shown in Table 1 of this subpart. Applicable records in the general provisions include items such as SSM plans and the SSM plan reports.

(g) If you add any liquids other than leachate in a controlled fashion to the waste mass and do not comply with the bioreactor requirements in §§63.1947, 63.1955(c) and 63.1980(c) through (f) of this subpart, you must keep a record of calculations showing that the percent moisture by weight expected in the waste mass to which liquid is added is less than 40 percent. The calculation must consider the waste mass, moisture content of the incoming waste, mass of water added to the waste including leachate recirculation and other liquids addition and precipitation, and the mass of water removed through leachate or other water losses. Moisture level sampling or mass balances calculations can be used. You must document the calculations and the basis of any assumptions. Keep the record of the calculations until you cease liquids addition.

**§ 63.1985 Who enforces this subpart?**

(a) This subpart can be implemented and enforced by the U.S. EPA, or a delegated authority such as the applicable State, local, or tribal agency. If the EPA Administrator has delegated authority to a State, local, or tribal agency, then that agency as well as the U.S. EPA has the authority to implement and enforce this subpart. Contact the applicable EPA Regional Office to find out if this subpart is delegated to a State, local, or tribal agency.

(b) In delegating implementation and enforcement authority of this subpart to a State, local, or tribal agency under subpart E of this part, the authorities contained in paragraph (c) of this section are retained by the EPA Administrator and are not transferred to the State, local, or tribal agency.

(c) The authorities that will not be delegated to State, local, or tribal agencies are as follows. Approval of alternatives to the standards in §63.1955. Where these standards reference another subpart, the cited provisions will be delegated according to the delegation provisions of the referenced subpart.

**§ 63.1990 What definitions apply to this subpart?**

Terms used in this subpart are defined in the Clean Air Act, 40 CFR part 60, subparts A, Cc, and WWW; 40 CFR part 62, subpart GGG, and subpart A of this part, and this section that follows:

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

*Deviation* means any instance in which an affected source subject to this subpart, or an owner or operator of such a source:

(1) 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;

(2) 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

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

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

*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.

*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.

*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 municipal solid waste landfill may also receive other types of RCRA Subtitle D wastes (see §257.2 of this chapter) such as commercial solid waste, nonhazardous sludge, conditionally exempt small quantity generator waste, and industrial solid waste. Portions of a municipal solid waste landfill may be separated by access roads. A municipal solid waste landfill may be publicly or privately owned. A municipal solid waste landfill may be a new municipal solid waste landfill, an existing municipal solid waste landfill, or a lateral expansion.

*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.

*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.

As stated in §§63.1955 and 63.1980, you must meet each requirement in the following table that applies to you.

**Table 1 to Subpart AAAA of Part 63—Applicability of NESHAP General Provisions to Subpart AAAA**

Part 63 Citation	Description	Explanation
63.1(a)	Applicability: general applicability of NESHAP in this part	Affected sources are already subject to the provisions of paragraphs (a)(10)–(12) through the same provisions under 40 CFR, part 60 subpart A.
63.1(b)	Applicability determination for stationary sources	
63.1(e)	Title V permitting	
63.2	Definitions	

<b>Part 63 Citation</b>	<b>Description</b>	<b>Explanation</b>
63.4	Prohibited activities and circumvention	Affected sources are already subject to the provisions of paragraph (b) through the same provisions under 40 CFR, part 60 subpart A.
63.5(b)	Requirements for existing, newly constructed, and reconstructed sources	
63.6(e)	Operation and maintenance requirements, startup, shutdown and malfunction plan provisions	
63.6(f)	Compliance with nonopacity emission standards	Affected sources are already subject to the provisions of paragraphs (f)(1) and (2)(i) through the same provisions under 40 CFR, part 60 subpart A.
63.10(b)(2)(i)–(b)(2)(v)	General recordkeeping requirements	
63.10(d)(5)	If actions taken during a startup, shutdown and malfunction plan are consistent with the procedures in the startup, shutdown and malfunction plan, this information shall be included in a semi-annual startup, shutdown and malfunction plan report. Any time an action taken during a startup, shutdown and malfunction plan is not consistent with the startup, shutdown and malfunction plan, the source shall report actions taken within 2 working days after commencing such actions, followed by a letter 7 days after the event	
63.12(a)	These provisions do not preclude the State from adopting and enforcing any standard, limitation, etc., requiring permits, or requiring emissions reductions in excess of those specified	
63.15	Availability of information and confidentiality	

## SECTION D.2 FACILITY OPERATION CONDITIONS

### Facility Description [326 IAC 2-7-5(15)]:

#### Insignificant Activity

- (a) One (1) tipper engine, identified as TIPPER1, with a rated capacity of 115 horsepower. [326 IAC 6.5-1]
- (b) Three (3) passive vent flares, each with a capacity of 50 scfm of landfill gas, constructed in 2005. [326 IAC 6.5-1]
- (c) One (1) 20 gallon small parts washing station, using Safety Kleen or other similar cleaning solvent; [326 IAC 8-3-2][326 IAC 8-3-5]

(The information describing the process contained in this facility description box is descriptive information and does not constitute enforceable conditions.)

### Emission Limitations and Standards [326 IAC 2-7-5(1)] (Cold Cleaning Degreaser Operations)

#### D.2.1 Particulate Matter (PM) [326 IAC 6.5-1]

Pursuant to 326 IAC 6.5-1-2(a)(Nonattainment Area Particulate Limitations), particulate matter (PM) emissions from the tipper engine (TIPPER1) and the three (3) passive vent flares shall each be limited to 0.03 grain per dry standard cubic foot of exhaust air.

#### D.2.2 Volatile Organic Compounds (VOC) [326 IAC 8-3-2]

Pursuant to 326 IAC 8-3-2 (Cold Cleaner Operations), for cold cleaning operations constructed after January 1, 1980, the Permittee shall:

- (a) Equip the cleaner with a cover;
- (b) Equip the cleaner with a facility for draining cleaned parts;
- (c) Close the degreaser cover whenever parts are not being handled in the cleaner;
- (d) Drain cleaned parts for at least fifteen (15) seconds or until dripping ceases;
- (e) Provide a permanent, conspicuous label summarizing the operation requirements;
- (f) Store waste solvent only in covered containers and not dispose of waste solvent or transfer it to another party, in such a manner that greater than twenty percent (20%) of the waste solvent (by weight) can evaporate into the atmosphere.

#### D.2.3 Volatile Organic Compounds (VOC) [326 IAC 8-3-5]

- (a) Pursuant to 326 IAC 8-3-5(a) (Cold Cleaner Degreaser Operation and Control), for cold cleaner degreaser operations without remote solvent reservoirs constructed after July 1, 1990, the Permittee shall ensure that the following control equipment requirements are met:
  - (1) Equip the degreaser with a cover. The cover must be designed so that it can be easily operated with one (1) hand if:

- (A) The solvent volatility is greater than two (2) kiloPascals (fifteen (15) millimeters of mercury or three-tenths (0.3) pounds per square inch) measured at thirty-eight degrees Celsius (38°C) (one hundred degrees Fahrenheit (100°F));
  - (B) The solvent is agitated; or
  - (C) The solvent is heated.
- (2) Equip the degreaser with a facility for draining cleaned articles. If the solvent volatility is greater than four and three-tenths (4.3) kiloPascals (thirty-two (32) millimeters of mercury or six-tenths (0.6) pounds per square inch) measured at thirty-eight degrees Celsius (38°C) (one hundred degrees Fahrenheit (100°F)), then the drainage facility must be internal such that articles are enclosed under the cover while draining. The drainage facility may be external for applications where an internal type cannot fit into the cleaning system.
- (3) Provide a permanent, conspicuous label which lists the operating requirements outlined in subsection (b).
- (4) The solvent spray, if used, must be a solid, fluid stream and shall be applied at a pressure which does not cause excessive splashing.
- (5) Equip the degreaser with one (1) of the following control devices if the solvent volatility is greater than four and three-tenths (4.3) kiloPascals (thirty-two (32) millimeters of mercury or six-tenths (0.6) pounds per square inch) measured at thirty-eight degrees Celsius (38°C) (one hundred degrees Fahrenheit (100°F)), or if the solvent is heated to a temperature greater than forty-eight and nine-tenths degrees Celsius (48.9°C) (one hundred twenty degrees Fahrenheit (120°F)):
- (A) A freeboard that attains a freeboard ratio of seventy-five hundredths (0.75) or greater.
  - (B) A water cover when solvent is used is insoluble in, and heavier than, water.
  - (C) Other systems of demonstrated equivalent control such as a refrigerated chiller or carbon adsorption. Such systems shall be submitted to the U.S. EPA as a SIP revision.
- (b) Pursuant to 326 IAC 8-3-5(b) (Cold Cleaner Degreaser Operation and Control), the owner or operator of a cold cleaning facility construction of which commenced after July 1, 1990, shall ensure that the following operating requirements are met:
- (1) Close the cover whenever articles are not being handled in the degreaser.
  - (2) Drain cleaned articles for at least fifteen (15) seconds or until dripping ceases.
  - (3) Store waste solvent only in covered containers and prohibit the disposal or transfer of waste solvent in any manner in which greater than twenty percent (20%) of the waste solvent by weight could evaporate.

**INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT  
OFFICE OF AIR QUALITY  
PART 70 OPERATING PERMIT  
CERTIFICATION**

Source Name: Prairie View Recycling and Disposal Facility  
Source Address: 15505 Shively Road, Wyatt, Indiana 46595  
Mailing Address: P.O. Box 128, 15505 Shively Road, Wyatt, Indiana 46595  
Part 70 Permit No.: T141-18138-00051

**This certification shall be included when submitting monitoring, testing reports/results or other documents as required by this permit.**

Please check what document is being certified:

- Annual Compliance Certification Letter
- Test Result (specify)
- Report (specify)
- Notification (specify)
- Affidavit (specify)
- Other (specify)

I certify that, based on information and belief formed after reasonable inquiry, the statements and information in the document are true, accurate, and complete.

Signature:

Printed Name:

Title/Position:

Phone:

Date:

**INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT  
OFFICE OF AIR QUALITY  
COMPLIANCE BRANCH  
100 North Senate Avenue  
MC 61-53 IGCN 1003  
Indianapolis, Indiana 46204-2251  
Phone: 317-233-0178  
Fax: 317-233-6865**

**PART 70 OPERATING PERMIT  
EMERGENCY OCCURRENCE REPORT**

Source Name: Prairie View Recycling and Disposal Facility  
Source Address: 15505 Shively Road, Wyatt, Indiana 46595  
Mailing Address: P.O. Box 128, 15505 Shively Road, Wyatt, Indiana 46595  
Part 70 Permit No.: T141-18138-00051

**This form consists of 2 pages**

**Page 1 of 2**

- This is an emergency as defined in 326 IAC 2-7-1(12)
- The Permittee must notify the Office of Air Quality (OAQ), within four (4) business hours (1-800-451-6027 or 317-233-0178, ask for Compliance Section); and
  - The Permittee must submit notice in writing or by facsimile within two (2) working days (Facsimile Number: 317-233-6865), and follow the other requirements of 326 IAC 2-7-16.

If any of the following are not applicable, mark N/A

Facility/Equipment/Operation:
Control Equipment:
Permit Condition or Operation Limitation in Permit:
Description of the Emergency:
Describe the cause of the Emergency:

If any of the following are not applicable, mark N/A

Page 2 of 2

Date/Time Emergency started:
Date/Time Emergency was corrected:
Was the facility being properly operated at the time of the emergency?    Y    N
Type of Pollutants Emitted: TSP, PM-10, SO <sub>2</sub> , VOC, NO <sub>x</sub> , CO, Pb, other:
Estimated amount of pollutant(s) emitted during emergency:
Describe the steps taken to mitigate the problem:
Describe the corrective actions/response steps taken:
Describe the measures taken to minimize emissions:
If applicable, describe the reasons why continued operation of the facilities are necessary to prevent imminent injury to persons, severe damage to equipment, substantial loss of capital investment, or loss of product or raw materials of substantial economic value:

Form Completed by: \_\_\_\_\_

Title / Position: \_\_\_\_\_

Date: \_\_\_\_\_

Phone: \_\_\_\_\_

A certification is not required for this report.

**INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT  
 OFFICE OF AIR QUALITY  
 COMPLIANCE DATA SECTION  
 PART 70 OPERATING PERMIT  
 QUARTERLY DEVIATION AND COMPLIANCE MONITORING REPORT**

Source Name: Prairie View Recycling and Disposal Facility  
 Source Address: 15505 Shively Road, Wyatt, Indiana 46595  
 Mailing Address: P.O. Box 128, 15505 Shively Road, Wyatt, Indiana 46595  
 Part 70 Permit No.: T141-18138-00051

**Months:** \_\_\_\_\_ **to** \_\_\_\_\_ **Year:** \_\_\_\_\_

<p>This report shall be submitted quarterly based on a calendar year. Any deviation from the requirements, the date(s) of each deviation, the probable cause of the deviation, and the response steps taken must be reported. A deviation required to be reported pursuant to an applicable requirement that exists independent of the permit, shall be reported according to the schedule stated in the applicable requirement and does not need to be included in this report. Additional pages may be attached if necessary. If no deviations occurred, please specify in the box marked "No deviations occurred this reporting period".</p>	
<input type="checkbox"/> NO DEVIATIONS OCCURRED THIS REPORTING PERIOD.	
<input type="checkbox"/> THE FOLLOWING DEVIATIONS OCCURRED THIS REPORTING PERIOD	
<b>Permit Requirement</b> (specify permit condition #)	
<b>Date of Deviation:</b>	<b>Duration of Deviation:</b>
<b>Number of Deviations:</b>	
<b>Probable Cause of Deviation:</b>	
<b>Response Steps Taken:</b>	
<b>Permit Requirement</b> (specify permit condition #)	
<b>Date of Deviation:</b>	<b>Duration of Deviation:</b>
<b>Number of Deviations:</b>	
<b>Probable Cause of Deviation:</b>	
<b>Response Steps Taken:</b>	

<b>Permit Requirement (specify permit condition #)</b>	
<b>Date of Deviation:</b>	<b>Duration of Deviation:</b>
<b>Number of Deviations:</b>	
<b>Probable Cause of Deviation:</b>	
<b>Response Steps Taken:</b>	
<b>Permit Requirement (specify permit condition #)</b>	
<b>Date of Deviation:</b>	<b>Duration of Deviation:</b>
<b>Number of Deviations:</b>	
<b>Probable Cause of Deviation:</b>	
<b>Response Steps Taken:</b>	
<b>Permit Requirement (specify permit condition #)</b>	
<b>Date of Deviation:</b>	<b>Duration of Deviation:</b>
<b>Number of Deviations:</b>	
<b>Probable Cause of Deviation:</b>	
<b>Response Steps Taken:</b>	

Form Completed by: \_\_\_\_\_

Title / Position: \_\_\_\_\_

Date: \_\_\_\_\_

Phone: \_\_\_\_\_

Attach a signed certification to complete this report.

# Indiana Department of Environmental Management Office of Air Quality

## Addendum to the Technical Support Document for a Part 70 Operating Permit Renewal

Source Name: Prairie View Recycling and Disposal Facility  
Source Location: 15505 Shively Road, Wyatt, IN 46595  
County: St. Joseph  
SIC Code: 4953, 4911  
Operation Permit No.: T141-18138-00051  
Permit Reviewer: Trish Earls/EVP

On October 31, 2007, the Office of Air Quality (OAQ) had a notice published in the South Bend Tribune, South Bend, Indiana, stating that Prairie View Recycling and Disposal Facility had applied for a Part 70 Operating Permit Renewal to operate a stationary municipal solid waste landfill. The notice also stated that OAQ proposed to issue a permit for this operation and provided information on how the public could review the proposed permit and other documentation. Finally, the notice informed interested parties that there was a period of thirty (30) days to provide comments on whether or not this permit should be issued as proposed.

On November 27, 2007, Qaiser Baig of Earth Tech submitted comments on behalf of Waste Management of Indiana, LLC (WMI), owner of Prairie View Recycling and Disposal Facility, on the proposed permit. The summary of the comments and corresponding responses is as follows (additions in **bold**, deletions in ~~strikeout~~):

### **Comment 1**

Condition D.2.1 (Particulate Matter (PM) [326 IAC 6.5-1]): OAQ has stated that while this rule applies to the tipper engine and the passive vent flares, it is not possible to impose additional compliance or monitoring requirements on these devices to comply with this rule. Accordingly, WMI would like the following sentence added to this condition:

No additional requirements are needed to demonstrate compliance with this condition.

### **Response 1**

As stated in the rule discussion of 326 IAC 6.5-1 (Particulate Matter Limitations Except Lake County) in the State Rule Applicability section of the Technical Support Document (TSD), the facilities that emit particulate matter that are subject to this rule are the eight (8) engine/generators, the open flare, the TIPPER1 engine, and the three (3) passive vent flares. The TSD also states that there are no other applicable requirements for these units pursuant to this rule. There are no additional compliance determination or compliance monitoring requirements included in the permit for these units pursuant to this rule, therefore, it is not necessary to add the statement to the permit that there are no additional requirements needed to demonstrate compliance with 326 IAC 6.5-1. No changes have been made as a result of this comment.

### **Comment 2**

TSD, Appendix A – General Comment – The previously agreed upon concentrations for specific organic constituents of landfill gas have not been used to calculate emissions of hazardous air pollutants (HAPs). WMI requests that HAP emissions for all emission units be re-calculated using the previously agreed upon concentrations.

## **Response 2**

The HAP concentrations used in the HAP emission calculations were concentrations obtained from the output from the landfill gas emissions model that WMI provided to IDEM in June 2007 with their triennial emission statement. However, based on the revised landfill gas flow rates that have been calculated using LANDGEM Version 3.02 assuming the annual waste acceptance until closure will equal double the 2006 actual waste acceptance and a closure year of 2021, the NMOC, VOC and HAP emissions calculations have been revised. Also, the HAP concentrations were revised to reflect the concentrations previously agreed upon. See Appendix A of this TSD Addendum for the revised calculations.

## **Comment 3**

Appendix A (Pages 1 of 19 and 10 of 19): Calculations of controlled emissions of landfill HAP do not include the effects of the federally-required gas collection and control system (i.e., 75% collection efficiency). Moreover, these HAP calculations are based on landfill gas generation estimates for the year 2036 instead of 2034.

## **Response 3**

The HAP calculations were revised to be based on the landfill gas generation estimate for the closure year of 2021 as discussed in Response 2 above. Also, a collection efficiency of 75% for the flare controlling landfill gas VOC and HAP emissions was incorporated into the fugitive landfill gas emission calculations. See Appendix A of this TSD Addendum for the revised calculations.

## **Comment 4**

Appendix A (Page 3 of 19): The calculation of PM10 emissions for the flare uses a value of  $10^{-7}$  as a multiplier, instead of  $10^{-6}$ . Also, the hourly heat input is used in the calculation as a multiplier, instead of the PM10 emission factor.

## **Response 4**

The PM10 emission calculations have been corrected so that the correct multipliers are used in the equation used to calculate these emissions. The potential PM10 emissions from the flare are now 4.82 tons per year. See Appendix A of this TSD Addendum for the revised calculations.

The OAQ prefers that the Technical Support Document reflect the permit that was on public notice. Changes to the permit or technical support material that occur after the public notice are documented in this Addendum to the Technical Support Document. This accomplishes the desired result of ensuring that these types of concerns are documented and part of the record regarding this permit decision. As a result of the corrections to the emission calculations noted above, the Potential to Emit After Issuance section of the TSD is revised in this addendum as follows:

## **Potential to Emit After Issuance**

The table below summarizes the potential to emit, reflecting all limits, of the emission units. Any control equipment is considered federally enforceable only after issuance of this Part 70 permit renewal, and only to the extent that the effect of the control equipment is made practically enforceable in the permit.

Process/Emission Unit	Potential to Emit (tons/year)							
	PM	PM10	SO <sub>2</sub>	VOC	CO	NO <sub>x</sub>	Single HAP	Total HAPs
Engines EG1, EG2, EG3, and EG4 – 1994	8.33	8.33	1.70	0.14	113.72	59.74	0.32 (HCl)	<del>1.27</del> <b>0.955</b>
Engines EG5, EG6, EG7, and EG8 – 2007	8.33	8.33	1.70	0.14	113.72	59.74	0.32 (HCl)	<del>1.27</del> <b>0.955</b>
Landfill – 1981	0.00	0.00	0.00	<del>46.21</del> <b>63.77</b>	0.00	0.00	<del>7.84</del> <b>1.78</b> (Toluene)	<del>21.75</del> <b>4.89</b>
Open Flare – 2004	<del>4.99</del> <b>4.82</b>	<del>4.99</del> <b>4.82</b>	3.06	0.24	113.91	20.94	0.56 (HCl)	<del>0.68</del> <b>0.61</b>
TIPPER1 Engine - 2005	1.09	1.09	1.02	1.27	3.35	7.66	Negl.	Negl.
Three (3) Passive Vent Flares - 2005	0.34	0.34	0.34	0.03	14.78	0.79	0.00	0.00
Fugitive Unpaved Roads	67.41	18.20	0.00	0.00	0.00	0.00	0.00	0.00
Fugitive Paved Roads	11.65	2.27	0.00	0.00	0.00	0.00	0.00	0.00
Total Non-fugitive emissions	<del>20.08</del> <b>22.91</b>	<del>20.08</del> <b>22.91</b>	<b>7.82</b>	<del>48.03</del> <b>65.59</b>	<b>359.48</b>	<b>148.87</b>	<del>7.84</del> <b>1.78</b> (Toluene)	<del>24.96</del> <b>7.41</b>
PSD Major Source Threshold	<b>250</b>	<b>250</b>	<b>250</b>	<b>250</b>	<b>250</b>	<b>250</b>	<b>N/A</b>	<b>N/A</b>
Total Emissions	<del>99.14</del> <b>101.97</b>	<del>40.55</del> <b>43.38</b>	<b>7.82</b>	<del>48.03</del> <b>65.59</b>	<b>359.48</b>	<b>148.87</b>	<del>7.84</del> <b>1.78</b> (Toluene)	<del>24.96</del> <b>7.41</b>

Upon further review IDEM, OAQ has made the following changes to the Part 70 permit (additions in bold, deletions in ~~strikeout~~):

- Condition D.1.2 has been revised to distribute the NO<sub>x</sub> limit evenly between the four (4) landfill gas engine/generator sets so that compliance with the limits can be more easily determined for each engine.

**D.1.2 NO<sub>x</sub> Emissions [326 IAC 2-3]**

- Total Emissions of NO<sub>x</sub> from **each of** the four (4) landfill gas engine/generator sets (EG1, EG2, EG3, and EG4) ~~combined~~ shall not exceed ~~46.40~~ **4.025** pounds per hour.

Compliance with this limit combined with the unrestricted potential to emit of NO<sub>x</sub> from the open flare, the TIPPER1 engine, and the three (3) passive vent flares will ensure that NO<sub>x</sub> emissions from the engine/generator sets EG1, EG2, EG3, and EG4, the open flare, the TIPPER1 engine, and the three (3) passive vent flares do not exceed 100 tons per year so that the requirements of 326 IAC 2-3 (Emission Offset) do not apply.

- In order to ensure compliance with the limit in (a) above, the Permittee shall install automatic air/fuel controllers on each of the engine/generator sets identified as EG1, EG2, and EG4, prior to start-up of any of the engine/generator sets identified as EG5, EG6, EG7, and EG8.

- The signature block on the first page of the Part 70 Operating permit has been updated to include the Deputy Permits Branch Chief as the person signing the final permit as follows:

Operation Permit No.: T141-18138-00051	
Issued by:  <del>Nisha Sizemore, Chief</del> <b>Matthew Stuckey, Deputy Branch Chief</b> Permits Branch Office of Air Quality	Issuance Date:  Expiration Date:

Entire Source Emissions

Company Name: Prairie View Recycling and Disposal Facility  
 Address City IN Zip: 15505 Shively Road, Wyatt, IN 46595  
 Part 70 Permit No.: 141-18138-00051  
 Reviewer: TE/EVP

Potential Uncontrolled Emissions																			
Emission Unit	NO <sub>x</sub>		CO		SO <sub>2</sub>		PM <sub>10</sub>		TSP		NMOC		VOC		HAP (Total)		HAP (Single)		
	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	
Engines	27.28	119.47	51.93	227.44	0.77	3.39	3.80	16.65	3.80	16.65	0.15	0.68	0.06	0.27	0.44	1.91	0.14	0.63	HCl
Landfill Fugitive	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	37.33	163.51	14.56	63.77	1.12	4.89	0.41	1.78	Toluene
Open Flare	4.78	20.94	26.01	113.91	0.70	3.06	1.10	4.82	1.10	4.82	0.14	0.61	0.05	0.24	0.14	0.61	0.13	0.56	HCl
TIPPER1 Engine	1.75	7.66	0.76	3.35	0.23	1.02	0.25	1.09	0.25	1.09	0.00	0.00	0.29	1.27	Negl.	Negl.	Negl.	Negl.	
Three (3) Passive Vent Flares	0.18	0.79	3.38	14.78	0.08	0.34	0.08	0.34	0.08	0.34	0.02	0.08	0.01	0.03	0.00	0.00	0.00	0.00	
Fugitive Unpaved Roads	0.00	0.00	0.00	0.00	0.00	0.00	20.77	90.98	76.95	337.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Fugitive Paved Roads	0.00	0.00	0.00	0.00	0.00	0.00	2.59	11.36	13.30	58.25	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Total	33.99	148.86	82.07	359.48	1.79	7.82	28.59	125.24	95.47	418.17	37.64	164.88	14.97	65.57	1.69	7.41	0.41	1.78	Toluene

Potential Controlled Emissions																			
Emission Unit	NO <sub>x</sub>		CO		SO <sub>2</sub>		PM <sub>10</sub>		TSP		NMOC		VOC		HAP (Total)		HAP (Single)		
	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	
Engines	27.28	119.47	51.93	227.44	0.77	3.39	3.80	16.65	3.80	16.65	0.15	0.68	0.06	0.27	0.44	1.91	0.14	0.63	HCl
Landfill Fugitive	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	9.89	43.33	3.86	16.90	1.12	4.89	0.41	1.78	Toluene
Open Flare	4.78	20.94	26.01	113.91	0.70	3.06	1.10	4.82	1.10	4.82	0.14	0.61	0.05	0.24	0.14	0.61	0.13	0.56	HCl
TIPPER1 Engine	1.75	7.66	0.76	3.35	0.23	1.02	0.25	1.09	0.25	1.09	0.00	0.00	0.29	1.27	Negl.	Negl.	Negl.	Negl.	
Three (3) Passive Vent Flares	0.18	0.79	3.38	14.78	0.08	0.34	0.08	0.34	0.08	0.34	0.02	0.08	0.01	0.03	0.00	0.00	0.00	0.00	
Fugitive Unpaved Roads	0.00	0.00	0.00	0.00	0.00	0.00	4.15	18.20	15.39	67.41	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Fugitive Paved Roads	0.00	0.00	0.00	0.00	0.00	0.00	0.52	2.27	2.66	11.65	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Total	33.99	148.86	82.07	359.48	1.78	7.82	9.90	43.36	23.28	101.95	10.21	44.70	4.27	18.70	1.69	7.41	0.41	1.78	Toluene

**Appendix A: Emission Calculations*****Equipment Data***

**Company Name:** Prairie View Recycling and Disposal Facility  
**Address City IN Zip:** 15505 Shively Road, Wyatt, IN 46595  
**Part 70 Permit No.:** 141-18138-00051  
**Reviewer:** TE/EVP

***Standard Conditions, Constants, and Typical Values***

<b>Category</b>	<b>Value</b>	<b>Equivalent</b>
Standard Temperature <sup>a</sup>	60 °F	520 °R
Universal Gas Constant	0.7302 atm-ft <sup>3</sup> /lb-mol°R	
Pressure <sup>a</sup>	1 atm	
Methane Heating Value <sup>b</sup>	1,000 Btu/ft <sup>3</sup>	
LFG Methane Component <sup>c</sup>	55%	
LFG Typical Heating Value	550 Btu/ft <sup>3</sup>	
LFG Temperature <sup>c</sup>	100 °F	560 °R
LFG Moisture <sup>c</sup>	8%	

<sup>a</sup>Industrial STP (60°F, 30.00 in. Hg, 1 atm)

<sup>b</sup>Typical

<sup>c</sup>Assumed

<sup>d</sup>Source: *Professional Engineering Registration Program*, pg. 23-9

**Table. Fuel & Equipment - Ground Flare**

<b>Ground Flare Information</b>	<b>Value</b>	<b>Equivalent</b>
LFG inlet flow, standard <sup>a</sup>	2,130 scfm	
LFG Inlet Flow, dry standard	1,960 dscfm	
Heat Input	70.3 MMBtu/hr	
Design Flare Operating Temperature	1,400 °F	1,860 °R
Flare Tip Flow, standard	2,130 scfm	
Flare Tip Flow, actual	7,619 acfm	
Flare Tip Diameter <sup>a</sup>	1.0 ft	
Flare Tip Exhaust Velocity	9,706 ft/min	161.8 ft/s
Flare Tip Height, above local grade <sup>b</sup>	30 ft	

<sup>a</sup>Source: Flare manufacturer

## Appendix A: Emission Calculations

**Criteria Pollutants Emissions from Flare**

**Company Name:** Prairie View Recycling and Disposal Facility  
**Address City IN Zip:** 15505 Shively Road, Wyatt, IN 46595  
**Part 70 Permit No.:** 141-18138-00051  
**Reviewer:** TE/EVP

**Criteria Pollutant Emissions - One (1) Open Flare**

Annual Operating Hours	8,760 Hours
LFG inlet flow, standard	2,130 scfm
Heat Input	70.3 MMBtu/hr

**SO<sub>2</sub> Emission Rate**

SO <sub>2</sub> concentration in exhaust gas	32.40 ppmv	
SO <sub>2</sub> emission rate	0.70 lb/hr	3.06 ton/yr
SO <sub>2</sub> molecular weight	64.07	

**PM<sub>10</sub> Emission Rate**

PM emission factor <sup>d</sup>	17 lb/MM dscf CH <sub>4</sub>	
PM emission rate	1.10 lb/hr	4.82 ton/yr

**NO<sub>2</sub> Emission Rate**

NO <sub>2</sub> emission factor <sup>e</sup>	0.068 lb/MMBtu	
NO <sub>2</sub> emission rate	4.78 lb/hr	20.94 ton/yr

**CO Emission Rate**

CO emission factor <sup>e</sup>	0.37 lb/MMBtu	
CO emission rate	26.01 lb/hr	113.91 ton/yr

**NMOC Emission Rate**

NMOC conc inlet gas <sup>f</sup>	600 ppmv	
MW hexane	86.18 lb/lb-mol	
destruction efficiency	99.20%	
mass NMOC inlet gas	17.4 lb/hr	76.23 ton/yr
NMOC emission rate	0.14 lb/hr	0.61 ton/yr
		<b>(Uncontrolled)</b>
		<b>(Controlled)</b>

**VOC Emission Rate**

NMOC conc inlet gas <sup>f</sup>	600 ppmv	
VOC fraction of NMOC <sup>f</sup>	39%	
VOC concentration in inlet gas	234 ppmv	
MW hexane	86.18 lb/lb-mol	
mass VOC inlet gas	6.8 lb/hr	
destruction efficiency	99.20%	
VOC Emission Rate	7	29.73 ton/yr
VOC emission rate	0.05 lb/hr	0.24 ton/yr
		<b>(Uncontrolled)</b>
		<b>(Controlled)</b>

Note: References to AP-42 are taken from, US Environmental Protection Agency, *Compilation of Air Pollutant Emission Factors, Volume I. Stationary Point and Area Sources, 5th Ed.* (unless otherwise noted)

<sup>a</sup>Source: US EPA. AP-42, Tables 2.4-1 and 2.4-3, November 1998.

<sup>b</sup>Source: US EPA. AP-42, Table 2.4-3, November 1998.

<sup>c</sup>AP-42 gives ranges for control efficiencies. Control efficiencies for halogenated species range from 91 to 99.7 percent. The upper end of the range is used here resulting in maximum calculated emissions of SO<sub>2</sub>.

<sup>d</sup>Source: US EPA. AP-42, Table 2.4-5, November 1998.

<sup>e</sup>Source: Typical value provided by LFG Specialties Inc.

<sup>f</sup>Source: The LANDGEM default NMOC concentration.

**326 IAC 6.5-1-2 Compliance Calculation**

The following calculations determine compliance with 326 IAC 6.5-1-2 which limits stack emissions from the open flare to 0.03 gr/dscf:

$$\frac{4.82 \text{ ton/yr}^*}{525,600 \text{ min/yr}^*} \times \frac{2000 \text{ lb/ton}^*}{1,960 \text{ dscf/min}} \times \frac{7000 \text{ gr/lb}}{1} = 0.065 \text{ gr/dscf} \quad (\text{Will be able to comply})$$

Allowable particulate emissions under 326 IAC 6.5-1-2 equate to 2.21 tons per year. 0.50 lbs/hr

**Appendix A: Emission Calculations****Sample Calculations for Flare**

**Company Name:** Prairie View Recycling and Disposal Facility  
**Address City IN Zip:** 15505 Shively Road, Wyatt, IN 46595  
**Part 70 Permit No.:** 141-18138-00051  
**Reviewer:** TE/EVP

**Sample Calculations****Standard Conditions and Constants**

$$^{\circ}\text{R} = ^{\circ}\text{F} + 460$$

standard temperature = 60  $^{\circ}\text{F}$

standard pressure = 1 atm

Universal gas constant (R) = 0.7302 atm-ft<sup>3</sup>/lb-mol $^{\circ}\text{R}$

**Flow**

dscfm = scfm\*(1-%moisture)

acfm = scfm\*(actual temp[ $^{\circ}\text{R}$ ])/(standard temp[ $^{\circ}\text{R}$ ])\*{(standard press[atm])/(actual press [atm])}

**CO and NO<sub>x</sub> Emissions**

(lb/MMbtu)\*(MMbtu/hr) = lb/hr

**SO<sub>2</sub> Emissions**

typically, 86% to 99.7% of sulfur compounds convert to SO<sub>2</sub> during combustion

{(scfm)\*(60 min/hr)\*(total sulfur concentration [ppmv]\*(1.0E-06))\*(1-control efficiency)\*(MW SO<sub>2</sub>)/((R)\*(T))} = lb/hr

**PM<sub>10</sub> Emissions**

(dscfm)\*(CH<sub>4</sub> component)\*(1E-6 MMscf/scf)\*(lb PM/MMscf CH<sub>4</sub>)\*(60 min/hr) = lb/hr

**VOC Emissions**

{(scfm\*60 min/hr\*concentration<sub>compound</sub>[ppmv]\*1.0E-06\*MW<sub>compound</sub>)/((R)\*(T))\*(1-control efficiency) = lb/hr

OR

VOCs are 39 percent of NMOC, as prescribed in AP-42

VOC concentration[ppmv] = NMOC concentration[as hexane]\*39%

flare and/or engines typically combust 99.2% of VOCs

{(scfm\*60 min/hr\*concentration<sub>hexane</sub>[ppmv]\*1.0E-06\*MW<sub>hexane</sub>)/((R)\*(T))\*(0.39) = lb/hr

**LFG Compound Emissions**

{(scfm\*60 min/hr\*concentration<sub>compound</sub>[ppmv]\*1.0E-06\*MW<sub>compound</sub>)/((R)\*(T))\*(1-control efficiency)

**HCl Emissions**

typically, 86% to 99.7% of chlorine compounds convert to HCl during combustion

(concentration<sub>compound</sub> [ppm])\*(control efficiency)\*(no. of chlorine atoms) = HCl concentration [ppm] in outlet gas from each compound

{HCl concentration<sub>each compound</sub> [ppm]\*1.0E-06\*scfm\*MW<sub>HCl</sub>)/((R)\*(T))\*(60 min/hr) = lb/hr

OR

{(scfm)\*(60 min/hr)\*(HCl outlet concentration per AP-42 [ppmv]\*1.0E-06)\*(1-control efficiency)\*(MW)/((R)\*(T))} = lb/hr

Appendix A: Emission Calculations

**Prairie View RDF Utility Flare Hazardous Air Pollutants**

Company Name: Prairie View Recycling and Disposal Facility  
 Address City IN Zip: 15505 Shively Road, Wyatt, IN 46595  
 Part 70 Permit No.: 141-18138-00051  
 Reviewer: TE/EVP

Note: Information on control efficiencies (and highlighted pollutant concentrations) were taken from Section 2.4 of AP-42  
 Note: Information on pollutant concentrations (not highlighted) were taken from the Waste Industry Air Coalition

Maximum Gas Flow Rate: 2,130 scfm  
 127800 scfh  
 Maximum Operating Hours 8760 hours

	Molecular Weight	Conc., ppmv	CAS No.
1,1,1-Trichloroethane	133.41	0.168	71556
1,1,2,2-Tetrachloroethane	167.85	0.07	79345
1,1-Dichloroethane	98.97	0.741	75343
1,1-Dichloroethene	96.94	0.092	75354
1,2-Dichloroethane	98.96	0.12	107062
1,2-Dichloropropane	112.99	0.023	78875
Acrylonitrile	53.06	0.036	107131
Benzene	78.11	0.972	71432
Carbon disulfide	76.13	0.32	75150
Carbon tetrachloride	153.84	0.007	56235
Carbonyl sulfide	60.07	0.183	463581
Chlorobenzene	112.56	0.227	108907
Chloroethane	64.52	0.239	75003
Dichlorobenzene	147	1.697	106467
Chloroform	119.39	0.021	67663
Dichloromethane	84.94	3.395	75092
Ethylbenzene	106.16	6.789	100414
Hexane	86.18	2.324	110543
Mercury	200.61	0.00029	7439976
Methyl isobutyl ketone	100.16	0.75	108101
Perchloroethylene	165.83	1.193	127184
Toluene	92.13	24.405	108883
Trichloroethylene	131.4	0.681	79016
Vinyl chloride	62.5	1.077	75014
Xylenes	106.16	16.582	1330207
HCl	36.5	10.5	7647010

Control Efficiency 98.00% For Halogenated Species  
 Control Efficiency 99.70% For Non Halogenated Species

**Calculate Actual Emissions for Hazardous Air Pollutants**

1,1,1-Trichloroethane										
0.168	ppm HAP x	133.41	mol. Wt. *	127,800 scfh x	8760	hrs x	1 T x	(1 - .98) =	actual	=
1,000,000		385.4	scf/lb-mole			year	2000 lbs		0.0007 tons/year	0.0001 lbs/hour
1,1,2,2-Tetrachloroethane										
0.07	ppm HAP x	167.85	mol. Wt. *	127,800 scfh x	8760	hrs x	1 T x	(1 - .98) =	actual	=
1,000,000		385.4	scf/lb-mole			year	2000 lbs		0.0003 tons/year	0.0001 lbs/hour
1,1-Dichloroethane										
0.741	ppm HAP x	98.97	mol. Wt. *	127,800 scfh x	8760	hrs x	1 T x	(1 - .98) =	actual	=
1,000,000		385.4	scf/lb-mole			year	2000 lbs		0.0021 tons/year	0.0005 lbs/hour
1,1-Dichloroethene										
0.092	ppm HAP x	96.94	mol. Wt. *	127,800 scfh x	8760	hrs x	1 T x	(1 - .98) =	actual	=
1,000,000		385.4	scf/lb-mole			year	2000 lbs		0.0003 tons/year	0.0001 lbs/hour
1,2-Dichloroethane										
0.12	ppm HAP x	98.96	mol. Wt. *	127,800 scfh x	8760	hrs x	1 T x	(1 - .98) =	actual	=
1,000,000		385.4	scf/lb-mole			year	2000 lbs		0.0003 tons/year	0.0001 lbs/hour
1,2-Dichloropropane										
0.023	ppm HAP x	112.99	mol. Wt. *	127,800 scfh x	8760	hrs x	1 T x	(1 - .98) =	actual	=
1,000,000		385.4	scf/lb-mole			year	2000 lbs		0.0001 tons/year	0.0000 lbs/hour

Acrylonitrile											
0.036	ppm HAP x	53.06	mol. Wt. *	127,800 scfh x	8760	hrs x	1 T x	(1 - .997) =	actual	=	
1,000,000		385.4	scf/lb-mole			year	2000 lbs		0.0000 tons/year		0.0000 lbs/hour

Benzene											
0.972	ppm HAP x	78.11	mol. Wt. *	127,800 scfh x	8760	hrs x	1 T x	(1 - .997) =	actual	=	
1,000,000		385.4	scf/lb-mole			year	2000 lbs		0.0003 tons/year		0.0001 lbs/hour

Carbondsulfide											
0.32	ppm HAP x	76.13	mol. Wt. *	127,800 scfh x	8760	hrs x	1 T x	(1 - .997) =	actual	=	
1,000,000		385.4	scf/lb-mole			year	2000 lbs		0.0001 tons/year		0.0000 lbs/hour

Carbontetrachloride											
0.007	ppm HAP x	153.84	mol. Wt. *	127,800 scfh x	8760	hrs x	1 T x	(1 - .98) =	actual	=	
1,000,000		385.4	scf/lb-mole			year	2000 lbs		0.0000 tons/year		0.0000 lbs/hour

Carbonylsulfide											
0.183	ppm HAP x	60.07	mol. Wt. *	127,800 scfh x	8760	hrs x	1 T x	(1 - .997) =	actual	=	
1,000,000		385.4	scf/lb-mole			year	2000 lbs		0.0000 tons/year		0.0000 lbs/hour

Chlorobenzene											
0.227	ppm HAP x	112.56	mol. Wt. *	127,800 scfh x	8760	hrs x	1 T x	(1 - .98) =	actual	=	
1,000,000		385.4	scf/lb-mole			year	2000 lbs		0.0007 tons/year		0.0002 lbs/hour

Chloroethane											
0.239	ppm HAP x	64.52	mol. Wt. *	127,800 scfh x	8760	hrs x	1 T x	(1 - .98) =	actual	=	
1,000,000		385.4	scf/lb-mole			year	2000 lbs		0.0004 tons/year		0.0001 lbs/hour

Dichlorobenzene											
1.697	ppm HAP x	147	mol. Wt. *	127,800 scfh x	8760	hrs x	1 T x	(1 - .98) =	actual	=	
1,000,000		385.4	scf/lb-mole			year	2000 lbs		0.0072 tons/year		0.0017 lbs/hour

Chloroform											
0.021	ppm HAP x	119.39	mol. Wt. *	127,800 scfh x	8760	hrs x	1 T x	(1 - .98) =	actual	=	
1,000,000		385.4	scf/lb-mole			year	2000 lbs		0.0001 tons/year		0.0000 lbs/hour

Dichloromethane											
3.395	ppm HAP x	84.94	mol. Wt. *	127,800 scfh x	8760	hrs x	1 T x	(1 - .98) =	actual	=	
1,000,000		385.4	scf/lb-mole			year	2000 lbs		0.0084 tons/year		0.0019 lbs/hour

Ethylbenzene											
6.789	ppm HAP x	106.16	mol. Wt. *	127,800 scfh x	8760	hrs x	1 T x	(1 - .997) =	actual	=	
1,000,000		385.4	scf/lb-mole			year	2000 lbs		0.0031 tons/year		0.0007 lbs/hour

Hexane											
2.324	ppm HAP x	86.18	mol. Wt. *	127,800 scfh x	8760	hrs x	1 T x	(1 - .997) =	actual	=	
1,000,000		385.4	scf/lb-mole			year	2000 lbs		0.0009 tons/year		0.0002 lbs/hour

Mercury											
0.000292	ppm HAP x	200.61	mol. Wt. *	127,800 scfh x	8760	hrs x	1 T x	(1 - .997) =	actual	=	
1,000,000		385.4	scf/lb-mole			year	2000 lbs		0.0000 tons/year		0.0000 lbs/hour

Methyl isobutyl ketone											
0.75	ppm HAP x	100.16	mol. Wt. *	127,800 scfh x	8760	hrs x	1 T x	(1 - .997) =	actual	=	
1,000,000		385.4	scf/lb-mole			year	2000 lbs		0.0003 tons/year		0.0001 lbs/hour

Perchloroethylene											
1.193	ppm HAP x	165.83	mol. Wt. *	127,800 scfh x	8760	hrs x	1 T x	(1 - .98) =	actual	=	
1,000,000		385.4	scf/lb-mole			year	2000 lbs		0.0057 tons/year		0.0013 lbs/hour

Toluene											
24.405	ppm HAP x	92.13	mol. Wt. *	127,800 scfh x	8760	hrs x	1 T x	(1 - .997) =	actual	=	
1,000,000		385.4	scf/lb-mole			year	2000 lbs		0.0098 tons/year		0.0022 lbs/hour

Trichloroethylene											
0.681	ppm HAP x	131.4	mol. Wt. *	127,800 scfh x	8760	hrs x	1 T x	(1 - .98) =	actual	=	
1,000,000		385.4	scf/lb-mole			year	2000 lbs		0.0026 tons/year		0.0006 lbs/hour

VinylChloride											
1.077	ppm HAP x	62.5	mol. Wt. *	127,800 scfh x	8760	hrs x	1 T x	(1 - .98) =	actual	=	
1,000,000		385.4	scf/lb-mole			year	2000 lbs		0.0020 tons/year		0.0004 lbs/hour

Xylenes											
16.582	ppm HAP x	106.16	mol. Wt. *	127,800 scfh x	8760	hrs x	1 T x	(1 - .997) =	actual	=	
1,000,000		385.4	scf/lb-mole			year	2000 lbs		0.0077 tons/year		0.0018 lbs/hour

HCl (HCl is a product of combustion and therefore does not have a control efficiency)											
10.5	ppm HAP x	36.5	mol. Wt. *	127,800 scfh x	8760	hrs x	1 T x	(1 - 0) =	actual	=	
1,000,000		385.4	scf/lb-mole			year	2000 lbs		0.5566 tons/year		0.1271 lbs/hour

<b>TOTAL:</b>	<b>0.61 tons/year</b>	<b>0.14 lbs/hour</b>
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**Appendix A: Emission Calculations**

**Total emissions from Open Flare**

**Company Name:** Prairie View Recycling and Disposal Facility  
**Address City IN Zip:** 15505 Shively Road, Wyatt, IN 46595  
**Part 70 Permit No.:** 141-18138-00051  
**Reviewer:** TE/EVP

**Potential Emissions Summary - One (1) Open Flare identified as Flare No. 2**

Emission Unit ID No.	Description	Total Potential Emissions from Flare No. 2																		
		LFG Flow	NO <sub>x</sub>		CO		SO <sub>2</sub>		PM <sub>10</sub>		TSP		NMOC		VOC		HAP (Total)		HAP (Single)	
		(scfm)	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr
Flare No. 2	One (1) Open flare	2130.00	4.78	20.94	26.01	113.91	0.70	3.06	1.10	4.82	1.10	4.82	17.40	76.23	6.79	29.73	3.74	16.39	0.75	3.27

Emission Unit ID No.	Description	Total Potential Emissions from Flare No. 2 (Controlled)																		
		LFG Flow	NO <sub>x</sub>		CO		SO <sub>2</sub>		PM <sub>10</sub>		TSP		NMOC		VOC		HAP (Total)		HAP (Single)	
		(scfm)	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr
Flare No.2	One (1) Open flare	2130.00	4.78	20.94	26.01	113.91	0.70	3.06	1.10	4.82	1.10	4.82	0.14	0.61	0.05	0.24	0.14	0.61	0.13	0.56

Appendix A: Emission Calculations

**NMOC Calculations**

**Company Name:** Prairie View Recycling and Disposal Facility  
**Address City IN Zip:** 15505 Shively Road, Wyatt, IN 46595  
**Part 70 Permit No.:** 141-18138-00051  
**Reviewer:** TE/EVP

=====  
 Model Parameters  
 =====

Lo : 100.00 m<sup>3</sup> / Mg  
 k : 0.0400 1/yr  
 NMOC : 600.00 ppmv  
 Methane : 50.0000 % volume  
 Carbon Dioxide : 50.0000 % volume  
 =====

=====  
 Landfill Parameters  
 =====

Landfill type : No Co-Disposal  
 Year Opened : 1981 Closure Year: 2021  
 Capacity : 15300000 Mg  
 =====

=====  
 Model Results  
 =====

Year	Refuse In Place (Mg)	NMOC Emission Rate	
		(Mg/yr)	(Cubic m/yr)
1982	1.47E+05	2.48E+00	6.91E+02
1983	3.03E+05	5.03E+00	1.40E+03
1984	4.93E+05	8.03E+00	2.24E+03
1985	6.66E+05	1.06E+01	2.97E+03
1986	8.57E+05	1.35E+01	3.76E+03
1987	1.10E+06	1.71E+01	4.78E+03
1988	1.36E+06	2.08E+01	5.80E+03
1989	1.67E+06	2.52E+01	7.02E+03
1990	2.09E+06	3.13E+01	8.73E+03
1991	2.56E+06	3.80E+01	1.06E+04
1992	2.98E+06	4.36E+01	1.22E+04
1993	3.46E+06	5.00E+01	1.39E+04
1994	3.85E+06	5.47E+01	1.53E+04
1995	4.23E+06	5.89E+01	1.64E+04
1996	4.67E+06	6.41E+01	1.79E+04
1997	5.00E+06	6.71E+01	1.87E+04
1998	5.28E+06	6.92E+01	1.93E+04
1999	5.53E+06	7.08E+01	1.98E+04
2000	5.78E+06	7.23E+01	2.02E+04
2001	6.07E+06	7.42E+01	2.07E+04
2002	6.29E+06	7.50E+01	2.09E+04
2003	6.47E+06	7.52E+01	2.10E+04
2004	6.69E+06	7.59E+01	2.12E+04
2005	6.96E+06	7.75E+01	2.16E+04
2006	7.27E+06	7.98E+01	2.23E+04
2007	7.55E+06	8.14E+01	2.27E+04
2008	8.11E+06	8.77E+01	2.45E+04
2009	8.68E+06	9.37E+01	2.61E+04
2010	9.24E+06	9.95E+01	2.78E+04
2011	9.80E+06	1.05E+02	2.93E+04
2012	1.04E+07	1.10E+02	3.08E+04
2013	1.09E+07	1.16E+02	3.23E+04
2014	1.15E+07	1.21E+02	3.36E+04
2015	1.20E+07	1.25E+02	3.50E+04
2016	1.26E+07	1.30E+02	3.62E+04
2017	1.32E+07	1.34E+02	3.75E+04
2018	1.37E+07	1.39E+02	3.86E+04
2019	1.43E+07	1.43E+02	3.98E+04
2020	1.48E+07	1.46E+02	4.09E+04
2021	1.53E+07	1.48E+02	4.14E+04

Potential NMOC Emissions	148.33 Mg/yr	uncontrolled
Potential NMOC Emissions	163.51 Tons/yr	uncontrolled
Potential VOC Emissions	63.77 Tons/yr	39% of NMOC is VOC
Potential NMOC Emissions After Control	43.33 Tons/yr	75% collection & 98% destruction efficiencies (permit requirements)
Potential VOC Emissions After Control	16.90 Tons/yr	39% of NMOC is VOC

Note 1: The above calculation reflects the potential to emit, based on AP-42, Section 2.4 and the LANDGEM default NMOC concentration of 600 ppmv (as hexane) for non co-disposal landfills (i.e., Prairie View). The 39% NMOC as VOC is recommended in AP-42 for non co-disposal in Table 2.4-2.

**Appendix A: Emission Calculations**

***Methane Calculations***

**Company Name:** Prairie View Recycling and Disposal Facility  
**Address City IN Zip:** 15505 Shively Road, Wyatt, IN 46595  
**Part 70 Permit No.:** 141-18138-00051  
**Reviewer:** TE/EVP

=====  
 Model Parameters  
 =====

Lo : 100.00 m<sup>3</sup> / Mg  
 k : 0.0400 1/yr  
 NMOC : 600.00 ppmv  
 Methane : 50.0000 % volume  
 Carbon Dioxide : 50.0000 % volume

=====  
 Landfill Parameters  
 =====

Landfill type : No Co-Disposal  
 Year Opened : 1981 Closure Year: 2034  
 Capacity : 15300000 Mg  
 Average Acceptance Rate Required from  
 Current Year to Closure Year : 628869.95 Mg/year

=====  
 Model Results  
 =====

Year	Methane Emission Rate			Calculated LFG Emission Rate (scfm)
	Refuse In Place (Mg)	(Mg/yr)	(Cubic m/yr)	
1982	1.47E+05	3.84E+02	5.76E+05	77
1983	3.03E+05	7.80E+02	1.17E+06	157
1984	4.93E+05	1.25E+03	1.87E+06	251
1985	6.66E+05	1.65E+03	2.47E+06	333
1986	8.57E+05	2.09E+03	3.13E+06	421
1987	1.10E+06	2.66E+03	3.98E+06	535
1988	1.36E+06	3.22E+03	4.83E+06	649
1989	1.67E+06	3.90E+03	5.85E+06	786
1990	2.09E+06	4.85E+03	7.27E+06	977
1991	2.56E+06	5.90E+03	8.84E+06	1,188
1992	2.98E+06	6.76E+03	1.01E+07	1,361
1993	3.46E+06	7.75E+03	1.16E+07	1,562
1994	3.85E+06	8.49E+03	1.27E+07	1,709
1995	4.23E+06	9.13E+03	1.37E+07	1,839
1996	4.67E+06	9.94E+03	1.49E+07	2,002
1997	5.00E+06	1.04E+04	1.56E+07	2,097
1998	5.28E+06	1.07E+04	1.61E+07	2,161
1999	5.53E+06	1.10E+04	1.65E+07	2,211
2000	5.78E+06	1.12E+04	1.68E+07	2,258
2001	6.07E+06	1.15E+04	1.72E+07	2,316
2002	6.29E+06	1.16E+04	1.74E+07	2,342
2003	6.47E+06	1.17E+04	1.75E+07	2,348
2004	6.69E+06	1.18E+04	1.76E+07	2,371
2005	6.96E+06	1.20E+04	1.80E+07	2,421
2006	7.27E+06	1.24E+04	1.85E+07	2,491
2007	7.55E+06	1.26E+04	1.89E+07	2,542
2008	8.11E+06	1.36E+04	2.04E+07	2,739
2009	8.68E+06	1.45E+04	2.18E+07	2,928
2010	9.24E+06	1.54E+04	2.31E+07	3,109
2011	9.80E+06	1.63E+04	2.44E+07	3,283
2012	1.04E+07	1.71E+04	2.57E+07	3,451
2013	1.09E+07	1.79E+04	2.69E+07	3,612
2014	1.15E+07	1.87E+04	2.80E+07	3,767
2015	1.20E+07	1.94E+04	2.91E+07	3,915
2016	1.26E+07	2.01E+04	3.02E+07	4,058
2017	1.32E+07	2.08E+04	3.12E+07	4,195
2018	1.37E+07	2.15E+04	3.22E+07	4,327
2019	1.43E+07	2.21E+04	3.31E+07	4,453
2020	1.48E+07	2.27E+04	3.41E+07	4,575
2021	1.53E+07	2.30E+04	3.45E+07	4,634

scfm = m3/yr \* 35.31ft<sup>3</sup>/m<sup>3</sup> \* 2ft<sup>3</sup> LFG/ft<sup>3</sup> CH<sub>4</sub>  
 8760 hrs/yr \* 60 min/hr

**Landfill Fugitives Hazardous Air Pollutants**

Company Name: Prairie View Recycling and Disposal Facility  
 Address City IN Zip: 15505 Shively Road, Wyatt, IN 46595  
 Part 70 Permit No.: 141-18138-00051  
 Reviewer: TE/EVP

Note: Information on pollutant concentrations (highlighted) were taken from Section 2.4 of AP-42  
 Note: Information on pollutant concentrations (not highlighted) were taken from the Waste Industry Air Coalition

Landfill Gas Flow Rate: 4,634 scfm  
 Fugitive Landfill Gas Flow Rate: 1,158 scfm Assumes 75% collection efficiency of flare  
 69506 scfh  
 Maximum Operating Hours 8760 hours

	Molecular Weight	Conc., ppmv	CAS No.
1,1,1-Trichloroethane	133.41	0.168	71556
1,1,2,2-Tetrachloroethane	167.85	0.07	79345
1,1-Dichloroethane	98.97	0.741	75343
1,1-Dichloroethene	96.94	0.092	75354
1,2-Dichloroethane	98.96	0.12	107062
1,2-Dichloropropane	112.99	0.023	78875
Acrylonitrile	53.06	0.036	107131
Benzene	78.11	0.972	71432
Carbon disulfide	76.13	0.32	75150
Carbon tetrachloride	153.84	0.007	56235
Carbonyl sulfide	60.07	0.183	463581
Chlorobenzene	112.56	0.227	108907
Chloroethane	64.52	0.239	75003
Dichlorobenzene	147	1.697	106467
Chloroform	119.39	0.021	67663
Dichloromethane	84.94	3.395	75092
Ethylbenzene	106.16	6.789	100414
Hexane	86.18	2.324	110543
Mercury	200.61	0.00029	7439976
Methyl isobutyl ketone	100.16	0.75	108101
Perchloroethylene	165.83	1.193	127184
Toluene	92.13	24.405	108883
Trichloroethylene	131.4	0.681	79016
Vinyl chloride	62.5	1.077	75014
Xylenes	106.16	16.582	1330207

**Calculate Actual Emissions for Hazardous Air Pollutants**

1,1,1-Trichloroethane										
0.168	ppm HAP x	133.41	mol. Wt. *	69,506 scfh x	8760	hrs x	1 T x	actual	=	
1,000,000		385.4	scf/lb-mole			year	2000 lbs	0.0177 tons/year		0.0040 lbs/hour

1,1,2,2-Tetrachloroethane										
0.07	ppm HAP x	167.85	mol. Wt. *	69,506 scfh x	8760	hrs x	1 T x	actual	=	
1,000,000		385.4	scf/lb-mole			year	2000 lbs	0.0093 tons/year		0.0021 lbs/hour

1,1-Dichloroethane										
0.741	ppm HAP x	98.97	mol. Wt. *	69,506 scfh x	8760	hrs x	1 T x	actual	=	
1,000,000		385.4	scf/lb-mole			year	2000 lbs	0.0579 tons/year		0.0132 lbs/hour

1,1-Dichloroethene										
0.092	ppm HAP x	96.94	mol. Wt. *	69,506 scfh x	8760	hrs x	1 T x	actual	=	
1,000,000		385.4	scf/lb-mole			year	2000 lbs	0.0070 tons/year		0.0016 lbs/hour

1,2-Dichloroethane										
0.12	ppm HAP x	98.96	mol. Wt. *	69,506 scfh x	8760	hrs x	1 T x	actual	=	
1,000,000		385.4	scf/lb-mole			year	2000 lbs	0.0094 tons/year		0.0021 lbs/hour

1,2-Dichloropropane										
0.023	ppm HAP x	112.99	mol. Wt. *	69,506 scfh x	8760	hrs x	1 T x	actual	=	
1,000,000		385.4	scf/lb-mole			year	2000 lbs	0.0021 tons/year		0.0005 lbs/hour

<b>Acrylonitrile</b>										
0.036	ppm HAP x	53.06	mol. Wt. *	69,506 scfh x	8760	hrs. x	1 T x	actual	=	
1,000,000		385.4	scf/lb-mole			year	2000 lbs	0.0015 tons/year		0.0003 lbs/hour
<b>Benzene</b>										
0.972	ppm HAP x	78.11	mol. Wt. *	69,506 scfh x	8760	hrs. x	1 T x	actual	=	
1,000,000		385.4	scf/lb-mole			year	2000 lbs	0.0600 tons/year		0.0137 lbs/hour
<b>Carbonylsulfide</b>										
0.32	ppm HAP x	76.13	mol. Wt. *	69,506 scfh x	8760	hrs. x	1 T x	actual	=	
1,000,000		385.4	scf/lb-mole			year	2000 lbs	0.0192 tons/year		0.0044 lbs/hour
<b>Carbontetrachloride</b>										
0.007	ppm HAP x	153.84	mol. Wt. *	69,506 scfh x	8760	hrs. x	1 T x	actual	=	
1,000,000		385.4	scf/lb-mole			year	2000 lbs	0.0009 tons/year		0.0002 lbs/hour
<b>Carbonylsulfide</b>										
0.183	ppm HAP x	60.07	mol. Wt. *	69,506 scfh x	8760	hrs. x	1 T x	actual	=	
1,000,000		385.4	scf/lb-mole			year	2000 lbs	0.0087 tons/year		0.0020 lbs/hour
<b>Chlorobenzene</b>										
0.227	ppm HAP x	112.56	mol. Wt. *	69,506 scfh x	8760	hrs. x	1 T x	actual	=	
1,000,000		385.4	scf/lb-mole			year	2000 lbs	0.0202 tons/year		0.0046 lbs/hour
<b>Chloroethane</b>										
0.239	ppm HAP x	64.52	mol. Wt. *	69,506 scfh x	8760	hrs. x	1 T x	actual	=	
1,000,000		385.4	scf/lb-mole			year	2000 lbs	0.0122 tons/year		0.0028 lbs/hour
<b>Dichlorobenzene</b>										
1.697	ppm HAP x	147	mol. Wt. *	69,506 scfh x	8760	hrs. x	1 T x	actual	=	
1,000,000		385.4	scf/lb-mole			year	2000 lbs	0.1971 tons/year		0.0450 lbs/hour
<b>Chloroform</b>										
0.021	ppm HAP x	119.39	mol. Wt. *	69,506 scfh x	8760	hrs. x	1 T x	actual	=	
1,000,000		385.4	scf/lb-mole			year	2000 lbs	0.0020 tons/year		0.0005 lbs/hour
<b>Dichloromethane</b>										
3.395	ppm HAP x	84.94	mol. Wt. *	69,506 scfh x	8760	hrs. x	1 T x	actual	=	
1,000,000		385.4	scf/lb-mole			year	2000 lbs	0.2278 tons/year		0.0520 lbs/hour
<b>Ethylbenzene</b>										
6.789	ppm HAP x	106.16	mol. Wt. *	69,506 scfh x	8760	hrs. x	1 T x	actual	=	
1,000,000		385.4	scf/lb-mole			year	2000 lbs	0.5693 tons/year		0.1300 lbs/hour
<b>Hexane</b>										
2.324	ppm HAP x	86.18	mol. Wt. *	69,506 scfh x	8760	hrs. x	1 T x	actual	=	
1,000,000		385.4	scf/lb-mole			year	2000 lbs	0.1582 tons/year		0.0361 lbs/hour
<b>Mercury</b>										
0.000292	ppm HAP x	200.61	mol. Wt. *	69,506 scfh x	8760	hrs. x	1 T x	actual	=	
1,000,000		385.4	scf/lb-mole			year	2000 lbs	0.0000 tons/year		0.0000 lbs/hour
<b>Methyl isobutyl ketone</b>										
0.75	ppm HAP x	100.16	mol. Wt. *	69,506 scfh x	8760	hrs. x	1 T x	actual	=	
1,000,000		385.4	scf/lb-mole			year	2000 lbs	0.0593 tons/year		0.0135 lbs/hour
<b>Perchloroethylene</b>										
1.193	ppm HAP x	165.83	mol. Wt. *	69,506 scfh x	8760	hrs. x	1 T x	actual	=	
1,000,000		385.4	scf/lb-mole			year	2000 lbs	0.1563 tons/year		0.0357 lbs/hour
<b>Toluene</b>										
24.405	ppm HAP x	92.13	mol. Wt. *	69,506 scfh x	8760	hrs. x	1 T x	actual	=	
1,000,000		385.4	scf/lb-mole			year	2000 lbs	1.7761 tons/year		0.4055 lbs/hour
<b>Trichloroethylene</b>										
0.681	ppm HAP x	131.4	mol. Wt. *	69,506 scfh x	8760	hrs. x	1 T x	actual	=	
1,000,000		385.4	scf/lb-mole			year	2000 lbs	0.0707 tons/year		0.0161 lbs/hour
<b>VinylChloride</b>										
1.077	ppm HAP x	62.5	mol. Wt. *	69,506 scfh x	8760	hrs. x	1 T x	actual	=	
1,000,000		385.4	scf/lb-mole			year	2000 lbs	0.0532 tons/year		0.0121 lbs/hour
<b>Xylenes</b>										
16.582	ppm HAP x	106.16	mol. Wt. *	69,506 scfh x	8760	hrs. x	1 T x	actual	=	
1,000,000		385.4	scf/lb-mole			year	2000 lbs	1.3905 tons/year		0.3175 lbs/hour

<b>TOTAL:</b>	<b>4.89 tons/year</b>	<b>1.12 lbs/hour</b>
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**Utility Engine/Generator Sets Criteria Pollutants**

**Company Name:** Prairie View Recycling and Disposal Facility  
**Address City IN Zip:** 15505 Shively Road, Wyatt, IN 46595  
**Part 70 Permit No.:** 141-18138-00051  
**Reviewer:** TE/EVP

Pollutant Emission Factors (g/hp-hr)	NOx	CO
	1.35	2.57

Emission factors from stack test conducted on April 20, 2006 on existing Engine #3.

**Performance Data for the Caterpillar 3516 Engines:**

Rating: 1148 brake horsepower-hr per engine (at 100% full load)  
 Rating: 8.9 MMBtu/hr of heat input  
 LFG Heat Input: 550 BTU per scf of LFG  
 Flow: 300 scfm landfill gas per engine  
 18000 scfh landfill gas per engine

**Other data:**

NMOC: 600 ppmv as hexane from LANDGEM  
 % VOC 39.00% of total NMOC or 235 ppmv as hexane from AP-42 Section 2.4, Table 2.4-2  
 Sulfur 32.4 ppmv from information from the Waste Industry Air Coalition (WIAC)  
 PM10 48 lbs/MMdscf methane from AP-42 Section 2.4, Table 2.4-5  
 Control Eff. NMOC 99.20% from AP-42, Table 2.4-3  
 CH4 55.00% average landfill gas methane concentration

**NOx and CO Emissions calculations**

Total Potential Emissions from eight (8) engine/generator sets						
Description	Horsepower (hp)	MMBtu/hr	NO <sub>x</sub>		CO	
			lb/hr	ton/yr	lb/hr	ton/yr
One engine / generator sets	1148.00	8.90	3.41	14.93	6.49	26.43
Eight (8) engine / generator sets	9184.00	71.20	27.28	119.47	51.93	227.44

Each Engine All Eight (8) Engines

**SO<sub>2</sub>:**

32.4	ppm sulfur x	64	mol. Wt. SO <sub>2</sub> *	18,000 scfh x	8760	hrs x	1 ton x		0.10 lbs/hr	=	0.77 lbs/hr
1,000,000		385.4	scf/lb-mole			year	2000 lbs		0.42 tons/year		3.39 tons/year

**NMOC:**

600	ppm NMOC x	86.18	mol. Wt. Hex. *	18,000 scfh x	8760	hrs x	1 ton x	(1 - .992) =	0.02 lbs/hr	=	0.15 lbs/hr
1,000,000		385.4	scf/lb-mole			year	2000 lbs		0.08 tons/year		0.68 tons/year

**VOC:**

235	ppm VOC x	86.18	mol. Wt. Hex. *	18,000 scfh x	8760	hrs x	1 ton x	(1 - .992) =	0.01 lbs/hr	=	0.06 lbs/hr
1,000,000		385.4	scf/lb-mole			year	2000 lbs		0.03 tons/year		0.27 tons/year

**PM:**

48	lbs PM *	18,000	scf LFG x	55%	CH <sub>4</sub> *	1 MMdscf *	8760	hrs x	1 ton x	0.48 lbs/hr	=	3.80 lbs/hr
	MMdscf CH <sub>4</sub>		hr		LFG	1,000,000		year	2000 lbs	2.08 tons/year		16.65 tons/year

**PM<sub>10</sub>:**

48	lbs PM *	18,000	scf LFG x	55%	CH <sub>4</sub> *	1 MMdscf *	8760	hrs x	1 ton x	0.48 lbs/hr	=	3.80 lbs/hr
	MMdscf CH <sub>4</sub>		hr		LFG	1,000,000		year	2000 lbs	2.08 tons/year		16.65 tons/year

**326 IAC 6.5-1-2 Compliance Calculation**

The following calculations determine compliance with 326 IAC 6.5-1-2 which limits stack emissions from each engine/generator to 0.03 gr/dscf:

$$\frac{2.08 \text{ ton/yr} *}{525,600 \text{ min/yr} *} = \frac{2000 \text{ lb/ton} *}{2,514 \text{ dscf/min}} = \frac{7000 \text{ gr/lb}}{2,514 \text{ dscf/min}} = 0.022 \text{ gr/dscf} \quad (\text{Will be able to comply})$$

Allowable particulate emissions under 326 IAC 6.5-1-2 equate to 2.83 tons per year. 0.65 lbs/hr

Note:

$$\text{SCFM} = \frac{6,000 \text{ acfm} * (460 + 68)}{2,514 \text{ scfm}} / (460 + 800)$$

Assumes exhaust gas temperature of 800F and exhaust gas flow of 6,000 acfm.

**Utility Engine/Generator Sets Hazardous Air Pollutants**

**Company Name:** Prairie View Recycling and Disposal Facility  
**Address City IN Zip:** 15505 Shively Road, Wyatt, IN 46595  
**Part 70 Permit No.:** 141-18138-00051  
**Reviewer:** TE/EVP

*Note: Information on pollutant concentrations and control efficiencies were taken from Section 2.4 of AP-42*

Maximum Gas Flow Rate: 300 scfm per engine  
 2400 scfm (all eight engines)  
 144000 scfh (all eight engines)  
 Maximum heat input: 8.9 MMBtu/hr per engine  
 Maximum operating hours: 8760 hours  
 Gas Quality: 550 Btu/ft3 of LFG (heating value)

	Molecular Weight	Conc., ppmv	CAS No.
1,1,1-Trichloroethane	133.41	0.168	71556
1,1,2,2-Tetrachloroethane	167.85	0.07	79345
1,1-Dichloroethane	98.97	0.741	75343
1,1-Dichloroethene	96.94	0.092	75354
1,2-Dichloroethane	98.96	0.12	107062
1,2-Dichloropropane	112.99	0.023	78875
Acrylonitrile	53.06	0.036	107131
Benzene	78.11	0.972	71432
Carbon disulfide	76.13	0.32	75150
Carbon tetrachloride	153.84	0.007	56235
Carbonyl sulfide	60.07	0.183	463581
Chlorobenzene	112.56	0.227	108907
Chloroethane	64.52	0.239	75003
Dichlorobenzene	147	1.697	106467
Chloroform	119.39	0.021	67663
Dichloromethane	84.94	3.395	75092
Ethylbenzene	106.16	6.789	100414
Hexane	86.18	2.324	110543
Mercury	200.61	0.00029	7439976
Methyl isobutyl ketone	100.16	0.75	108101
Perchloroethylene	165.83	1.193	127184
Toluene	92.13	24.405	108883
Trichloroethylene	131.4	0.681	79016
Vinyl chloride	62.5	1.077	75014
Xylenes	106.16	16.582	1330207
HCl	36.5	10.5	7647010

Control Efficiency 93.00% For Halogenated Species (AP-42 Table 2.4-3)  
 Control Efficiency 86.10% For Non Halogenated Species (AP-42 Table 2.4-3)

Calculate maximum throughput in MMBtu/hr:  
 300 cfm x 550 Btu/ft3 x 1 MMBtu/ 1,000,000 Btu = 0.165 MMBtu/min.  
 = 9.9 MMBtu/hr

**Calculate Potential Emissions for Hazardous Air Pollutants**

Pollutant	Concentration (ppm HAP)	Molecular Weight (mol. Wt.)	Flow (scfh)	Hours (hrs)	Conversion (1 T x)	Control Efficiency (1 - .93)	Emissions (tons/year)	Emissions (lbs/hour)
1,1,1-Trichloroethane	0.168	133.41	144,000	8760	1 T x / 2000 lbs	(1 - .93) =	0.0026	0.0006
1,1,2,2-Tetrachloroethane	0.07	167.85	144,000	8760	1 T x / 2000 lbs	(1 - .93) =	0.0013	0.0003
1,1-Dichloroethane	0.741	98.97	144,000	8760	1 T x / 2000 lbs	(1 - .93) =	0.0084	0.0019
1,1-Dichloroethene	0.092	96.94	144,000	8760	1 T x / 2000 lbs	(1 - .93) =	0.0010	0.0002
1,2-Dichloroethane	0.12	98.96	144,000	8760	1 T x / 2000 lbs	(1 - .93) =	0.0014	0.0003
1,2-Dichloropropane	0.023	112.99	144,000	8760	1 T x / 2000 lbs	(1 - .93) =	0.0003	0.0001
Acrylonitrile	0.036	53.06	144,000	8760	1 T x / 2000 lbs	(1 - .861) =	0.0004	0.0001

Benzene

0.972	ppm HAP x	78.11	mol. Wt. *	144,000 scfh x	8760	hrs_x	1 T x	(1 - .861) =	=
1,000,000		385.4	scf/lb-mole			year	2000 lbs		
									0.0173 tons/year
									0.0039 lbs/hour

**Carbendisulfide**

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0.32	ppm HAP x	76.13	mol. Wt. *	144,000 scfh x	8760	hrs_x	1 T x	(1 - .861) =	=
1,000,000		385.4	scf/lb-mole			year	2000 lbs		
									0.0055 tons/year
									0.0013 lbs/hour

**Carbontetrachloride**

0.007	ppm HAP x	153.84	mol. Wt. *	144,000 scfh x	8760	hrs_x	1 T x	(1 - .93) =	=
1,000,000		385.4	scf/lb-mole			year	2000 lbs		
									0.0001 tons/year
									0.0000 lbs/hour

**Carbonylsulfide**

0.183	ppm HAP x	60.07	mol. Wt. *	144,000 scfh x	8760	hrs_x	1 T x	(1 - .861) =	=
1,000,000		385.4	scf/lb-mole			year	2000 lbs		
									0.0025 tons/year
									0.0006 lbs/hour

**Chlorobenzene**

0.227	ppm HAP x	112.56	mol. Wt. *	144,000 scfh x	8760	hrs_x	1 T x	(1 - .93) =	=
1,000,000		385.4	scf/lb-mole			year	2000 lbs		
									0.0029 tons/year
									0.0007 lbs/hour

**Chloroethane**

0.239	ppm HAP x	64.52	mol. Wt. *	144,000 scfh x	8760	hrs_x	1 T x	(1 - .93) =	=
1,000,000		385.4	scf/lb-mole			year	2000 lbs		
									0.0018 tons/year
									0.0004 lbs/hour

**Dichlorobenzene**

1.697	ppm HAP x	147	mol. Wt. *	144,000 scfh x	8760	hrs_x	1 T x	(1 - .93) =	=
1,000,000		385.4	scf/lb-mole			year	2000 lbs		
									0.0286 tons/year
									0.0065 lbs/hour

**Chloroform**

0.021	ppm HAP x	119.39	mol. Wt. *	144,000 scfh x	8760	hrs_x	1 T x	(1 - .93) =	=
1,000,000		385.4	scf/lb-mole			year	2000 lbs		
									0.0003 tons/year
									0.0001 lbs/hour

**Dichloromethane**

3.395	ppm HAP x	84.94	mol. Wt. *	144,000 scfh x	8760	hrs_x	1 T x	(1 - .93) =	=
1,000,000		385.4	scf/lb-mole			year	2000 lbs		
									0.0330 tons/year
									0.0075 lbs/hour

**Ethylbenzene**

6.789	ppm HAP x	106.16	mol. Wt. *	144,000 scfh x	8760	hrs_x	1 T x	(1 - .861) =	=
1,000,000		385.4	scf/lb-mole			year	2000 lbs		
									0.1639 tons/year
									0.0374 lbs/hour

**Hexane**

2.324	ppm HAP x	86.18	mol. Wt. *	144,000 scfh x	8760	hrs_x	1 T x	(1 - .861) =	=
1,000,000		385.4	scf/lb-mole			year	2000 lbs		
									0.0456 tons/year
									0.0104 lbs/hour

**Mercury** (Per AP-42 Table 2.4-3, control efficiency for mercury should be assumed to be 0)

0.000292	ppm HAP x	200.61	mol. Wt. *	144,000 scfh x	8760	hrs_x	1 T x	(1 - 0) =	=
1,000,000		385.4	scf/lb-mole			year	2000 lbs		
									0.0001 tons/year
									0.0000 lbs/hour

**Methyl isobutyl ketone**

0.75	ppm HAP x	100.16	mol. Wt. *	144,000 scfh x	8760	hrs_x	1 T x	(1 - .861) =	=
1,000,000		385.4	scf/lb-mole			year	2000 lbs		
									0.0171 tons/year
									0.0039 lbs/hour

**Perchloroethylene**

1.193	ppm HAP x	165.83	mol. Wt. *	144,000 scfh x	8760	hrs_x	1 T x	(1 - .93) =	=
1,000,000		385.4	scf/lb-mole			year	2000 lbs		
									0.0227 tons/year
									0.0052 lbs/hour

**Toluene**

24.405	ppm HAP x	92.13	mol. Wt. *	144,000 scfh x	8760	hrs_x	1 T x	(1 - .861) =	=
1,000,000		385.4	scf/lb-mole			year	2000 lbs		
									0.5115 tons/year
									0.1168 lbs/hour

**Trichloroethylene**

0.681	ppm HAP x	131.4	mol. Wt. *	144,000 scfh x	8760	hrs_x	1 T x	(1 - .93) =	=
1,000,000		385.4	scf/lb-mole			year	2000 lbs		
									0.0103 tons/year
									0.0023 lbs/hour

**VinylChloride**

1.077	ppm HAP x	62.5	mol. Wt. *	144,000 scfh x	8760	hrs_x	1 T x	(1 - .93) =	=
1,000,000		385.4	scf/lb-mole			year	2000 lbs		
									0.0077 tons/year
									0.0018 lbs/hour

**Xylenes**

16.582	ppm HAP x	106.16	mol. Wt. *	144,000 scfh x	8760	hrs_x	1 T x	(1 - .861) =	=
1,000,000		385.4	scf/lb-mole			year	2000 lbs		
									0.4004 tons/year
									0.0914 lbs/hour

**HCl** (HCl is a product of combustion and therefore does not have a control efficiency)

10.5	ppm HAP x	36.5	mol. Wt. *	144,000 scfh x	8760	hrs_x	1 T x	(1 - 0) =	=
1,000,000		385.4	scf/lb-mole			year	2000 lbs		
									0.6272 tons/year
									0.1432 lbs/hour

**TOTAL: 1.91 tons/year 0.44 lbs/hour**

**Emission Calculations  
Combustion Emissions from the 50 scfm Passive Flares**

**Company Name:** Prairie View Recycling and Disposal Facility  
**Address City IN Zip:** 15505 Shively Road, Wyatt, IN 46595  
**Part 70 Permit No.:** 141-18138-00051  
**Reviewer:** TE/EVP

Fuel Input	Flow Rate	Facility Description: Passive flare with capacity of 50 scfm of landfill gas
MMBtu/hr	scfm	
1.5	50	

Pollutant	PM <sup>a</sup>	PM10 <sup>a</sup>	SO <sub>2</sub> <sup>b</sup>	NOx <sup>a</sup>	CO <sup>a</sup>	NMOC <sup>c</sup>	VOC <sup>d</sup>
Emission Factor	17 (lb/10 <sup>6</sup> dscf methane)	17 (lb/10 <sup>6</sup> dscf methane)	49.6 (ppmv)	40 (lb/10 <sup>6</sup> dscf methane)	750 (lb/10 <sup>6</sup> dscf methane)	595 (ppmv)	235 (ppmv)
Potential to Emit (tons/year) One (1) Flare	0.11	0.11	0.11	0.26	4.9	0.03	0.01
Potential to Emit (tons/year) Three (3) Flares	0.34	0.34	0.34	0.79	14.78	0.08	0.03

Assume PM emissions equal to PM10 emissions.

<sup>a</sup> Emission factors are from AP-42, Chapter 2.4 - Municipal Solid Waste Landfills, Table 2.4-5. Flares (AP-42, 11/98).

<sup>b</sup> The total inlet concentration of Sulfur content compounds in AP-42, Chapter 2.4 - Municipal Solid Waste Landfills - Table 2.4-1 (AP-42, 11/98)

<sup>c</sup> The NMOC concentration is the default value in EPA Landfill Gas Emissions Model, Version 2.01 and AP-42.

<sup>d</sup> VOC is 39% of total NMOC or 235 ppmv as hexane from AP-42 Section 2.4, Table 2.4-2

**Methodology**

PTE of PM / PM10 / NOx / CO Emissions (tons/year) = Flow Rate (scfm landfill gas) / 10<sup>6</sup> x Emission Factor (lb/10<sup>6</sup> dscf) x .5 (conc. Methane in landfill gas) x 60 (mins/hour) x 8760 (hours/year) x 1 ton/2000 lbs

PTE of SO<sub>2</sub> Emissions (tons/year) = Flow Rate (scfm) x Emission Factor (ppmv) / 1000,000 x 1 atm / Gas Constant (0.7302 atm-cf/lb mole-R) / Temp (60F+ 460) x Mole weight of SO<sub>2</sub> (64 lbs/lbs mole) x 60 mins/hour x 8760 hours/year x 1 ton/2000 lbs

PTE of NMOC Emissions (tons/year) = Flow Rate (scfm) x Emission Factor (ppmv) / 1000,000 x 1 atm / Gas Constant (0.7302 atm-cf/lb mole-R) / Temp (60F+ 460) x Mole weight of Hexane ( lbs/lbs mole) x 60 mins/hour x 8760 hours/year x 1 ton/2000 lbs x (1-98% control efficiency)

**Emission Calculations**  
**Combustion Emissions from the 0.805 MMBtu/hr Tipper Engine**

**Company Name:** Prairie View Recycling and Disposal Facility  
**Address City IN Zip:** 15505 Shively Road, Wyatt, IN 46595  
**Part 70 Permit No.:** 141-18138-00051  
**Reviewer:** TE/EVP

Emission Unit	Maximum Capacity	Pollutant	Emission Factor (lbs/MMBTU)	PTE					
				PM (Tons/Year)	PM10 (Tons/Year)	SOx (Tons/Year)	NOx (Tons/Year)	VOC (Tons/Year)	CO (Tons/Year)
Tipper Engine	115	PM	0.31	1.09					
SCC 2-02-001-02	Horsepower	PM10	0.31		1.09				
		SOx	0.29			1.02			
		NOx	2.17				7.66		
	0.805 (MMBtu/hr)	VOC	0.36					1.27	
		CO	0.95						3.35

Emission factors for PM, PM10, SO<sub>2</sub>, VOC and CO are from AP-42, Chapter 3.3 - Gasoline and Diesel Industrial Engines, Table 3.3-1. (10/96)

Emission factor for NOx is from EPA, Control of Emissions of Air Pollution From Nonroad Diesel Engines [Federal Register: September 24, 1997 (Volume 62, 7,000 BTU heat input = one horsepower-hour (Table 3.3-1, AP-42)

**Methodology**

PTE (tons/year) = Maximum Capacity (MMBtu/hour) x Emission Factor (lbs/MMBTU) x 1 ton/2000 lbs x 8760 hours/year

**Appendix A: Emission Calculations**

***PM Data***

**Company Name:** Prairie View Recycling and Disposal Facility  
**Address City IN Zip:** 15505 Shively Road, Wyatt, IN 46595  
**Part 70 Permit No.:** 141-18138-00051  
**Reviewer:** TE/EVP

Enter mean wind speed, U<sup>a</sup>  mph

Enter material moisture content, M (whole number)<sup>a</sup>  %

Enter silt content, G (whole number)<sup>a</sup>  %

Enter amount of dirt handled per day for dirt pushing operations  ton/day

Enter number of hours per day for dirt-pushing operations  hr/day

Enter mean silt content of unpaved surface material (whole number), s<sup>c</sup>  %

Enter road surface silt loading of paved surface material (whole number), sL<sup>c</sup>  g/m<sup>2</sup>

Enter mean/avg vehicle weight loaded (unpaved & paved), W  tons

Enter # days per year with at least 0.01 in. precipitation, p<sup>b</sup>  days

Enter number of days per year vehicles travel on site  days

Enter total length of unpaved roads, upr  mile

Enter total length of paved roads, pr  mile

The following is a breakdown of trucks; enter the number of trucks per day

Transfer Trailer

High Capacity

Front Loader

Rear Loader

Roll-Off

Dump Trucks

Other (P/U)

<sup>a</sup> AP-42, Section 13.2.4, 11/06  
<sup>b</sup> derived from AP42, Figure 13.2.2-1, 11/06  
<sup>c</sup> AP42, Section 13.2.2, 11/06

**Fugitive Emissions from Unpaved Roads**

**Company Name:** Prairie View Recycling and Disposal Facility  
**Address City IN Zip:** 15505 Shively Road, Wyatt, IN 46595  
**Part 70 Permit No.:** 141-18138-00051  
**Reviewer:** TE/EVP

	Uncontrolled			80% Controlled (water)		
	lb/yr	ton/yr	lb/hr	TPY	lb/hr	TPY
Total Calculated PM <sub>10</sub> Emissions from Unpaved Roads	181966.63	90.98	20.77	18.20	4.15	4.15
Total Calculated TSP Emissions from Unpaved Roads	674057.30	337.03	76.95	67.41	15.39	15.39

$TSP (lb/VMT)^a = E \cdot (k \cdot (s/12)^{0.77} \cdot (W/3)^{0.45}) / ((365-p)/365)$   
 $PM_{10} (lb/VMT)^a = E \cdot (k \cdot (s/12)^{0.91} \cdot (W/3)^{0.45}) / ((365-p)/365)$

where,  
 E = emission factor from loaded trucks (lb/VMT) 141036.00 mi  
 VMT = vehicle mile travelled  
 k = particle size multiplier for PM<sub>10</sub> (unpaved)<sup>a</sup> 1.50  
 k = particle size multiplier for TSP (unpaved)<sup>a</sup> 4.90  
 s = mean silt content of unpaved surface materia (unpaved)<sup>b</sup> 6.40 %  
 W = mean/avg vehicle weight loaded (unpaved & paved) 18.30 tons  
 p = # days per year with at least 0.01 in. precip<sup>b</sup> 120.00 days  
 annual operation 365.00 days  
 UPR = total length of unpaved roads 2.10 mi

Vehicle Type	E (lb/VMT)		Truck Count (per day)	Emissions (lb/yr)	
	PM <sub>10</sub>	TSP		PM <sub>10</sub>	TSP
Transfer Trailer	1.29	4.78	22.00	21756.88	80593.81
High Capacity	1.29	4.78	0.00	0.00	0.00
Front Loader	1.29	4.78	22.00	21756.88	80593.81
Rear Loader	1.29	4.78	50.00	49447.45	183167.74
Roll-Off	1.29	4.78	32.00	31646.37	117227.36
Dump Trucks	1.29	4.78	40.00	39557.96	146534.20
Other (P/U)	1.29	4.78	18.00	17801.08	65940.39

**PM10 Emissions - 80% control**  
**Control Device - Watering of unpaved roads, gravel/stone road, reduced speed limit**

**Tons per year ^ 0.8 control = Controlled emissions** 72.79 tpy  
**Tons per year - controlled emissions = Fugitive emissions reported** 18.20 tpy

<sup>a</sup> AP42, Section 13.2.2, 11/06  
<sup>b</sup> derived from AP42, Figure 13.2.2-1, 11/06

**Fugitive Emissions from Paved Roads**

**Company Name:** Prairie View Recycling and Disposal Facility  
**Address City IN Zip:** 15505 Shively Road, Wyatt, IN 46595  
**Part 70 Permit No.:** 141-18138-00051  
**Reviewer:** TE/EVP

	Uncontrolled			80% Controlled (water)		
Total Calculated PM <sub>10</sub> Emissions from Paved Roads	22,717	lb/yr	11.36	ton/yr	2.59	lb/hr
Total Calculated TSP Emissions from Paved Roads	116,501	lb/yr	58.25	ton/yr	13.30	lb/hr
					2.27	TPY
					0.52	lb/hr
					11.65	TPY
					2.66	lb/hr

**PM<sub>10</sub> and TSP (lb/VMT)<sup>a</sup>**  $E = k \cdot (sL/2)^{0.65} \cdot (W/3)^{1.5} - C$

where,  
 E = emission factor from loaded trucks (lb/VMT)  
 VMT = vehicle mile travelled 40296 mi  
 k = particle size multiplier for PM<sub>10</sub> (paved)<sup>a</sup> 0.016 lb/VMT  
 k = particle size multiplier for TSP (paved)<sup>a</sup> 0.082 lb/VMT  
 sL = road surface silt loading (g/m<sup>2</sup>) 7.4 g/m<sup>2</sup>  
 W = mean/avg vehicle weight loaded (unpaved & paved) 18.3 tons  
 annual operation 365 days  
 PR = total length of paved roads 0.60 mi  
 C = emission factor for 1980's vehicle exhaust, brake wear and tire wear for PM and PM10 0.00047 lb/VMT

Vehicle Type	E (lb/VMT)		Truck Count <sup>1</sup> (per day)	Emissions (lb/yr)	
	PM <sub>10</sub>	TSP		PM <sub>10</sub>	TSP
Transfer Trailer	0.56	2.89	22	2,716	13,930
High Capacity	0.56	2.89	0	0	0
Front Loader	0.56	2.89	22	2,716	13,930
Rear Loader	0.56	2.89	50	6,173	31,658
Roll-Off	0.56	2.89	32	3,951	20,261
Dump Trucks	0.56	2.89	40	4,938	25,326
Other (P/U)	0.56	2.89	18	2,222	11,397

**PM10 Emissions - 80% control**  
**Control Device - Sweeping of paved roads, reduced speed limit**

**Tons per year \* 0.8 control = Controlled emissions** 9.09 tpy  
**Tons per year - controlled emissions = Fugitive emissions reported** 2.27 tpy

<sup>a</sup> AP42, Section 13.2.2, 12/03

**Indiana Department of Environmental Management  
Office of Air Quality**

Technical Support Document (TSD) for a Part 70 Operating Permit Renewal

**Source Background and Description**

<b>Source Name:</b>	<b>Prairie View Recycling and Disposal Facility</b>
<b>Source Location:</b>	<b>15505 Shively Road, Wyatt, IN 46595</b>
<b>County:</b>	<b>St. Joseph</b>
<b>SIC Code:</b>	<b>4953, 4911</b>
<b>Permit Renewal No.:</b>	<b>T141-18138-00051</b>
<b>Permit Reviewer:</b>	<b>Trish Earls/EVP</b>

The Office of Air Quality (OAQ) has reviewed the operating permit renewal application from Prairie View Recycling and Disposal Facility relating to the operation of a stationary municipal solid waste landfill.

**History**

On October 14, 2003, Prairie View Recycling and Disposal Facility submitted an application to the OAQ requesting to renew its operating permit. Prairie View Recycling and Disposal Facility was issued a Part 70 Operating Permit (T141-7477-00051) on July 13, 1999.

**Permitted Emission Units and Pollution Control Equipment**

- (a) One (1) solid waste disposal facility that opened in 1981 and has a design capacity of 15.30 Million Megagrams.
- (b) One (1) open flare with a capacity of 2,130 scfm of landfill gas, constructed in 2004. There is no physical means to bypass the landfill gas flow before it reaches the open flare.
- (c) Four (4) Caterpillar 3516 landfill gas fueled engine/generator sets, identified as EG1, EG2, EG3, and EG4, and a single fuel gas compressor. The generators are rated at 800 kilowatts each, and were installed in 1994.
- (d) Gas treatment system, installed in 1994, consisting of dewatering, compressions, cooling, filtering and heat exchange operations. The gas treatment system is enclosed and has no atmospheric vents.
- (e) Four (4) Caterpillar 3516 landfill gas fueled reciprocating internal combustion engine/generator sets, identified as EG5, EG6, EG7, and EG8, to be installed in 2007. The engines are rated at 1148 horsepower each, and each exhausts through one (1) stack, identified as ES5, ES6, ES7, and ES8, respectively.

**Insignificant Activities**

- (a) Space heaters, process heaters, or boilers using the following fuels:
  - (1) Propane or liquefied petroleum gas, or butane-fired combustion sources with heat input equal to or less than six million (6,000,000) Btu per hour.

- (b) Equipment powered by internal combustion engines of capacity equal to or less than 500,000 Btu/hour, except where total capacity of equipment operated by one stationary source exceeds 2,000,000 Btu/hour.
- (c) A gasoline fuel transfer and dispensing operation handling less than or equal to 1,300 gallons per day, such as filling of tanks, locomotives, automobiles, having a storage capacity less than or equal to 10,500 gallons.
- (d) A petroleum fuel, other than gasoline, dispensing facility having a storage capacity less than or equal to 10,500 gallons, and dispensing less than or equal to 230,000 gallons per month.
- (e) The following VOC and HAP storage containers:
  - (1) Storage tanks with capacity less than or equal to 1,000 gallons and annual throughput less than 12,000 gallons; and
  - (2) Vessels storing lubricating oils, hydraulic oils, machining oils, and machining fluids.
- (f) Paved and unpaved roads and parking lots with public access. [326 IAC 6-4]
- (g) Other activities or categories not previously identified:
  - (1) Leachate/Condensate Storage Tank #1;
  - (2) Leachate/Condensate Storage Tank #2;
  - (3) Crankcase Breather Vent;
  - (4) Leachate Recirculation;
  - (5) Parts Washing; and
  - (6) Soil Stockpiles.
- (h) One (1) tipper engine, identified as TIPPER1, with a rated capacity of 115 horsepower.
- (i) Three (3) passive vent flares, each with a capacity of 50 scfm of landfill gas, constructed in 2005.
- (j) One (1) 20 gallon small parts washing station, using Safety Kleen or other similar cleaning solvent. [326 IAC 8-3-2][326 IAC 8-3-5]
- (k) Vessels storing motor oil and transmission fluid ranging in size from 200 gallons to 500 gallons, and 55 gallon drums for antifreeze storage.
- (l) One (1) waste oil storage tank ranging in size from 500 gallons to 1,000 gallons.
- (m) Crankcase breather vents for each engine, emitting a maximum of 0.81 pounds of PM per hour.
- (n) A process gas chromatograph.
- (o) Maintenance welding, cutting, and grinding equipment.

- (p) Application of oils, greases, or other lubricants.
- (q) Electric powered air compressors.

### Existing Approvals

Since the issuance of the Part 70 Operating Permit (T141-7477-00051) on July 13, 1999, the source has also constructed or has been operating under the following approvals:

- (a) First reopening no.: R141-13473-00051, issued on January 14, 2002;
- (b) First administrative amendment no.: AA141-18753-00051, issued on March 24, 2004;
- (c) Second administrative amendment no.: AA141-19860-00051, issued on November 18, 2004;
- (d) First Significant Permit Modification No.: 141-19803-00051, issued on June 9, 2005;
- (e) Third Administrative Amendment No.: AA141-21158-00051, issued on June 23, 2005;
- (f) Second Significant Permit Modification: 141-21776-00051, issued on March 2, 2006;
- (g) First Significant Source Modification: 141-23430-00051, issued on April 2, 2007; and
- (h) Third Significant Permit Modification: 141-23465-00051, issued on April 20, 2007.

All terms and conditions of previous permits issued pursuant to permitting programs approved into the state implementation plan have been either incorporated as originally stated, revised, or deleted by this permit. All previous registrations and permits are superseded by this permit.

### Enforcement Issue

There are no enforcement actions pending.

### Stack Summary

Stack ID	Operation	Height (feet)	Diameter (feet)	Flow Rate (acfm)	Temperature (°F)
ES5	EG5	22	0.83	~6,000	800
ES6	EG6	22	0.83	~6,000	800
ES7	EG7	22	0.83	~6,000	800
ES8	EG8	22	0.83	~6,000	800

### Emission Calculations

See Appendix A of this document for detailed emission calculations.

### County Attainment Status

The source is located in St. Joseph County

Pollutant	Status
PM <sub>10</sub>	attainment
PM <sub>2.5</sub>	attainment
SO <sub>2</sub>	attainment
NOx	attainment
8-hour Ozone	attainment
CO	attainment
Lead	attainment

- (a) St. Joseph County has been classified as unclassifiable or attainment for PM<sub>2.5</sub>. U.S. EPA has not yet established the requirements for Prevention of Significant Deterioration (PSD), 326 IAC 2-2 for PM<sub>2.5</sub> emissions. Therefore, until the U.S.EPA adopts specific provisions for PSD review for PM<sub>2.5</sub> emissions, it has directed states to regulate PM<sub>10</sub> emissions as a surrogate for PM<sub>2.5</sub> emissions. See the State Rule Applicability – Entire Source section.
- (b) Volatile organic compounds (VOC) and Nitrogen Oxides (NOx) are regulated under the Clean Air Act (CAA) for the purposes of attaining and maintaining the National Ambient Air Quality Standards (NAAQS) for ozone. Therefore, VOC and NOx emissions are considered when evaluating the rule applicability relating to the ozone standards. On September 6, 2007, the Indiana Air Pollution Control Board adopted an emergency rule for the redesignation of several counties, including Allen, Elkhart, Clark, Floyd, LaPorte, and St. Joseph, to attainment for the 8-hour ozone standard. The source is located in St. Joseph County; therefore, VOC and NOx emissions were reviewed pursuant to the requirements for Prevention of Significant Deterioration, 326 IAC 2-2.
- (c) St. Joseph County has been classified as attainment or unclassifiable in Indiana for all other criteria pollutants. Therefore, these emissions were reviewed pursuant to the requirements for Prevention of Significant Deterioration (PSD), 326 IAC 2-2. See the State Rule Applicability – Entire Source section.
- (d) On October 25, 2006, the Indiana Air Pollution Control Board finalized a rule revision to 326 IAC 1-4-1 revoking the one-hour ozone standard in Indiana.
- (e) Fugitive Emissions  
Since this type of operation is not one of the twenty-eight (28) listed source categories under 326 IAC 2-2 or 326 IAC 2-3 and since there are no applicable New Source Performance Standards that were in effect on August 7, 1980, the fugitive emissions are not counted toward determination of PSD or Emission Offset applicability.

### Unrestricted Potential Emissions

This table reflects the unrestricted potential emissions of the source.

Pollutant	tons/yr
PM	Less than 100
PM-10	Less than 100
SO <sub>2</sub>	Less than 100
VOC	Less than 100
CO	Greater than 250
NO <sub>x</sub>	Greater than 100

HAPs	tons/yr
Toluene	8.64
HCl	1.18
All others	15.13
Total	24.96

- (a) The potential to emit (as defined in 326 IAC 2-7-1(29)) of CO and NO<sub>x</sub> is equal to or greater than 100 tons per year. Therefore, the source is subject to the provisions of 326 IAC 2-7.
- (b) The potential to emit (as defined in 326 IAC 2-7-1(29)) of all other criteria pollutants are less than 100 tons per year.

#### Fugitive Emissions

Since this type of operation is not one of the twenty-eight (28) listed source categories under 326 IAC 2-7, fugitive emissions are not counted toward the determination of Part 70 applicability.

### Actual Emissions

The following table shows the actual emissions from the source. This information reflects the 2006 OAQ emission data.

Pollutant	Actual Emissions (tons/year)
<b>PM</b>	38.07
<b>PM10</b>	16.40
<b>PM2.5</b>	9.62
<b>SO<sub>2</sub></b>	3.98
<b>VOC</b>	9.06
<b>CO</b>	159.34
<b>NO<sub>x</sub></b>	68.16
<b>HAP</b>	7.22

### Part 70 Permit Conditions

This source is subject to the requirements of 326 IAC 2-7, pursuant to which the source has to meet the following:

- (a) Emission limitations and standards, including those operational requirements and limitations that assure compliance with all applicable requirements at the time of issuance of Part 70 permits.
- (b) Monitoring and related record keeping requirements which assume that all reasonable information is provided to evaluate continuous compliance with the applicable requirements.

**Potential to Emit After Issuance**

The table below summarizes the potential to emit, reflecting all limits, of the emission units. Any control equipment is considered federally enforceable only after issuance of this Part 70 permit renewal, and only to the extent that the effect of the control equipment is made practically enforceable in the permit.

Process/Emission Unit	Potential to Emit (tons/year)							
	PM	PM10	SO <sub>2</sub>	VOC	CO	NO <sub>x</sub>	Single HAP	Total HAPs
Engines EG1, EG2, EG3, and EG4 - 1994	8.33	8.33	1.70	0.14	113.72	59.74	0.32 (HCl)	1.27
Engines EG5, EG6, EG7, and EG8 - 2007	8.33	8.33	1.70	0.14	113.72	59.74	0.32 (HCl)	1.27
Landfill - 1981	0.00	0.00	0.00	46.21	0.00	0.00	7.81 (Toluene)	21.75
Open Flare - 2004	1.99	1.99	3.06	0.24	113.91	20.94	0.56 (HCl)	0.68
TIPPER1 Engine - 2005	1.09	1.09	1.02	1.27	3.35	7.66	Negl.	Negl.
Three (3) Passive Vent Flares - 2005	0.34	0.34	0.34	0.03	14.78	0.79	0.00	0.00
Fugitive Unpaved Roads	67.41	18.20	0.00	0.00	0.00	0.00	0.00	0.00
Fugitive Paved Roads	11.65	2.27	0.00	0.00	0.00	0.00	0.00	0.00
<b>Total Non-fugitive emissions</b>	<b>20.08</b>	<b>20.08</b>	<b>7.82</b>	<b>48.03</b>	<b>359.48</b>	<b>148.87</b>	<b>7.81 (Toluene)</b>	<b>24.96</b>
<b>PSD Major Source Threshold</b>	<b>250</b>	<b>250</b>	<b>250</b>	<b>250</b>	<b>250</b>	<b>250</b>	<b>N/A</b>	<b>N/A</b>
<b>Total Emissions</b>	<b>99.14</b>	<b>40.55</b>	<b>7.82</b>	<b>48.03</b>	<b>359.48</b>	<b>148.87</b>	<b>7.81 (Toluene)</b>	<b>24.96</b>

- (a) This existing stationary source is major for PSD because the emissions of at least one attainment pollutant (CO) are greater than two hundred fifty (>250) tons per year, and is not one of the twenty-eight (28) listed source categories.
- (b) This existing stationary source is major for Emission Offset because the emissions of the nonattainment pollutant, NO<sub>x</sub> for the 8-hour ozone standard, are greater than one hundred (>100) tons per year.

- (c) **Fugitive Emissions**  
Since this type of operation is not one of the twenty-eight (28) listed source categories under 326 IAC 2-2 or 326 IAC 2-3, fugitive emissions are not counted toward the determination of PSD and Emission Offset applicability.

**Federal Rule Applicability**

The following federal rules are applicable to the source:

- (a) Pursuant to 40 CFR 64.2, Compliance Assurance Monitoring (CAM) is applicable to existing emission units that involve a pollutant-specific emission unit and meet the following criteria:
- (1) has a potential to emit before controls equal to or greater than the major source threshold for the pollutant involved;
  - (2) is subject to an emission limitation or standard for that pollutant; and
  - (3) uses a control device, as defined in 40 CFR 64.1, to comply with that emission limitation or standard.

The following table is used to identify the applicability of each of the criteria, under 40 CFR 64.1, to each existing emission unit and specified pollutant subject to CAM:

<b>Emission Unit / Pollutant</b>	<b>Control Device Used</b>	<b>Emission Limitation (Y/N)</b>	<b>Uncontrolled PTE (tons/year)</b>	<b>Controlled PTE (tons/year)</b>	<b>Major Source Threshold (tons/year)</b>	<b>CAM Applicable (Y/N)</b>	<b>Large Unit (Y/N)</b>
EG1 – PM10, SO <sub>2</sub> , VOC, and CO	None	N	<100	<100	100	N	N
EG1 - NO <sub>x</sub>	None	Y	14.93	14.93	100	N	N
EG1 - HAPs	None	N	<10	<10	10 single and 25 total	N	N
EG2 – PM10, SO <sub>2</sub> , VOC, and CO	None	N	<100	<100	100	N	N
EG2 - NO <sub>x</sub>	None	Y	14.93	14.93	100	N	N
EG2 - HAPs	None	N	<10	<10	10 single and 25 total	N	N
EG3 – PM10, SO <sub>2</sub> , VOC, and CO	None	N	<100	<100	100	N	N
EG3 - NO <sub>x</sub>	None	Y	14.93	14.93	100	N	N
EG3 - HAPs	None	N	<10	<10	10 single and 25 total	N	N
EG4 – PM10, SO <sub>2</sub> , VOC, and CO	None	N	<100	<100	100	N	N
EG4 - NO <sub>x</sub>	None	Y	14.93	14.93	100	N	N
EG4 - HAPs	None	N	<10	<10	10 single and 25 total	N	N
EG5 – all pollutants	None	N	<100	<100	100	N	N

Emission Unit / Pollutant	Control Device Used	Emission Limitation (Y/N)	Uncontrolled PTE (tons/year)	Controlled PTE (tons/year)	Major Source Threshold (tons/year)	CAM Applicable (Y/N)	Large Unit (Y/N)
EG5 - HAPs	None	N	<10	<10	10 single and 25 total	N	N
EG6 – all pollutants	None	N	<100	<100	100	N	N
EG6 - HAPs	None	N	<10	<10	10 single and 25 total	N	N
EG7 – all pollutants	None	N	<100	<100	100	N	N
EG7 - HAPs	None	N	<10	<10	10 single and 25 total	N	N
EG8 – all pollutants	None	N	<100	<100	100	N	N
EG8 - HAPs	None	N	<10	<10	10 single and 25 total	N	N
Landfill - VOC	Open Flare	Y	69.08	18.31	100	N	N
Landfill - HAPs	None	N	<10	<10	10 single and 25 total	N	N
Open Flare - CO	None	N	113.91	113.91	100	N	N
Open Flare - VOC	None	Y	0.59	0.59	100	N	N
Open Flare - PM10	None	N	1.99	1.99	100	N	N
Open Flare - SO <sub>2</sub>	None	N	4.68	4.68	100	N	N
Open Flare - NO <sub>x</sub>	None	N	20.94	20.94	100	N	N
Open Flare - HAPs	None	N	<10	<10	10 single and 25 total	N	N

Based on this evaluation, the requirements of 40 CFR Part 64, CAM are not applicable to any of the existing units as part of this Part 70 permit renewal.

- (b) The municipal solid waste landfill is subject to the New Source Performance Standard for Municipal Solid Waste Landfills (40 CFR 60.750, Subpart WWW), which is incorporated by reference as 326 IAC 12, because the municipal solid waste landfill commenced construction, reconstruction or modification or began accepting waste on or after May 30, 1991.

Nonapplicable portions of the NSPS will not be included in the permit. The municipal solid waste landfill is subject to the following portions of Subpart WWW:

- (1) 40 CFR 60.750
- (2) 40 CFR 60.751
- (3) 40 CFR 60.752(b)(2)(ii), (iii), (iv), (v)
- (4) 40 CFR 60.752(d)
- (5) 40 CFR 60.753
- (6) 40 CFR 60.754(b)
- (7) 40 CFR 60.754(c)
- (8) 40 CFR 60.754(d)
- (9) 40 CFR 60.754(e)
- (10) 40 CFR 60.755
- (11) 40 CFR 60.756(a)

- (12) 40 CFR 60.756(b)
- (13) 40 CFR 60.756(c)(1)
- (14) 40 CFR 60.756(d)
- (15) 40 CFR 60.756(e)
- (16) 40 CFR 60.756(f)
- (17) 40 CFR 60.757(d)
- (18) 40 CFR 60.757(e)
- (19) 40 CFR 60.757(f)(1)
- (20) 40 CFR 60.757(f)(3)
- (21) 40 CFR 60.757(f)(4)
- (22) 40 CFR 60.757(f)(5)
- (23) 40 CFR 60.757(f)(6)
- (24) 40 CFR 60.757(g)
- (25) 40 CFR 60.758(a)
- (26) 40 CFR 60.758(b)
- (27) 40 CFR 60.758(c)(1)
- (28) 40 CFR 60.758(c)(3)
- (29) 40 CFR 60.758(c)(4)
- (30) 40 CFR 60.758(d)
- (31) 40 CFR 60.758(e)
- (32) 40 CFR 60.758(f)
- (33) 40 CFR 60.759

Note: This source submitted the initial design capacity report on June 17, 1996.

- (c) The requirements of the National Emission Standards for Hazardous Air Pollutants (NESHAP), 40 CFR 63.6580 through 63.6675, Subpart ZZZZ, National Emission Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines, are not included in this permit for the eight (8) engine/generator sets (EG1 through EG8) because pursuant to 40 CFR 63.6585, this rule applies to a stationary reciprocating internal combustion engine (RICE) at a major source of HAP emissions. Since this source is not a major source of HAP emissions, the requirements of this rule are not included for the eight (8) engine/generator sets.
- (d) The insignificant parts washer is not subject to the requirements of the NESHAP, 40 CFR 63, Subpart T, Halogenated Solvent Cleaning, because the solvent used by the parts washer does not contain any halogenated solvents regulated by this rule.
- (e) The municipal solid waste landfill is subject to the National Emission Standards for Hazardous Air Pollutants for Asbestos (40 CFR Part 61, Subpart M), which is incorporated by reference as 326 IAC 14-2, because it receives asbestos-containing waste material from a source covered under 40 CFR 61.149, 61.150, or 61.155.

Non applicable portions of the NESHAP will not be included in the permit. The municipal solid waste landfill is subject to the following portions of Subpart M.

- (1) 40 CFR 61.140
- (2) 40 CFR 61.141
- (3) 40 CFR 61.153(a)(5)
- (4) 40 CFR 61.153(b)
- (5) 40 CFR 61.154
- (6) 40 CFR 61.156
- (7) 40 CFR 61.157

The provisions of 40 CFR 61 Subpart A – General Provisions, which are incorporated as 326 IAC 14-1-1, apply to the facility described in this section except when otherwise specified in 40 CFR 61 Subpart M.

- (f) The municipal solid waste landfill is subject to the National Emission Standards for Hazardous Air Pollutants: Municipal Solid Waste Landfills, 326 IAC 20, (40 CFR 63.1930 through 63.1990, Subpart AAAAA), which is incorporated by reference as 326 IAC 20-67, because this existing municipal solid waste landfill has accepted waste since November 8, 1987 and is an area source with a design capacity greater than or equal to 2.5 million Mg and 2.5 million m<sup>3</sup> with estimated uncontrolled Non-Methane Organic Compounds (NMOC) emissions greater than 50 Mg/year.

Pursuant to a determination letter from EPA region V (dated February 25, 2004), the landfill gas treatment system at the source is considered a treatment system that meets the intent of 40 CFR 60.752 (b)(2)(iii)(C). Therefore, the eight (8) engine/generator sets (EG1 through EG8), which combust the treated landfill gas, are not subject to the operational requirements in 40 CFR 60.753, the testing requirements in 40 CFR 60.754, the compliance provisions of 40 CFR 60.755, the monitoring requirements in 40 CFR 60.756, the reporting requirements in 40 CFR 60.757, and the record keeping requirements in 40 CFR 60.758. The determination letter from EPA region V also stated that the treated gas sent to the control device is no longer subject to the requirements of 40 CFR 63, Subpart AAAAA. Therefore, the eight (8) engine/generator sets (EG1 through EG8), which combust the treated landfill gas, are also not subject to the requirements of 40 CFR 63, Subpart AAAAA.

Nonapplicable portions of the NESHAP will not be included in the permit. The municipal solid waste landfill is subject to the following portions of Subpart AAAAA.

- (1) 40 CFR 63.1930
- (2) 40 CFR 63.1935(a)
- (3) 40 CFR 63.1940(a) and (c)
- (4) 40 CFR 63.1945(b)
- (5) 40 CFR 63.1945(f)
- (6) 40 CFR 63.1950
- (7) 40 CFR 63.1955(a)(1)
- (8) 40 CFR 63.1955(b)
- (9) 40 CFR 63.1955(c)
- (10) 40 CFR 63.1960
- (11) 40 CFR 63.1965
- (12) 40 CFR 63.1975
- (13) 40 CFR 63.1980(a)
- (14) 40 CFR 63.1980(b)
- (15) 40 CFR 63.1980(g)
- (16) 40 CFR 63.1985
- (17) 40 CFR 63.1990
- (18) Table 1 to Subpart AAAAA

The provisions of 40 CFR 63 Subpart A – General Provisions, which are incorporated as 326 IAC 20-1-1, apply to the facility described in this section except when otherwise specified in 40 CFR 63 Subpart AAAAA.

## State Rule Applicability - Entire Source

### 326 IAC 2-2 (Prevention of Significant Deterioration (PSD))

The discussion given below is for PSD applicability, for all criteria pollutants. Before September 30, 1997 St. Joseph County was designated non-attainment for 1-hour ozone and after June 15, 2004, St. Joseph County was designated as non-attainment for 8-hour ozone. The discussion for VOC and NO<sub>x</sub>, before September 30, 1997 and after June 15, 2004, is given in the next section under 326 IAC 2-3 (Emissions Offset).

The source was constructed in 1981, after the PSD applicability of August 7, 1977. This source is not a major stationary source because emissions of criteria pollutants have always been less than 250 tons per year and it is not one of the 28 listed source categories. Therefore, pursuant to 326 IAC 2-2, the PSD requirements did not apply to the source at that time.

The source was issued a construction permit, CP-141-2382, on May 8, 1992, for the installation of a 4,550 scfm open flare, a control device with destruction efficiency of 98%. The emissions increase of all pollutants from the source due to the installation of 4,550 scfm open flare were each less than the PSD significant modification thresholds. After the installation of one (1) 4,550 scfm open flare, the source was still a minor source for PSD applicability.

The source was issued a construction permit, CP-141-3483, on July 5, 1994 to install four (4) caterpillar engine/ generator sets for energy recovery from landfill gas. The emissions increase of all pollutants due to the installation of four (4) engine /generator sets were each less than the PSD significant modification thresholds. After the installation of four (4) engine/generator sets, the source was still a minor source for PSD applicability.

The source submitted an amended design capacity report in December 2003 to notify IDEM of an increase in the landfill design capacity. The design capacity of the landfill was increased from 13.2 million megagrams to 15.3 million megagrams. This increase in the design capacity resulted in the increase of VOC emissions by 2.18 tons per year, assuming that landfill becomes inactive by the year 2019. There was no approval issued to the source for this change since the emissions increase was at exempt levels and the source was still a minor source under this rule.

The source was issued Administrative Amendment No. 141-18753-00051 on March 24, 2004 to replace 4,550 scfm open flare with 2,130 scfm open flare. The net decrease in the emissions due to this replacement was 0.95 tons per year of particulate, 7.78 tons per year of SO<sub>2</sub>, 2.0 tons per year of NO<sub>x</sub>, and 0.72 tons per year of VOC and the net increase in emissions due to this replacement was 0.3 tons per year of CO. This modification was not subject to this rule and the source was still a minor source under this rule.

The source was issued First Significant Permit Modification No. 141-19803-00051 on June 9, 2005. The purpose of the significant modification was to remove 40 CFR 60, Subpart WWW requirements for the four (4) caterpillar engines/generator sets. There were no changes in the emissions from the entire source due to the significant permit modification.

The source was issued Administrative Amendment 141-21158-00051 on June 23, 2005 to install one (1) landfill gas fired tipper engine, identified as TIPPER1 and rated at 115 horsepower, and four (4) passive vent flares, each with a capacity to process 50 scfm of landfill gas. The potential emissions NO<sub>x</sub> and CO from TIPPER1 and four (4) vent flares combined were 8.71 and 23.06 tons per year, respectively, which are less than the PSD significant modification thresholds. After the installation of the tipper engine and the four (4) passive vent flares, the source was still a minor source for PSD applicability.

The source was issued Significant Permit Modification No. 141-21776-00051 on March 2, 2006 to remove the compliance monitoring requirements pursuant to 40 CFR 60.756(c)(2) that are included in the Part 70 permit (T141-7477-00051) and the associated record keeping and reporting requirements that are included in the Part 70 permit because USEPA stated that the gas flow measurement or lock and key requirements under 40 CFR 60.756, Subpart WWW would not apply to a system that is designed such that there is no physical means to bypass the gas flow before it reaches the control device. The inspector for this source verified that the open flare at this source is designed such that there is no physical means of bypass. Therefore, the compliance monitoring requirements pursuant to 40 CFR 60.756(c)(2) which relate to a bypass for the open flare were removed from the Part 70 permit. There were no changes in the emissions from the entire source due to the significant permit modification.

The source was issued Significant Source Modification No. 141-23430-00051 on April 2, 2007 and Significant Permit Modification No. 141-23465-00051 on April 20, 2007 to install four (4) new engine /generator sets, identified as ES5, ES6, ES7, and ES8, and some additional insignificant activities. The modification to the existing minor stationary source was not major because the emissions increase was less than the PSD major source thresholds. Therefore, pursuant to 326 IAC 2-2, the PSD requirements were not applicable to this modification.

After the above modification to add the four (4) new engine/generator sets, the source-wide CO emissions exceeded 250 tons per year making this a major source under 326 IAC 2-2 (PSD).

#### 326 IAC 2-3 (Emission Offset)

The 1-hour ozone status for St. Joseph County was re-designated from non-attainment to attainment on September 30, 1997. On October 25, 2006, the Indiana Air Pollution Control Board finalized a rule revision to 326 IAC 1-4-1 revoking the one-hour ozone standard in Indiana. After June 15, 2004, St. Joseph County was re-designated as non-attainment for the 8-hour ozone standard. However, On September 6, 2007, the Indiana Air Pollution Control Board adopted an emergency rule for the redesignation of several counties, including Allen, Elkhart, Clark, Floyd, LaPorte, and St. Joseph, to attainment for the 8-hour ozone standard. Therefore, only modifications performed prior to September 6, 2007 were reviewed for applicability of this rule.

The source was issued a construction permit, CP-141-2382, on May 8, 1992, for the installation of 4,550 scfm open flare, a control device with destruction efficiency of 98%. The installation of 4,550 scfm open flare resulted in the increase in the NO<sub>x</sub> emissions by 24.8 tons per year and decrease in VOC emission by 50.09 tons per year. After the installation of one (1) 4,550 scfm open flare, the source was still a minor source for Emissions Offset.

The source was issued a construction permit, CP-141-3483, on July 5, 1994 to install four (4) engine/generator sets for energy recovery from landfill gas. The emissions increase due to the installation of four (4) engine/generator sets were 110 tons per year of NO<sub>x</sub> and 2.28 tons per year of VOC. To render Emissions Offset not applicable, the source took a power generation limit of 39.27 million BHP-hrs per 12 consecutive month period, the engine timing shall not exceed 20 degrees before top dead center (BTDC) and the oxygen content in the exhaust gas shall be at least six (6) percent. This power generation limitation limited the NO<sub>x</sub> emissions to 99.6 tons per year. Therefore, the requirements of Emission Offset were not applicable.

The source was issued First Significant Permit Modification No. 141-19803-00051 on June 9, 2005. The significant modification is to remove 40 CFR 60, Subpart WWW requirements for the four (4) caterpillar engines/generator sets. There were no changes in the emissions from the entire source due to the significant permit modification.

The source was issued Administrative Amendment No. 141-21158-00051 on June 23, 2005 to install one (1) landfill gas fired tipper engine, identified as TIPPER1 and rated at 115 horsepower, and four (4) passive vent flares, each with a capacity to process 50 scfm of landfill gas. The potential emissions NO<sub>x</sub> and CO from TIPPER1 and four (4) vent flares combined were 8.71 and 23.06 tons per year, respectively, which are less than the Emission Offset significant modification thresholds. Therefore, this modification was not subject to this rule.

The source was issued Significant Permit Modification No. 141-21776-00051 on March 2, 2006 to remove the compliance monitoring requirements pursuant to 40 CFR 60.756(c)(2) that are included in the Part 70 permit (T141-7477-00051) and the associated record keeping and reporting requirements that are included in the Part 70 permit. There were no changes in the emissions from the entire source due to the significant permit modification.

The source was issued Significant Source Modification No. 141-23430-00051 on April 2, 2007 and Significant Permit Modification No. 141-23465-00051 on April 20, 2007 to install four (4) new engine /generator sets, identified as ES5, ES6, ES7, and ES8, and some additional insignificant activities.

Prior to the issuance of these permits, the source conducted stack tests on two (2) of the existing landfill gas engines (EG1 and EG3) on April 20, 2006 to obtain information on emissions of NO<sub>x</sub> and CO. The tests yielded a worst-case NO<sub>x</sub> emission factor for EG3 of 1.35 grams per hp-hr. Based on this emission factor, the unrestricted potential to emit NO<sub>x</sub> from the four (4) existing engine/generator sets (EG1, EG2, EG3, and EG4) was 59.74 tons per year of NO<sub>x</sub>. Source-wide unrestricted NO<sub>x</sub> and VOC emissions were each less than 100 tons per year, making this an existing minor source under Emission Offset.

Because of the stack test results, the previous power generation limit and associated oxygen content and engine timing limits for the four (4) existing engine/generator sets to limit NO<sub>x</sub> emissions to less than 100 tons per year are no longer required and were removed from the Part 70 permit in Significant Source Modification No. 141-23430-00051, issued on April 2, 2007 and Significant Permit Modification No. 141-23465-00051, issued on April 20, 2007. The following limit was added to the Part 70 permit to ensure that source-wide NO<sub>x</sub> emissions from the existing units are less than 100 tons per year so that this modification was a minor modification to an existing minor source under Emission Offset:

- (a) Total emissions of NO<sub>x</sub> from the four (4) existing landfill gas engine/generator sets (EG1, EG2, EG3, and EG4) combined shall not exceed 16.10 pounds per hour. Based on operation at a maximum of 8,760 hours per year, this is equivalent to 70.51 tons of NO<sub>x</sub> per year from the engine/generator sets for a source-wide potential to emit of less than 100 tons per year.

After the above modification to add the four (4) new engine/generator sets, the source-wide NO<sub>x</sub> emissions exceeded 100 tons per year making this a major source under 326 IAC 2-3 (Emission Offset). However, now that St. Joseph county has been re-designated as attainment for the 8-hour ozone standard, this source is no longer a major source under 326 IAC 2-3 (Emission Offset).

#### 326 IAC 2-6 (Emission Reporting)

This source is subject to 326 IAC 2-6 (Emission Reporting) because it is required to have an operating permit under 326 IAC 2-7, Part 70 program. Pursuant to this rule, the Permittee shall submit an emission statement certified pursuant to the requirements of 326 IAC 2-6. In accordance with the compliance schedule specified in 326 IAC 2-6-3, an emission statement must be submitted triennially by July 1 beginning in 2004 and every 3 years after. Therefore, the next emission statement for this source must be submitted by July 1, 2007. The emission statement shall contain, at a minimum, the information specified in 326 IAC 2-6-4.

### 326 IAC 5-1 (Opacity Limitations)

Pursuant to 326 IAC 5-1-2 (Opacity Limitations), except as provided in 326 IAC 5-1-3 (Temporary Alternative Opacity Limitations), opacity shall meet the following, unless otherwise stated in the permit:

- (a) Opacity shall not exceed an average of forty percent (40%) in any one (1) six (6) minute averaging period as determined in 326 IAC 5-1-4.
- (b) Opacity shall not exceed sixty percent (60%) for more than a cumulative total of fifteen (15) minutes (sixty (60) readings as measured according to 40 CFR 60, Appendix A, Method 9 or fifteen (15) one (1) minute nonoverlapping integrated averages for a continuous opacity monitor) in a six (6) hour period.

Note that this source is not located in the area north of Kern Road and east of Pine Road in St. Joseph county which would make it subject to the opacity limitations in 326 IAC 5-1-2(2).

### 326 IAC 6-4-1 (Fugitive Dust Emissions)

Pursuant to 326 IAC 6-4-1, the source shall not allow fugitive dust to escape beyond the property line or boundaries of the property, right-of-way, or easement on which the source is located, in a manner that would violate 326 IAC 6-4 (Fugitive Dust Emissions).

### 326 IAC 6-5 (Fugitive Particulate Matter Emission Limitations)

This source is not subject to 326 IAC 6-5 for fugitive particulate matter emissions. Pursuant to 326 IAC 6-5, for any new sources constructed after December 13, 1985, a fugitive dust control plan must be submitted, reviewed and approved. The source was constructed in 1981, therefore the requirements of 326 IAC 6-5 do not apply.

## **State Rule Applicability – Individual Facilities**

### 326 IAC 2-4.1 (Major Sources of Hazardous Air Pollutants (HAP))

The operation of this municipal solid waste landfill will emit less than 10 tons per year of a single HAP or 25 tons per year of a combination of HAPs. Therefore, 326 IAC 2-4.1 does not apply.

### 326 IAC 6-3-2 ( Particulate Emission Limitations for Manufacturing Processes)

The brazing equipment, cutting torches, soldering equipment, and welding equipment listed under the insignificant activities are not subject to the requirements of 326 IAC 6-3-2 because the welding, soldering and cutting operations at the source are used only for equipment repair and maintenance. They are not used for the production of landfill gas and are operated on an as-needed basis. Therefore, these operations do not meet the definition of a manufacturing process under 326 IAC 6-3-1.5, Definitions.

### 326 IAC 6.5-1 (Particulate Matter Limitations Except Lake County)

This rule applies to sources located in Clark, Dearborn, Dubois, Howard, Marion, St. Joseph, Vanderburgh, Vigo, or Wayne counties that are specifically listed in the rule or have the potential to emit of 100 tons per year or more of particulate matter or actual emissions of 10 tons per year or more of particulate matter. This source, which is located in St. Joseph county, has a potential to emit of particulate matter of less than 100 tons per year but has actual particulate matter emissions greater than 10 tons per year. Therefore this source is subject to this rule. Pursuant to this rule, particulate matter emissions from each of the facilities at this source that emit particulate matter shall not exceed seven-hundredths (0.07) gram per dry standard cubic meter (g/dscm) (three hundredths (0.03) grain per dry standard cubic foot (dscf)). The facilities that emit particulate matter that are subject to this rule are the eight (8) engine/generators, the open flare, the TIPPER1 engine, and the three (3) passive vent flares. There are no other applicable requirements for these units pursuant to this rule.

326 IAC 8-3-2 (Cold Cleaner Operations)

Pursuant to 326 IAC 8-3-2 (Cold Cleaner Operations), for cold cleaning operations (20 gallon parts washing station) constructed after January 1, 1980, the Permittee shall:

- (a) Equip the cleaner with a cover;
- (b) Equip the cleaner with a facility for draining cleaned parts;
- (c) Close the degreaser cover whenever parts are not being handled in the cleaner;
- (d) Drain cleaned parts for at least fifteen (15) seconds or until dripping ceases;
- (e) Provide a permanent, conspicuous label summarizing the operation requirements;
- (f) Store waste solvent only in covered containers and not dispose of waste solvent or transfer it to another party, in such a manner that greater than twenty percent (20%) of the waste solvent (by weight) can evaporate into the atmosphere.

326 IAC 8-3-5(a) (Cold Cleaner Degreaser Operation and Control)

(a) Pursuant to 326 IAC 8-3-5(a) (Cold Cleaner Degreaser Operation and Control), for cold cleaner degreaser operations without remote solvent reservoirs (20 gallon parts washing station) constructed after July 1, 1990, the Permittee shall ensure that the following control equipment requirements are met:

- (1) Equip the degreaser with a cover. The cover must be designed so that it can be easily operated with one (1) hand if:
  - (A) The solvent volatility is greater than two (2) kiloPascals (fifteen (15) millimeters of mercury or three-tenths (0.3) pounds per square inch) measured at thirty-eight degrees Celsius (38°C) (one hundred degrees Fahrenheit (100°F));
  - (B) The solvent is agitated; or
  - (C) The solvent is heated.
- (2) Equip the degreaser with a facility for draining cleaned articles. If the solvent volatility is greater than four and three-tenths (4.3) kiloPascals (thirty-two (32) millimeters of mercury or six-tenths (0.6) pounds per square inch) measured at thirty-eight degrees Celsius (38°C) (one hundred degrees Fahrenheit (100°F)), then the drainage facility must be internal such that articles are enclosed under the cover while draining. The drainage facility may be external for applications where an internal type cannot fit into the cleaning system.
- (3) Provide a permanent, conspicuous label which lists the operating requirements outlined in subsection (b).
- (4) The solvent spray, if used, must be a solid, fluid stream and shall be applied at a pressure which does not cause excessive splashing.
- (5) Equip the degreaser with one (1) of the following control devices if the solvent volatility is greater than four and three-tenths (4.3) kiloPascals (thirty-two (32) millimeters of mercury or six-tenths (0.6) pounds per square inch) measured at thirty-eight degrees Celsius (38°C) (one hundred degrees Fahrenheit (100°F)), or if the solvent is heated to a temperature greater than forty-eight and nine-tenths degrees Celsius (48.9°C) (one hundred twenty degrees Fahrenheit (120°F)):

- (A) A freeboard that attains a freeboard ratio of seventy-five hundredths (0.75) or greater.
  - (B) A water cover when solvent is used is insoluble in, and heavier than, water.
  - (C) Other systems of demonstrated equivalent control such as a refrigerated chiller of carbon adsorption. Such systems shall be submitted to the U.S. EPA as a SIP revision.
- (b) Pursuant to 326 IAC 8-3-5(b) (Cold Cleaner Degreaser Operation and Control), the owner or operator of a cold cleaning facility construction of which commenced after July 1, 1990, shall ensure that the following operating requirements are met:
- (1) Close the cover whenever articles are not being handled in the degreaser.
  - (2) Drain cleaned articles for at least fifteen (15) seconds or until dripping ceases.
  - (3) Store waste solvent only in covered containers and prohibit the disposal or transfer of waste solvent in any manner in which greater than twenty percent (20%) of the waste solvent by weight could evaporate.

326 IAC 8-8.1 (Municipal Solid Waste Landfills Not Located in Clark, Floyd, Lake, and Porter Counties)  
The municipal solid waste landfill is subject to 326 IAC 8-8.1 (Municipal Solid Waste Landfills) which incorporates by reference 40 CFR 60.751, 60.752, 60.753, 60.754, 60.755, 60.756, 60.757, 60.758, and 60.759 of Subpart WWW because the municipal solid waste landfill accepted waste since November 8, 1987 and was constructed prior to May 30, 1991 and is not located in Lake, Porter, Floyd, or Clark Counties. Compliance with the requirements of the NSPS, 40 CFR 60, Subpart WWW included under the Federal Rule Applicability section of this TSD will satisfy the requirements of this rule.

326 IAC 20-67 (Municipal Solid Waste Landfills)  
The municipal solid waste landfill is subject to 326 IAC 20-67 which incorporates by reference 40 CFR 63, Subpart AAAA. Compliance with the requirements of the NESHAP, 40 CFR 63, Subpart AAAA included under the Federal Rule Applicability section of this TSD will satisfy the requirements of this rule.

### **Compliance Determination and Monitoring Requirements**

Permits issued under 326 IAC 2-7 are required to ensure that sources can demonstrate compliance with all applicable state and federal rules on a continuous basis. All state and federal rules contain compliance provisions, however, these provisions do not always fulfill the requirement for a continuous demonstration. When this occurs IDEM, OAQ, in conjunction with the source, must develop specific conditions to satisfy 326 IAC 2-7-5. As a result, Compliance Determination Requirements are included in the permit. The Compliance Determination Requirements in Section D of the permit are those conditions that are found directly within state and federal rules and the violation of which serves as grounds for enforcement action.

If the Compliance Determination Requirements are not sufficient to demonstrate continuous compliance, they will be supplemented with Compliance Monitoring Requirements, also in Section D of the permit. Unlike Compliance Determination Requirements, failure to meet Compliance Monitoring conditions would serve as a trigger for corrective actions and not grounds for enforcement action. However, a violation in relation to a compliance monitoring condition will arise through a source's failure to take the appropriate corrective actions within a specific time period.

The compliance determination requirements applicable to this source are as follows:

- (a) The four (4) engine/generator sets (EG1, EG2, EG3, and EG4) have applicable compliance determination conditions as specified below:
  - (1) During the period between April 2011 and October 2011, in order to demonstrate compliance with the NOx limit to render 326 IAC 2-3 (Emission Offset) not applicable, the Permittee shall perform NOx testing on at least one (1) of the four (4) landfill gas engine/generator sets identified as EG1, EG2, EG3, and EG4 utilizing methods as approved by the Commissioner. This test shall be repeated at least once every five (5) years from the date of this valid compliance demonstration. Testing shall be conducted in accordance with Section C-Performance Testing.
- (b) The municipal solid waste landfill has applicable compliance determination conditions as specified below:
  - (1) The source shall comply with all applicable testing requirements pursuant to the NSPS, 40 CFR 60.754, Subpart WWW and the NESHAP, 40 CFR 63.1960, Subpart AAAA.

The compliance monitoring requirements applicable to this source are as follows:

- (a) The municipal solid waste landfill shall comply with all applicable compliance monitoring requirements pursuant to the NSPS, 40 CFR 60.755 and 60.756, Subpart WWW and the NESHAP, 40 CFR 63.1960, Subpart AAAA.

These monitoring conditions are necessary to demonstrate compliance with 40 CFR 60, Subpart WWW (Standards of Performance for Municipal Solid Waste Landfills), 40 CFR 63, Subpart AAAA (National Emission Standards for Municipal Solid Waste Landfills) and 326 IAC 2-7 (Part 70).

## **Recommendation**

The staff recommends to the Commissioner that the Part 70 Operating Permit Renewal be approved. This recommendation is based on the following facts and conditions:

Unless otherwise stated, information used in this review was derived from the application and additional information submitted by the applicant.

An application for the purposes of this review was received on October 14, 2003. Additional information was received April 5, 2005, April 15, 2005, and June 19, 2006.

## **Conclusion**

The operation of this stationary municipal solid waste landfill shall be subject to the conditions of the attached Part 70 Operating Permit Renewal No. 141-18138-00051.

Entire Source Emissions

Company Name: Prairie View Recycling and Disposal Facility  
 Address City IN Zip: 15505 Shively Road, Wyatt, IN 46595  
 Part 70 Permit No.: 141-18138-00051  
 Reviewer: TE/EVP

Potential Uncontrolled Emissions																			
Emission Unit	NO <sub>x</sub>		CO		SO <sub>2</sub>		PM <sub>10</sub>		TSP		NMOC		VOC		HAP (Total)		HAP (Single)		
	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	
Engines	27.28	119.47	51.93	227.44	0.77	3.39	3.80	16.65	3.80	16.65	0.15	0.68	0.06	0.27	0.58	2.53	0.14	0.63	HCl
Landfill Fugitive	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	27.05	118.50	10.55	46.21	4.97	21.75	1.78	7.81	Toluene
Open Flare	4.78	20.94	26.01	113.91	0.70	3.06	0.45	1.99	0.45	1.99	0.14	0.61	0.05	0.24	0.16	0.68	0.13	0.56	HCl
TIPPER1 Engine	1.75	7.66	0.76	3.35	0.23	1.02	0.25	1.09	0.25	1.09	0.00	0.00	0.29	1.27	Negl.	Negl.	Negl.	Negl.	
Three (3) Passive Vent Flares	0.18	0.79	3.38	14.78	0.08	0.34	0.08	0.34	0.08	0.34	0.02	0.08	0.01	0.03	0.00	0.00	0.00	0.00	
Fugitive Unpaved Roads	0.00	0.00	0.00	0.00	0.00	0.00	20.77	90.98	76.95	337.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Fugitive Paved Roads	0.00	0.00	0.00	0.00	0.00	0.00	2.59	11.36	13.30	58.25	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Total	33.99	148.86	82.07	359.48	1.79	7.82	27.95	122.41	94.83	415.35	27.37	119.87	10.96	48.02	5.70	24.96	1.78	7.81	Toluene

Potential Controlled Emissions																			
Emission Unit	NO <sub>x</sub>		CO		SO <sub>2</sub>		PM <sub>10</sub>		TSP		NMOC		VOC		HAP (Total)		HAP (Single)		
	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	
Engines	27.28	119.47	51.93	227.44	0.77	3.39	3.80	16.65	3.80	16.65	0.15	0.68	0.06	0.27	0.58	2.53	0.14	0.63	HCl
Landfill Fugitive	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	7.17	31.40	2.80	12.25	4.97	21.75	1.78	7.81	Toluene
Open Flare	4.78	20.94	26.01	113.91	0.70	3.06	0.45	1.99	0.45	1.99	0.14	0.61	0.05	0.24	0.16	0.68	0.13	0.56	HCl
TIPPER1 Engine	1.75	7.66	0.76	3.35	0.23	1.02	0.25	1.09	0.25	1.09	0.00	0.00	0.29	1.27	Negl.	Negl.	Negl.	Negl.	
Three (3) Passive Vent Flares	0.18	0.79	3.38	14.78	0.08	0.34	0.08	0.34	0.08	0.34	0.02	0.08	0.01	0.03	0.00	0.00	0.00	0.00	
Fugitive Unpaved Roads	0.00	0.00	0.00	0.00	0.00	0.00	4.15	18.20	15.39	67.41	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Fugitive Paved Roads	0.00	0.00	0.00	0.00	0.00	0.00	0.52	2.27	2.66	11.65	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Total	33.99	148.86	82.07	359.48	1.78	7.82	9.25	40.54	22.63	99.12	7.48	32.77	3.21	14.05	5.70	24.96	1.78	7.81	Toluene

**Equipment Data**

**Company Name:** Prairie View Recycling and Disposal Facility  
**Address City IN Zip:** 15505 Shively Road, Wyatt, IN 46595  
**Part 70 Permit No.:** 141-18138-00051  
**Reviewer:** TE/EVP

**Standard Conditions, Constants, and Typical Values**

Category	Value	Equivalent
Standard Temperature <sup>a</sup>	60 °F	520 °R
Universal Gas Constant	0.7302 atm-ft <sup>3</sup> /lb-mol°R	
Pressure <sup>a</sup>	1 atm	
Methane Heating Value <sup>b</sup>	1,000 Btu/ft <sup>3</sup>	
LFG Methane Component <sup>c</sup>	55%	
LFG Typical Heating Value	550 Btu/ft <sup>3</sup>	
LFG Temperature <sup>c</sup>	100 °F	560 °R
LFG Moisture <sup>c</sup>	8%	

<sup>a</sup>Industrial STP (60°F, 30.00 in. Hg, 1 atm)

<sup>b</sup>Typical

<sup>c</sup>Assumed

<sup>d</sup>Source: *Professional Engineering Registration Program*, pg. 23-9

**Table. Fuel & Equipment - Ground Flare**

Ground Flare Information	Value	Equivalent
LFG inlet flow, standard <sup>a</sup>	2,130 scfm	
LFG Inlet Flow, dry standard	1,960 dscfm	
Heat Input	70.3 MMBtu/hr	
Design Flare Operating Temperature	1,400 °F	1,860 °R
Flare Tip Flow, standard	2,130 scfm	
Flare Tip Flow, actual	7,619 acfm	
Flare Tip Diameter <sup>a</sup>	1.0 ft	
Flare Tip Exhaust Velocity	9,706 ft/min	161.8 ft/s
Flare Tip Height, above local grade <sup>b</sup>	30 ft	

<sup>a</sup>Source: Flare manufacturer

**Criteria Pollutants Emissions from Flare**

**Company Name:** Prairie View Recycling and Disposal Facility  
**Address City IN Zip:** 15505 Shively Road, Wyatt, IN 46595  
**Part 70 Permit No.:** 141-18138-00051  
**Reviewer:** TE/EVP

**Criteria Pollutant Emissions - One (1) Open Flare**

Annual Operating Hours	8,760 Hours
LFG inlet flow, standard	2,130 scfm
Heat Input	70.3 MMBtu/hr

**SO<sub>2</sub> Emission Rate**

SO <sub>2</sub> concentration in exhaust gas	32.40 ppmv	
SO <sub>2</sub> emission rate	0.70 lb/hr	3.06 ton/yr
SO <sub>2</sub> molecular weight	64.07	

**PM<sub>10</sub> Emission Rate**

PM emission factor <sup>d</sup>	17 lb/MM dscf CH <sub>4</sub>	
PM emission rate	0.45 lb/hr	1.99 ton/yr

**NO<sub>2</sub> Emission Rate**

NO <sub>2</sub> emission factor <sup>e</sup>	0.068 lb/MMBtu	
NO <sub>2</sub> emission rate	4.78 lb/hr	20.94 ton/yr

**CO Emission Rate**

CO emission factor <sup>e</sup>	0.37 lb/MMBtu	
CO emission rate	26.01 lb/hr	113.91 ton/yr

**NMOC Emission Rate**

NMOC conc inlet gas <sup>f</sup>	600 ppmv	
MW hexane	86.18 lb/lb-mol	
destruction efficiency	99.20%	
mass NMOC inlet gas	17.4 lb/hr	76.23 ton/yr
NMOC emission rate	0.14 lb/hr	0.61 ton/yr

**(Uncontrolled)**  
**(Controlled)**

**VOC Emission Rate**

NMOC conc inlet gas <sup>f</sup>	600 ppmv	
VOC fraction of NMOC <sup>f</sup>	39%	
VOC concentration in inlet gas	234 ppmv	
MW hexane	86.18 lb/lb-mol	
mass VOC inlet gas	6.8 lb/hr	
destruction efficiency	99.20%	
VOC Emission Rate	7	29.73 ton/yr
VOC emission rate	0.05 lb/hr	0.24 ton/yr

**(Uncontrolled)**  
**(Controlled)**

Note: References to AP-42 are taken from, US Environmental Protection Agency, *Compilation of Air Pollutant Emission Factors, Volume I. Stationary Point and Area Sources, 5th Ed.* (unless otherwise noted)

<sup>a</sup>Source: US EPA. AP-42, Tables 2.4-1 and 2.4-3, November 1998.

<sup>b</sup>Source: US EPA. AP-42, Table 2.4-3, November 1998.

<sup>c</sup>AP-42 gives ranges for control efficiencies. Control efficiencies for halogenated species range from 91 to 99.7 percent. The upper end of the range is used here resulting in maximum calculated emissions of SO<sub>2</sub>.

<sup>d</sup>Source: US EPA. AP-42, Table 2.4-5, November 1998.

<sup>e</sup>Source: Typical value provided by LFG Specialties Inc.

<sup>f</sup>Source: The LANDGEM default NMOC concentration.

**326 IAC 6.5-1-2 Compliance Calculation**

The following calculations determine compliance with 326 IAC 6.5-1-2 which limits stack emissions from the open flare to 0.03 gr/dscf:

$$\frac{1.99 \text{ ton/yr}^*}{525,600 \text{ min/yr}^*} \times \frac{2000 \text{ lb/ton}^*}{1,960 \text{ dscf/min}} \times 7000 \text{ gr/lb} = 0.027 \text{ gr/dscf} \quad (\text{Will be able to comply})$$

Allowable particulate emissions under 326 IAC 6.5-1-2 equate to 2.21 tons per year. 0.50 lbs/hr

**Sample Calculations for Flare**

**Company Name:** Prairie View Recycling and Disposal Facility  
**Address City IN Zip:** 15505 Shively Road, Wyatt, IN 46595  
**Part 70 Permit No.:** 141-18138-00051  
**Reviewer:** TE/EVP

**Sample Calculations****Standard Conditions and Constants**

$$^{\circ}\text{R} = ^{\circ}\text{F} + 460$$

standard temperature = 60  $^{\circ}\text{F}$

standard pressure = 1 atm

Universal gas constant (R) = 0.7302 atm-ft<sup>3</sup>/lb-mol $^{\circ}\text{R}$

**Flow**

dscfm = scfm\*(1-%moisture)

$$\text{acfm} = \text{scfm} * (\text{actual temp}[^{\circ}\text{R}] / (\text{standard temp}[^{\circ}\text{R}]) * ((\text{standard press}[\text{atm}] / (\text{actual press} [\text{atm}])))$$

**CO and NO<sub>x</sub> Emissions**

$$(\text{lb/MMbtu}) * (\text{MMbtu/hr}) = \text{lb/hr}$$

**SO<sub>2</sub> Emissions**

typically, 86% to 99.7% of sulfur compounds convert to SO<sub>2</sub> during combustion

$$\{(\text{scfm}) * (60 \text{ min/hr}) * (\text{total sulfur concentration} [\text{ppmv}] * (1.0\text{E-}06)) * (1 - \text{control efficiency}) * (\text{MW SO}_2)\} / ((\text{R}) * (\text{T})) = \text{lb/hr}$$

**PM<sub>10</sub> Emissions**

$$(\text{dscfm}) * (\text{CH}_4 \text{ component}) * (1\text{E-}6 \text{ MMscf/scf}) * (\text{lb PM/MMscf CH}_4) * (60 \text{ min/hr}) = \text{lb/hr}$$

**VOC Emissions**

$$\{(\text{scfm} * 60 \text{ min/hr} * \text{concentration}_{\text{compound}} [\text{ppmv}] * 1.0\text{E-}06 * \text{MW}_{\text{compound}})\} / ((\text{R}) * (\text{T})) * (1 - \text{control efficiency}) = \text{lb/hr}$$

OR

VOCs are 39 percent of NMOC, as prescribed in AP-42

$$\text{VOC concentration} [\text{ppmv}] = \text{NMOC concentration} [\text{as hexane}] * 39\%$$

flare and/or engines typically combust 99.2% of VOCs

$$\{(\text{scfm} * 60 \text{ min/hr} * \text{concentration}_{\text{hexane}} [\text{ppmv}] * 1.0\text{E-}06 * \text{MW}_{\text{hexane}})\} / ((\text{R}) * (\text{T})) * (0.39) = \text{lb/hr}$$

**LFG Compound Emissions**

$$\{(\text{scfm} * 60 \text{ min/hr} * \text{concentration}_{\text{compound}} [\text{ppmv}] * 1.0\text{E-}06 * \text{MW}_{\text{compound}})\} / ((\text{R}) * (\text{T})) * (1 - \text{control efficiency})$$

**HCl Emissions**

typically, 86% to 99.7% of chlorine compounds convert to HCl during combustion

(concentration<sub>compound</sub> [ppm]) \* (control efficiency) \* (no. of chlorine atoms) = HCl concentration [ppm] in outlet gas from each compound

$$\{\text{HCl concentration}_{\text{each compound}} [\text{ppm}] * 1.0\text{E-}06 * \text{scfm} * \text{MW}_{\text{HCl}}\} / ((\text{R}) * (\text{T})) * (60 \text{ min/hr}) = \text{lb/hr}$$

OR

$$\{(\text{scfm}) * (60 \text{ min/hr}) * (\text{HCl outlet concentration per AP-42} [\text{ppmv}] * 1.0\text{E-}06) * (1 - \text{control efficiency}) * (\text{MW})\} / ((\text{R}) * (\text{T})) = \text{lb/hr}$$

**Prairie View RDF Utility Flare Hazardous Air Pollutants**

**Company Name:** Prairie View Recycling and Disposal Facility  
**Address City IN Zip:** 15505 Shively Road, Wyatt, IN 46595  
**Part 70 Permit No.:** 141-18138-00051  
**Reviewer:** TE/EVP

*Note: Information on control efficiencies (and highlighted pollutant concentrations) were taken from Section 2.4 of AP-42  
 Note: Information on pollutant concentrations (not highlighted) were taken from the Waste Industry Air Coalition*

Maximum Gas Flow Rate: 2,130 scfm  
 127800 scfh  
 Maximum Operating Hours 8760 hours

	Molecular Weight	Conc., ppmv	CAS No.
1,1,1-Trichloroethane	133.41	0.48	71556
1,1,2,2-Tetrachloroethane	167.85	1.1	79345
1,1-Dichloroethane	98.97	2.4	75343
1,1-Dichloroethene	96.94	0.2	75354
1,2-Dichloroethane	98.96	0.41	107062
1,2-Dichloropropane	112.99	0.18	78875
Acrylonitrile	53.06	6.3	107131
Benzene	78.11	1.9	71432
Carbon disulfide	76.13	0.58	75150
Carbon tetrachloride	153.84	0.004	56235
Carbonyl sulfide	60.07	0.49	463581
Chlorobenzene	112.56	0.25	108907
Chloroethane	64.52	1.3	75003
Dichlorobenzene	147	0.21	106467
Chloroform	119.39	0.03	67663
Dichloromethane	84.94	14	75092
Ethylbenzene	106.16	4.6	100414
Ethylene dibromide	187.88	0.001	
Hexane	86.18	6.6	110543
Mercury	200.61	0.00029	7439976
Methyl isobutyl ketone	100.16	1.9	108101
Perchloroethylene	165.83	3.7	127184
Toluene	92.13	39	108883
Trichloroethylene	131.4	2.8	79016
Vinyl chloride	62.5	7.3	75014
Xylenes	106.16	12	1330207
HCl	36.5	10.5	7647010

Control Efficiency 98.00% For Halogenated Species  
 Control Efficiency 99.70% For Non Halogenated Species

**Calculate Actual Emissions for Hazardous Air Pollutants**

Pollutant	Concentration (ppm HAP)	Molecular Weight	Flow (scfh)	Hours	Conversion Factor	Actual Emissions (tons/year)	Actual Emissions (lbs/hour)
1,1,1-Trichloroethane	0.48	133.41	127,800	8760	$\frac{1 \text{ T} \times}{2000 \text{ lbs}} (1 - .98) =$	0.0019	0.0004
1,1,2,2-Tetrachloroethane	1.1	167.85	127,800	8760	$\frac{1 \text{ T} \times}{2000 \text{ lbs}} (1 - .98) =$	0.0054	0.0012
1,1-Dichloroethane	2.4	98.97	127,800	8760	$\frac{1 \text{ T} \times}{2000 \text{ lbs}} (1 - .98) =$	0.0069	0.0016
1,1-Dichloroethene	0.2	96.94	127,800	8760	$\frac{1 \text{ T} \times}{2000 \text{ lbs}} (1 - .98) =$	0.0006	0.0001
1,2-Dichloroethane	0.41	98.96	127,800	8760	$\frac{1 \text{ T} \times}{2000 \text{ lbs}} (1 - .98) =$	0.0012	0.0003
1,2-Dichloropropane	0.18	112.99	127,800	8760	$\frac{1 \text{ T} \times}{2000 \text{ lbs}} (1 - .98) =$	0.0006	0.0001

<b>Acrylonitrile</b>											
6.3	ppm HAP x	53.06	mol. Wt. *	127,800 scfh x	8760	hrs x	1 T x	(1 - .997) =	actual	=	
1,000,000		385.4	scf/lb-mole			year	2000 lbs		0.0015 tons/year		0.0003 lbs/hour
<b>Benzene</b>											
1.9	ppm HAP x	78.11	mol. Wt. *	127,800 scfh x	8760	hrs x	1 T x	(1 - .997) =	actual	=	
1,000,000		385.4	scf/lb-mole			year	2000 lbs		0.0006 tons/year		0.0001 lbs/hour
<b>Carbondsulfide</b>											
0.58	ppm HAP x	76.13	mol. Wt. *	127,800 scfh x	8760	hrs x	1 T x	(1 - .997) =	actual	=	
1,000,000		385.4	scf/lb-mole			year	2000 lbs		0.0002 tons/year		0.0000 lbs/hour
<b>Carbontetrachloride</b>											
0.004	ppm HAP x	153.84	mol. Wt. *	127,800 scfh x	8760	hrs x	1 T x	(1 - .98) =	actual	=	
1,000,000		385.4	scf/lb-mole			year	2000 lbs		0.0000 tons/year		0.0000 lbs/hour
<b>Carbonylsulfide</b>											
0.49	ppm HAP x	60.07	mol. Wt. *	127,800 scfh x	8760	hrs x	1 T x	(1 - .997) =	actual	=	
1,000,000		385.4	scf/lb-mole			year	2000 lbs		0.0001 tons/year		0.0000 lbs/hour
<b>Chlorobenzene</b>											
0.25	ppm HAP x	112.56	mol. Wt. *	127,800 scfh x	8760	hrs x	1 T x	(1 - .98) =	actual	=	
1,000,000		385.4	scf/lb-mole			year	2000 lbs		0.0008 tons/year		0.0002 lbs/hour
<b>Chloroethane</b>											
1.3	ppm HAP x	64.52	mol. Wt. *	127,800 scfh x	8760	hrs x	1 T x	(1 - .98) =	actual	=	
1,000,000		385.4	scf/lb-mole			year	2000 lbs		0.0024 tons/year		0.0006 lbs/hour
<b>Dichlorobenzene</b>											
0.21	ppm HAP x	147	mol. Wt. *	127,800 scfh x	8760	hrs x	1 T x	(1 - .98) =	actual	=	
1,000,000		385.4	scf/lb-mole			year	2000 lbs		0.0009 tons/year		0.0002 lbs/hour
<b>Chloroform</b>											
0.03	ppm HAP x	119.39	mol. Wt. *	127,800 scfh x	8760	hrs x	1 T x	(1 - .98) =	actual	=	
1,000,000		385.4	scf/lb-mole			year	2000 lbs		0.0001 tons/year		0.0000 lbs/hour
<b>Dichloromethane</b>											
14	ppm HAP x	84.94	mol. Wt. *	127,800 scfh x	8760	hrs x	1 T x	(1 - .98) =	actual	=	
1,000,000		385.4	scf/lb-mole			year	2000 lbs		0.0345 tons/year		0.0079 lbs/hour
<b>Ethylbenzene</b>											
4.6	ppm HAP x	106.16	mol. Wt. *	127,800 scfh x	8760	hrs x	1 T x	(1 - .997) =	actual	=	
1,000,000		385.4	scf/lb-mole			year	2000 lbs		0.0021 tons/year		0.0005 lbs/hour
<b>Ethylene Dibromide</b>											
0.001	ppm HAP x	187.88	mol. Wt. *	127,800 scfh x	8760	hrs x	1 T x	(1 - .997) =	actual	=	
1,000,000		385.4	scf/lb-mole			year	2000 lbs		0.0000 tons/year		0.0000 lbs/hour
<b>Hexane</b>											
6.6	ppm HAP x	86.18	mol. Wt. *	127,800 scfh x	8760	hrs x	1 T x	(1 - .997) =	actual	=	
1,000,000		385.4	scf/lb-mole			year	2000 lbs		0.0025 tons/year		0.0006 lbs/hour
<b>Mercury</b>											
0.00029	ppm HAP x	200.61	mol. Wt. *	127,800 scfh x	8760	hrs x	1 T x	(1 - .997) =	actual	=	
1,000,000		385.4	scf/lb-mole			year	2000 lbs		0.0000 tons/year		0.0000 lbs/hour
<b>Methyl isobutyl ketone</b>											
1.9	ppm HAP x	100.16	mol. Wt. *	127,800 scfh x	8760	hrs x	1 T x	(1 - .997) =	actual	=	
1,000,000		385.4	scf/lb-mole			year	2000 lbs		0.0008 tons/year		0.0002 lbs/hour
<b>Perchloroethylene</b>											
3.7	ppm HAP x	165.83	mol. Wt. *	127,800 scfh x	8760	hrs x	1 T x	(1 - .98) =	actual	=	
1,000,000		385.4	scf/lb-mole			year	2000 lbs		0.0178 tons/year		0.0041 lbs/hour
<b>Toluene</b>											
39	ppm HAP x	92.13	mol. Wt. *	127,800 scfh x	8760	hrs x	1 T x	(1 - .997) =	actual	=	
1,000,000		385.4	scf/lb-mole			year	2000 lbs		0.0157 tons/year		0.0036 lbs/hour
<b>Trichloroethylene</b>											
2.8	ppm HAP x	131.4	mol. Wt. *	127,800 scfh x	8760	hrs x	1 T x	(1 - .98) =	actual	=	
1,000,000		385.4	scf/lb-mole			year	2000 lbs		0.0107 tons/year		0.0024 lbs/hour
<b>VinylChloride</b>											
7.3	ppm HAP x	62.5	mol. Wt. *	127,800 scfh x	8760	hrs x	1 T x	(1 - .98) =	actual	=	
1,000,000		385.4	scf/lb-mole			year	2000 lbs		0.0133 tons/year		0.0030 lbs/hour
<b>Xylenes</b>											
12	ppm HAP x	106.16	mol. Wt. *	127,800 scfh x	8760	hrs x	1 T x	(1 - .997) =	actual	=	
1,000,000		385.4	scf/lb-mole			year	2000 lbs		0.0056 tons/year		0.0013 lbs/hour
<b>HCl (HCl is a product of combustion and therefore does not have a control efficiency)</b>											
10.5	ppm HAP x	36.5	mol. Wt. *	127,800 scfh x	8760	hrs x	1 T x	(1 - 0) =	actual	=	
1,000,000		385.4	scf/lb-mole			year	2000 lbs		0.5566 tons/year		0.1271 lbs/hour
<b>TOTAL:</b>									<b>0.68 tons/year</b>		<b>0.16 lbs/hour</b>

**Total emissions from Open Flare**

**Company Name:** Prairie View Recycling and Disposal Facility  
**Address City IN Zip:** 15505 Shively Road, Wyatt, IN 46595  
**Part 70 Permit No.:** 141-18138-00051  
**Reviewer:** TE/EVP

**Potential Emissions Summary - One (1) Open Flare identified as Flare No. 2**

Emission Unit ID No.	Description	Total Potential Emissions from Flare No. 2																		
		LFG Flow	NO <sub>x</sub>		CO		SO <sub>2</sub>		PM <sub>10</sub>		TSP		NMOC		VOC		HAP (Total)		HAP (Single)	
		(scfm)	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr
Flare No. 2	One (1) Open flare	2130.00	4.78	20.94	26.01	113.91	0.70	3.06	0.45	1.99	0.45	1.99	17.40	76.23	6.79	29.73	3.74	16.39	0.75	3.27

Emission Unit ID No.	Description	Total Potential Emissions from Flare No. 2 (Controlled)																		
		LFG Flow	NO <sub>x</sub>		CO		SO <sub>2</sub>		PM <sub>10</sub>		TSP		NMOC		VOC		HAP (Total)		HAP (Single)	
		(scfm)	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr
Flare No.2	One (1) Open flare	2130.00	4.78	20.94	26.01	113.91	0.70	3.06	0.45	1.99	0.45	1.99	0.14	0.61	0.05	0.24	0.16	0.68	0.13	0.56

**NMOC Calculations**

**Company Name:** Prairie View Recycling and Disposal Facility  
**Address City IN Zip:** 15505 Shively Road, Wyatt, IN 46595  
**Part 70 Permit No.:** 141-18138-00051  
**Reviewer:** TE/EVP

=====  
 Model Parameters  
 =====

Lo : 100.00 m<sup>3</sup> / Mg  
 k : 0.0400 1/yr  
 NMOC : 600.00 ppmv  
 Methane : 50.0000 % volume  
 Carbon Dioxide : 50.0000 % volume  
 =====

=====  
 Landfill Parameters  
 =====

Landfill type : No Co-Disposal  
 Year Opened : 1981 Closure Year: 2034  
 Capacity : 15300000 Mg  
 Average Acceptance Rate Required from  
 Current Year to Closure Year : 628571.43 Mg/year  
 =====

=====  
 Model Results  
 =====

Year	Refuse In Place (Mg)	NMOC Emission Rate	
		(Mg/yr)	(Cubic m/yr)
1982	1.47E+05	2.48E+00	6.91E+02
1983	3.03E+05	5.03E+00	1.40E+03
1984	4.93E+05	8.03E+00	2.24E+03
1985	6.66E+05	1.06E+01	2.97E+03
1986	8.57E+05	1.35E+01	3.76E+03
1987	1.10E+06	1.71E+01	4.78E+03
1988	1.36E+06	2.08E+01	5.80E+03
1989	1.67E+06	2.52E+01	7.02E+03
1990	2.09E+06	3.13E+01	8.73E+03
1991	2.56E+06	3.80E+01	1.06E+04
1992	2.98E+06	4.36E+01	1.22E+04
1993	3.46E+06	5.00E+01	1.39E+04
1994	3.85E+06	5.47E+01	1.53E+04
1995	4.23E+06	5.89E+01	1.64E+04
1996	4.67E+06	6.41E+01	1.79E+04
1997	5.00E+06	6.71E+01	1.87E+04
1998	5.28E+06	6.92E+01	1.93E+04
1999	5.53E+06	7.08E+01	1.98E+04
2000	5.78E+06	7.23E+01	2.02E+04
2001	6.07E+06	7.42E+01	2.07E+04
2002	6.29E+06	7.50E+01	2.09E+04
2003	6.47E+06	7.52E+01	2.10E+04
2004	6.69E+06	7.59E+01	2.12E+04
2005	6.96E+06	7.75E+01	2.16E+04
2006	7.27E+06	7.98E+01	2.23E+04
2007	7.55E+06	8.14E+01	2.27E+04
2008	7.83E+06	8.29E+01	2.31E+04
2009	8.11E+06	8.44E+01	2.36E+04
2010	8.40E+06	8.59E+01	2.40E+04
2011	8.68E+06	8.72E+01	2.43E+04
2012	8.96E+06	8.86E+01	2.47E+04
2013	9.24E+06	8.98E+01	2.51E+04
2014	9.52E+06	9.10E+01	2.54E+04
2015	9.80E+06	9.22E+01	2.57E+04
2016	1.01E+07	9.33E+01	2.60E+04
2017	1.04E+07	9.44E+01	2.63E+04
2018	1.06E+07	9.55E+01	2.66E+04
2019	1.09E+07	9.65E+01	2.69E+04
2020	1.12E+07	9.74E+01	2.72E+04
2021	1.15E+07	9.83E+01	2.74E+04
2022	1.18E+07	9.92E+01	2.77E+04
2023	1.20E+07	1.00E+02	2.79E+04
2024	1.23E+07	1.01E+02	2.82E+04
2025	1.26E+07	1.02E+02	2.84E+04
2026	1.29E+07	1.02E+02	2.86E+04
2027	1.32E+07	1.03E+02	2.88E+04
2028	1.34E+07	1.04E+02	2.90E+04
2029	1.37E+07	1.05E+02	2.92E+04
2030	1.40E+07	1.05E+02	2.94E+04
2031	1.43E+07	1.06E+02	2.95E+04
2032	1.46E+07	1.06E+02	2.97E+04
2033	1.48E+07	1.07E+02	2.99E+04
<b>2034</b>	<b>1.51E+07</b>	<b>1.08E+02</b>	<b>3.00E+04</b>
2035	1.53E+07	1.06E+02	2.96E+04
2036	1.53E+07	1.02E+02	2.85E+04

Potential NMOC Emissions	107.50 Mg/yr	uncontrolled
Potential NMOC Emissions	118.50 Tons/yr	uncontrolled
Potential NMOC Emissions	31.40 Tons/yr	75% collection & 98% destruction efficiencies (permit requirements)
Potential VOC Emissions	12.25 Tons/yr	39% of NMOC is VOC

Note 1: The above calculation reflects the potential to emit, based on AP-42, Section 2.4 and the LANDGEM default NMOC concentration of 600 ppmv (as hexane) for non co-disposal landfills (i.e., Prairie View). The 39% NMOC as VOC is recommended in AP-42 for non co-disposal in Table 2.4-2.

**Methane Calculations**

**Company Name:** Prairie View Recycling and Disposal Facility  
**Address City IN Zip:** 15505 Shively Road, Wyatt, IN 46595  
**Part 70 Permit No.:** 141-18138-00051  
**Reviewer:** TE/EVP

=====  
 Model Parameters  
 =====

Lo : 100.00 m<sup>3</sup> / Mg  
 k : 0.0400 1/yr  
 NMOC : 600.00 ppmv  
 Methane : 50.0000 % volume  
 Carbon Dioxide : 50.0000 % volume

=====  
 Landfill Parameters  
 =====

Landfill type : No Co-Disposal  
 Year Opened : 1981    Closure Year: 2034  
 Capacity : 15300000 Mg  
 Average Acceptance Rate Required from  
 Current Year to Closure Year : 628869.95 Mg/year

=====  
 Model Results  
 =====

Year	Methane Emission Rate			Calculated LFG Emission Rate (scfm)
	Refuse In Place (Mg)	(Mg/yr)	(Cubic m/yr)	
1982	1.47E+05	3.84E+02	5.76E+05	77
1983	3.03E+05	7.80E+02	1.17E+06	157
1984	4.93E+05	1.25E+03	1.87E+06	251
1985	6.66E+05	1.65E+03	2.47E+06	333
1986	8.57E+05	2.09E+03	3.13E+06	421
1987	1.10E+06	2.66E+03	3.98E+06	535
1988	1.36E+06	3.22E+03	4.83E+06	649
1989	1.67E+06	3.90E+03	5.85E+06	786
1990	2.09E+06	4.85E+03	7.27E+06	977
1991	2.56E+06	5.90E+03	8.84E+06	1,188
1992	2.98E+06	6.76E+03	1.01E+07	1,361
1993	3.46E+06	7.75E+03	1.16E+07	1,562
1994	3.85E+06	8.49E+03	1.27E+07	1,709
1995	4.23E+06	9.13E+03	1.37E+07	1,839
1996	4.67E+06	9.94E+03	1.49E+07	2,002
1997	5.00E+06	1.04E+04	1.56E+07	2,097
1998	5.28E+06	1.07E+04	1.61E+07	2,161
1999	5.53E+06	1.10E+04	1.65E+07	2,211
2000	5.78E+06	1.12E+04	1.68E+07	2,258
2001	6.07E+06	1.15E+04	1.72E+07	2,316
2002	6.29E+06	1.16E+04	1.74E+07	2,342
2003	6.47E+06	1.17E+04	1.75E+07	2,348
2004	6.69E+06	1.18E+04	1.76E+07	2,371
2005	6.96E+06	1.20E+04	1.80E+07	2,421
2006	7.27E+06	1.24E+04	1.85E+07	2,491
2007	7.55E+06	1.26E+04	1.89E+07	2,542
2008	7.83E+06	1.29E+04	1.93E+07	2,590
2009	8.11E+06	1.31E+04	1.96E+07	2,636
2010	8.40E+06	1.33E+04	2.00E+07	2,683
2011	8.68E+06	1.35E+04	2.03E+07	2,725
2012	8.96E+06	1.37E+04	2.06E+07	2,765
2013	9.24E+06	1.39E+04	2.09E+07	2,806
2014	9.52E+06	1.41E+04	2.12E+07	2,844
2015	9.80E+06	1.43E+04	2.14E+07	2,880
2016	1.01E+07	1.45E+04	2.17E+07	2,916
2017	1.04E+07	1.46E+04	2.19E+07	2,949
2018	1.06E+07	1.48E+04	2.22E+07	2,983
2019	1.09E+07	1.50E+04	2.24E+07	3,013
2020	1.12E+07	1.51E+04	2.26E+07	3,043
2021	1.15E+07	1.53E+04	2.29E+07	3,071
2022	1.18E+07	1.54E+04	2.31E+07	3,100
2023	1.20E+07	1.55E+04	2.33E+07	3,126
2024	1.23E+07	1.57E+04	2.35E+07	3,152
2025	1.26E+07	1.58E+04	2.36E+07	3,176
2026	1.29E+07	1.59E+04	2.38E+07	3,200
2027	1.32E+07	1.60E+04	2.40E+07	3,223
2028	1.34E+07	1.61E+04	2.41E+07	3,245
2029	1.37E+07	1.62E+04	2.43E+07	3,265
2030	1.40E+07	1.63E+04	2.44E+07	3,285
2031	1.43E+07	1.64E+04	2.46E+07	3,305
2032	1.46E+07	1.65E+04	2.47E+07	3,323
2033	1.48E+07	1.66E+04	2.49E+07	3,341
<b>2034</b>	<b>1.51E+07</b>	<b>1.67E+04</b>	<b>2.50E+07</b>	<b>3,357</b>
2035	1.53E+07	1.65E+04	2.47E+07	3,317
2036	1.53E+07	1.58E+04	2.37E+07	3,186

scfm = m3/yr \* 35.31ft3/m3 \* 2ft3 LFG/ft3 CH4  
 8760 hrs/yr \* 60 min/hr

**Landfill Fugitives Hazardous Air Pollutants**

Company Name: Prairie View Recycling and Disposal Facility  
 Address City IN Zip: 15505 Shively Road, Wyatt, IN 46595  
 Part 70 Permit No.: 141-18138-00051  
 Reviewer: TE/EVP

Note: Information on pollutant concentrations (highlighted) were taken from Section 2.4 of AP-42  
 Note: Information on pollutant concentrations (not highlighted) were taken from the Waste Industry Air Coalition

Fugitive Gas Flow Rate: 3,186 scfm  
 191175 scfh  
 Maximum Operating Hours 8760 hours

	Molecular Weight	Conc., ppmv	CAS No.
1,1,1-Trichloroethane	133.41	0.48	71556
1,1,2,2-Tetrachloroethane	167.85	1.1	79345
1,1-Dichloroethane	98.97	2.4	75343
1,1-Dichloroethene	96.94	0.2	75354
1,2-Dichloroethane	98.96	0.41	107062
1,2-Dichloropropane	112.99	0.18	78875
Acrylonitrile	53.06	6.3	107131
Benzene	78.11	1.9	71432
Carbon disulfide	76.13	0.58	75150
Carbon tetrachloride	153.84	0.004	56235
Carbonyl sulfide	60.07	0.49	463581
Chlorobenzene	112.56	0.25	108907
Chloroethane	64.52	1.3	75003
Dichlorobenzene	147	0.21	106467
Chloroform	119.39	0.03	67663
Dichloromethane	84.94	14	75092
Ethylbenzene	106.16	4.6	100414
Ethylene dibromide	187.88	0.001	
Hexane	86.18	6.6	110543
Mercury	200.61	0.00029	7439976
Methyl isobutyl ketone	100.16	1.9	108101
Perchloroethylene	165.83	3.7	127184
Toluene	92.13	39	108883
Trichloroethylene	131.4	2.8	79016
Vinyl chloride	62.5	7.3	75014
Xylenes	106.16	12	1330207

**Calculate Actual Emissions for Hazardous Air Pollutants**

1,1,1-Trichloroethane									
Conc. (ppmv)	Flow (scfh)	Hours	Mol. Wt.	Conversion	Actual (tons/year)	Actual (lbs/hour)			
0.48	191,175	8760	133.41	1 T x	0.1391	0.0318	=		
1,000,000	385.4	year	385.4	2000 lbs					
1,1,2,2-Tetrachloroethane									
1.1	191,175	8760	167.85	1 T x	0.4012	0.0916	=		
1,000,000	385.4	year	385.4	2000 lbs					
1,1-Dichloroethane									
2.4	191,175	8760	98.97	1 T x	0.5161	0.1178	=		
1,000,000	385.4	year	385.4	2000 lbs					
1,1-Dichloroethene									
0.2	191,175	8760	96.94	1 T x	0.0421	0.0096	=		
1,000,000	385.4	year	385.4	2000 lbs					
1,2-Dichloroethane									
0.41	191,175	8760	98.96	1 T x	0.0882	0.0201	=		
1,000,000	385.4	year	385.4	2000 lbs					
1,2-Dichloropropane									
0.18	191,175	8760	112.99	1 T x	0.0442	0.0101	=		
1,000,000	385.4	year	385.4	2000 lbs					

<b>Acrylonitrile</b>									
6.3	ppm HAP x	53.06	mol. Wt. *	191,175 scfh x	8760	hrs. x	1 T x	actual	=
1,000,000		385.4	scf/lb-mole			year	2000 lbs	0.7263 tons/year	0.1658 lbs/hour
<b>Benzene</b>									
1.9	ppm HAP x	78.11	mol. Wt. *	191,175 scfh x	8760	hrs. x	1 T x	actual	=
1,000,000		385.4	scf/lb-mole			year	2000 lbs	0.3224 tons/year	0.0736 lbs/hour
<b>Carbonylsulfide</b>									
0.58	ppm HAP x	76.13	mol. Wt. *	191,175 scfh x	8760	hrs. x	1 T x	actual	=
1,000,000		385.4	scf/lb-mole			year	2000 lbs	0.0959 tons/year	0.0219 lbs/hour
<b>Carbontetrachloride</b>									
0.004	ppm HAP x	153.84	mol. Wt. *	191,175 scfh x	8760	hrs. x	1 T x	actual	=
1,000,000		385.4	scf/lb-mole			year	2000 lbs	0.0013 tons/year	0.0003 lbs/hour
<b>Carbonylsulfide</b>									
0.49	ppm HAP x	60.07	mol. Wt. *	191,175 scfh x	8760	hrs. x	1 T x	actual	=
1,000,000		385.4	scf/lb-mole			year	2000 lbs	0.0640 tons/year	0.0146 lbs/hour
<b>Chlorobenzene</b>									
0.25	ppm HAP x	112.56	mol. Wt. *	191,175 scfh x	8760	hrs. x	1 T x	actual	=
1,000,000		385.4	scf/lb-mole			year	2000 lbs	0.0611 tons/year	0.0140 lbs/hour
<b>Chloroethane</b>									
1.3	ppm HAP x	64.52	mol. Wt. *	191,175 scfh x	8760	hrs. x	1 T x	actual	=
1,000,000		385.4	scf/lb-mole			year	2000 lbs	0.1822 tons/year	0.0416 lbs/hour
<b>Dichlorobenzene</b>									
0.21	ppm HAP x	147	mol. Wt. *	191,175 scfh x	8760	hrs. x	1 T x	actual	=
1,000,000		385.4	scf/lb-mole			year	2000 lbs	0.0671 tons/year	0.0153 lbs/hour
<b>Chloroform</b>									
0.03	ppm HAP x	119.39	mol. Wt. *	191,175 scfh x	8760	hrs. x	1 T x	actual	=
1,000,000		385.4	scf/lb-mole			year	2000 lbs	0.0078 tons/year	0.0018 lbs/hour
<b>Dichloromethane</b>									
14	ppm HAP x	84.94	mol. Wt. *	191,175 scfh x	8760	hrs. x	1 T x	actual	=
1,000,000		385.4	scf/lb-mole			year	2000 lbs	2.5837 tons/year	0.5899 lbs/hour
<b>Ethylbenzene</b>									
4.6	ppm HAP x	106.16	mol. Wt. *	191,175 scfh x	8760	hrs. x	1 T x	actual	=
1,000,000		385.4	scf/lb-mole			year	2000 lbs	1.0610 tons/year	0.2422 lbs/hour
<b>Ethylene Dibromide</b>									
0.001	ppm HAP x	187.88	mol. Wt. *	191,175 scfh x	8760	hrs. x	1 T x	actual	=
1,000,000		385.4	scf/lb-mole			year	2000 lbs	0.0004 tons/year	0.0001 lbs/hour
<b>Hexane</b>									
6.6	ppm HAP x	86.18	mol. Wt. *	191,175 scfh x	8760	hrs. x	1 T x	actual	=
1,000,000		385.4	scf/lb-mole			year	2000 lbs	1.2358 tons/year	0.2821 lbs/hour
<b>Mercury</b>									
0.00029	ppm HAP x	200.61	mol. Wt. *	191,175 scfh x	8760	hrs. x	1 T x	actual	=
1,000,000		385.4	scf/lb-mole			year	2000 lbs	0.0001 tons/year	0.0000 lbs/hour
<b>Methyl isobutyl ketone</b>									
1.9	ppm HAP x	100.16	mol. Wt. *	191,175 scfh x	8760	hrs. x	1 T x	actual	=
1,000,000		385.4	scf/lb-mole			year	2000 lbs	0.4135 tons/year	0.0944 lbs/hour
<b>Perchloroethylene</b>									
3.7	ppm HAP x	165.83	mol. Wt. *	191,175 scfh x	8760	hrs. x	1 T x	actual	=
1,000,000		385.4	scf/lb-mole			year	2000 lbs	1.3331 tons/year	0.3044 lbs/hour
<b>Toluene</b>									
39	ppm HAP x	92.13	mol. Wt. *	191,175 scfh x	8760	hrs. x	1 T x	actual	=
1,000,000		385.4	scf/lb-mole			year	2000 lbs	7.8066 tons/year	1.7823 lbs/hour
<b>Trichloroethylene</b>									
2.8	ppm HAP x	131.4	mol. Wt. *	191,175 scfh x	8760	hrs. x	1 T x	actual	=
1,000,000		385.4	scf/lb-mole			year	2000 lbs	0.7994 tons/year	0.1825 lbs/hour
<b>VinylChloride</b>									
7.3	ppm HAP x	62.5	mol. Wt. *	191,175 scfh x	8760	hrs. x	1 T x	actual	=
1,000,000		385.4	scf/lb-mole			year	2000 lbs	0.9913 tons/year	0.2263 lbs/hour
<b>Xylenes</b>									
12	ppm HAP x	106.16	mol. Wt. *	191,175 scfh x	8760	hrs. x	1 T x	actual	=
1,000,000		385.4	scf/lb-mole			year	2000 lbs	2.7678 tons/year	0.6319 lbs/hour
<b>TOTAL:</b>								<b>21.75 tons/year</b>	<b>4.97 lbs/hour</b>

**Utility Engine/Generator Sets Criteria Pollutants**

**Company Name:** Prairie View Recycling and Disposal Facility  
**Address City IN Zip:** 15505 Shively Road, Wyatt, IN 46595  
**Part 70 Permit No.:** 141-18138-00051  
**Reviewer:** TE/EVP

Pollutant Emission Factors (g/hp-hr)	NOx	CO
	1.35	2.57

Emission factors from stack test conducted on April 20, 2006 on existing Engine #3.

**Performance Data for the Caterpillar 3516 Engines:**

Rating: 1148 brake horsepower-hr per engine (at 100% full load)  
 Rating: 8.9 MMBtu/hr of heat input  
 LFG Heat Input: 550 BTU per scf of LFG  
 Flow: 300 scfm landfill gas per engine  
 18000 scfh landfill gas per engine

**Other data:**

NMOC: 600 ppmv as hexane from LANDGEM  
 % VOC 39.00% of total NMOC or 235 ppmv as hexane from AP-42 Section 2.4, Table 2.4-2  
 Sulfur 32.4 ppmv from information from the Waste Industry Air Coalition (WIAC)  
 PM10 48 lbs/MMdscf methane from AP-42 Section 2.4, Table 2.4-5  
 Control Eff. NMOC 99.20% from AP-42, Table 2.4-3  
 CH4 55.00% average landfill gas methane concentration

**NOx and CO Emissions calculations**

Total Potential Emissions from eight (8) engine/generator sets						
Description	Horsepower (hp)	MMBtu/hr	NO <sub>x</sub>		CO	
			lb/hr	ton/yr	lb/hr	ton/yr
One engine / generator sets	1148.00	8.90	3.41	14.93	6.49	26.43
Eight (8) engine / generator sets	9184.00	71.20	27.28	119.47	51.93	227.44

Each Engine All Eight (8) Engines

**SO<sub>2</sub>:**

32.4	ppm sulfur x	64	mol. Wt. SO <sub>2</sub> *	18,000 scfh x	8760	hrs x	1 ton x		0.10 lbs/hr	=	0.77 lbs/hr
1,000,000		385.4	scf/lb-mole			year	2000 lbs		0.42 tons/year		3.39 tons/year

**NMOC:**

600	ppm NMOC x	86.18	mol. Wt. Hex. *	18,000 scfh x	8760	hrs x	1 ton x	(1 - .992) =	0.02 lbs/hr	=	0.15 lbs/hr
1,000,000		385.4	scf/lb-mole			year	2000 lbs		0.08 tons/year		0.68 tons/year

**VOC:**

235	ppm VOC x	86.18	mol. Wt. Hex. *	18,000 scfh x	8760	hrs x	1 ton x	(1 - .992) =	0.01 lbs/hr	=	0.06 lbs/hr
1,000,000		385.4	scf/lb-mole			year	2000 lbs		0.03 tons/year		0.27 tons/year

**PM:**

48	lbs PM *	18,000	scf LFG x	55%	CH <sub>4</sub> *	1 MMdscf *	8760	hrs x	1 ton x	0.48 lbs/hr	=	3.80 lbs/hr
	MMdscf CH <sub>4</sub>		hr		LFG	1,000,000		year	2000 lbs	2.08 tons/year		16.65 tons/year

**PM<sub>10</sub>:**

48	lbs PM *	18,000	scf LFG x	55%	CH <sub>4</sub> *	1 MMdscf *	8760	hrs x	1 ton x	0.48 lbs/hr	=	3.80 lbs/hr
	MMdscf CH <sub>4</sub>		hr		LFG	1,000,000		year	2000 lbs	2.08 tons/year		16.65 tons/year

**326 IAC 6.5-1-2 Compliance Calculation**

The following calculations determine compliance with 326 IAC 6.5-1-2 which limits stack emissions from each engine/generator to 0.03 gr/dscf:

$$\frac{2.08 \text{ ton/yr} *}{525,600 \text{ min/yr} *} = \frac{2000 \text{ lb/ton} *}{2,514 \text{ dscf/min}} = \frac{7000 \text{ gr/lb}}{2,514 \text{ dscf/min}} = 0.022 \text{ gr/dscf} \quad (\text{Will be able to comply})$$

Allowable particulate emissions under 326 IAC 6.5-1-2 equate to 2.83 tons per year. 0.65 lbs/hr

Note:

$$\text{SCFM} = \frac{6,000 \text{ acfm} * (460 + 68)}{2,514 \text{ scfm}} / (460 + 800)$$

Assumes exhaust gas temperature of 800F and exhaust gas flow of 6,000 acfm.

**Utility Engine/Generator Sets Hazardous Air Pollutants**

**Company Name:** Prairie View Recycling and Disposal Facility  
**Address City IN Zip:** 15505 Shively Road, Wyatt, IN 46595  
**Part 70 Permit No.:** 141-18138-00051  
**Reviewer:** TE/EVP

**Note: Information on pollutant concentrations and control efficiencies were taken from Section 2.4 of AP-42**

Maximum Gas Flow Rate: 300 scfm per engine  
 2400 scfm (all eight engines)  
 144000 scfh (all eight engines)  
 Maximum heat input: 8.9 MMBtu/hr per engine  
 Maximum operating hours: 8760 hours  
 Gas Quality: 550 Btu/ft<sup>3</sup> of LFG (heating value)

	Molecular Weight	Conc., ppmv	CAS No.
1,1,1-Trichloroethane	133.41	0.48	71556
1,1,2,2-Tetrachloroethane	167.85	1.1	79345
1,1-Dichloroethane	98.97	2.4	75343
1,1-Dichloroethene	96.94	0.2	75354
1,2-Dichloroethane	98.96	0.41	107062
1,2-Dichloropropane	112.99	0.18	78875
Acrylonitrile	53.06	6.3	107131
Benzene	78.11	1.9	71432
Carbon disulfide	76.13	0.58	75150
Carbon tetrachloride	153.84	0.004	56235
Carbonyl sulfide	60.07	0.49	463581
Chlorobenzene	112.56	0.25	108907
Chloroethane	64.52	1.3	75003
Dichlorobenzene	147	0.21	106467
Chloroform	119.39	0.03	67663
Dichloromethane	84.94	14	75092
Ethylbenzene	106.16	4.6	100414
Ethylene dibromide	187.88	0.001	
Hexane	86.18	6.6	110543
Mercury	200.61	0.00029	7439976
Methyl isobutyl ketone	100.16	1.9	108101
Perchloroethylene	165.83	3.7	127184
Toluene	92.13	39	108883
Trichloroethylene	131.4	2.8	79016
Vinyl chloride	62.5	7.3	75014
Xylenes	106.16	12	1330207
HCl	36.5	10.5	7647010

Control Efficiency 93.00% For Halogenated Species (AP-42 Table 2.4-3)  
 Control Efficiency 86.10% For Non Halogenated Species (AP-42 Table 2.4-3)

Calculate maximum throughput in MMBtu/hr:  
 300 cfm x 550 Btu/ft<sup>3</sup> x 1 MMBtu/ 1,000,000 Btu = 0.165 MMBtu/min.  
 = 9.9 MMBtu/hr

**Calculate Potential Emissions for Hazardous Air Pollutants**

Pollutant	Concentration (ppm HAP)	Molecular Weight	Flow (scfh)	Hours	Conversion Factor	Control Efficiency	Emissions (tons/year)	Emissions (lbs/hour)
1,1,1-Trichloroethane	0.48	133.41	144,000	8760	1 T x / 2000 lbs	(1 - .93) =	0.0073	0.0017
1,1,2,2-Tetrachloroethane	1.1	167.85	144,000	8760	1 T x / 2000 lbs	(1 - .93) =	0.0212	0.0048
1,1-Dichloroethane	2.4	98.97	144,000	8760	1 T x / 2000 lbs	(1 - .93) =	0.0272	0.0062
1,1-Dichloroethene	0.2	96.94	144,000	8760	1 T x / 2000 lbs	(1 - .93) =	0.0022	0.0005
1,2-Dichloroethane	0.41	98.96	144,000	8760	1 T x / 2000 lbs	(1 - .93) =	0.0046	0.0011
1,2-Dichloropropane	0.18	112.99	144,000	8760	1 T x / 2000 lbs	(1 - .93) =	0.0023	0.0005
Acrylonitrile	6.3	53.06	144,000	8760	1 T x / 2000 lbs	(1 - .861) =	0.0760	0.0174
Benzene	1.9	78.11	144,000	8760	1 T x / 2000 lbs	(1 - .861) =	0.0338	0.0077

<b>Carbonylsulfide</b>										
0.58	ppm HAP x	76.13	mol. Wt. *	144,000 scfh x	8760	hrs_x	1 T_x	(1 - .861) =		
1,000,000		385.4	scf/lb-mole			year	2000 lbs		0.0100 tons/year	0.0023 lbs/hour
<b>Carbontetrachloride</b>										
0.004	ppm HAP x	153.84	mol. Wt. *	144,000 scfh x	8760	hrs_x	1 T_x	(1 - .93) =		
1,000,000		385.4	scf/lb-mole			year	2000 lbs		0.0001 tons/year	0.0000 lbs/hour
<b>Carbonylsulfide</b>										
0.49	ppm HAP x	60.07	mol. Wt. *	144,000 scfh x	8760	hrs_x	1 T_x	(1 - .861) =		
1,000,000		385.4	scf/lb-mole			year	2000 lbs		0.0067 tons/year	0.0015 lbs/hour
<b>Chlorobenzene</b>										
0.25	ppm HAP x	112.56	mol. Wt. *	144,000 scfh x	8760	hrs_x	1 T_x	(1 - .93) =		
1,000,000		385.4	scf/lb-mole			year	2000 lbs		0.0032 tons/year	0.0007 lbs/hour
<b>Chloroethane</b>										
1.3	ppm HAP x	64.52	mol. Wt. *	144,000 scfh x	8760	hrs_x	1 T_x	(1 - .93) =		
1,000,000		385.4	scf/lb-mole			year	2000 lbs		0.0096 tons/year	0.0022 lbs/hour
<b>Dichlorobenzene</b>										
0.21	ppm HAP x	147	mol. Wt. *	144,000 scfh x	8760	hrs_x	1 T_x	(1 - .93) =		
1,000,000		385.4	scf/lb-mole			year	2000 lbs		0.0035 tons/year	0.0008 lbs/hour
<b>Chloroform</b>										
0.03	ppm HAP x	119.39	mol. Wt. *	144,000 scfh x	8760	hrs_x	1 T_x	(1 - .93) =		
1,000,000		385.4	scf/lb-mole			year	2000 lbs		0.0004 tons/year	0.0001 lbs/hour
<b>Dichloromethane</b>										
14	ppm HAP x	84.94	mol. Wt. *	144,000 scfh x	8760	hrs_x	1 T_x	(1 - .93) =		
1,000,000		385.4	scf/lb-mole			year	2000 lbs		0.1362 tons/year	0.0311 lbs/hour
<b>Ethylbenzene</b>										
4.6	ppm HAP x	106.16	mol. Wt. *	144,000 scfh x	8760	hrs_x	1 T_x	(1 - .861) =		
1,000,000		385.4	scf/lb-mole			year	2000 lbs		0.1111 tons/year	0.0254 lbs/hour
<b>Ethylene Dibromide</b>										
0.001	ppm HAP x	187.88	mol. Wt. *	144,000 scfh x	8760	hrs_x	1 T_x	(1 - .861) =		
1,000,000		385.4	scf/lb-mole			year	2000 lbs		0.0000 tons/year	0.0000 lbs/hour
<b>Hexane</b>										
6.6	ppm HAP x	86.18	mol. Wt. *	144,000 scfh x	8760	hrs_x	1 T_x	(1 - .861) =		
1,000,000		385.4	scf/lb-mole			year	2000 lbs		0.1294 tons/year	0.0295 lbs/hour
<b>Mercury (Per AP-42 Table 2.4-3, control efficiency for mercury should be assumed to be 0)</b>										
0.00029	ppm HAP x	200.61	mol. Wt. *	144,000 scfh x	8760	hrs_x	1 T_x	(1 - 0) =		
1,000,000		385.4	scf/lb-mole			year	2000 lbs		0.0001 tons/year	0.0000 lbs/hour
<b>Methyl isobutyl ketone</b>										
1.9	ppm HAP x	100.16	mol. Wt. *	144,000 scfh x	8760	hrs_x	1 T_x	(1 - .861) =		
1,000,000		385.4	scf/lb-mole			year	2000 lbs		0.0433 tons/year	0.0099 lbs/hour
<b>Perchloroethylene</b>										
3.2	ppm HAP x	165.83	mol. Wt. *	144,000 scfh x	8760	hrs_x	1 T_x	(1 - .93) =		
1,000,000		385.4	scf/lb-mole			year	2000 lbs		0.0703 tons/year	0.0160 lbs/hour
<b>Toluene</b>										
39	ppm HAP x	92.13	mol. Wt. *	144,000 scfh x	8760	hrs_x	1 T_x	(1 - .861) =		
1,000,000		385.4	scf/lb-mole			year	2000 lbs		0.8173 tons/year	0.1866 lbs/hour
<b>Trichloroethylene</b>										
2.8	ppm HAP x	131.4	mol. Wt. *	144,000 scfh x	8760	hrs_x	1 T_x	(1 - .93) =		
1,000,000		385.4	scf/lb-mole			year	2000 lbs		0.0421 tons/year	0.0096 lbs/hour
<b>VinylChloride</b>										
7.3	ppm HAP x	82.5	mol. Wt. *	144,000 scfh x	8760	hrs_x	1 T_x	(1 - .93) =		
1,000,000		385.4	scf/lb-mole			year	2000 lbs		0.0523 tons/year	0.0119 lbs/hour
<b>Xylenes</b>										
12	ppm HAP x	106.16	mol. Wt. *	144,000 scfh x	8760	hrs_x	1 T_x	(1 - .861) =		
1,000,000		385.4	scf/lb-mole			year	2000 lbs		0.2898 tons/year	0.0662 lbs/hour
<b>HCl (HCl is a product of combustion and therefore does not have a control efficiency)</b>										
10.5	ppm HAP x	36.5	mol. Wt. *	144,000 scfh x	8760	hrs_x	1 T_x	(1 - 0) =		
1,000,000		385.4	scf/lb-mole			year	2000 lbs		0.6272 tons/year	0.1432 lbs/hour

**TOTAL: 2.53 tons/year 0.58 lbs/hour**

**Emission Calculations  
Combustion Emissions from the 50 scfm Passive Flares**

**Company Name:** Prairie View Recycling and Disposal Facility  
**Address City IN Zip:** 15505 Shively Road, Wyatt, IN 46595  
**Part 70 Permit No.:** 141-18138-00051  
**Reviewer:** TE/EVP

Fuel Input	Flow Rate	Facility Description:
MMBtu/hr	scfm	
1.5	50	

Passive flare with capacity of 50 scfm of landfill gas

Pollutant	PM <sup>a</sup>	PM10 <sup>a</sup>	SO <sub>2</sub> <sup>b</sup>	NOx <sup>a</sup>	CO <sup>a</sup>	NMOC <sup>c</sup>	VOC <sup>d</sup>
Emission Factor	17 (lb/10 <sup>6</sup> dscf methane)	17 (lb/10 <sup>6</sup> dscf methane)	49.6 (ppmv)	40 (lb/10 <sup>6</sup> dscf methane)	750 (lb/10 <sup>6</sup> dscf methane)	595 (ppmv)	235 (ppmv)
Potential to Emit (tons/year) One (1) Flare	0.11	0.11	0.11	0.26	4.9	0.03	0.01
Potential to Emit (tons/year) Three (3) Flares	0.34	0.34	0.34	0.79	14.78	0.08	0.03

Assume PM emissions equal to PM10 emissions.

<sup>a</sup> Emission factors are from AP-42, Chapter 2.4 - Municipal Solid Waste Landfills, Table 2.4-5. Flares (AP-42, 11/98).

<sup>b</sup> The total inlet concentration of Sulfur content compounds in AP-42, Chapter 2.4 - Municipal Solid Waste Landfills - Table 2.4-1 (AP-42, 11/98)

<sup>c</sup> The NMOC concentration is the default value in EPA Landfill Gas Emissions Model, Version 2.01 and AP-42.

<sup>d</sup> VOC is 39% of total NMOC or 235 ppmv as hexane from AP-42 Section 2.4, Table 2.4-2

**Methodology**

PTE of PM / PM10 / NOx / CO Emissions (tons/year) = Flow Rate (scfm landfill gas) / 10<sup>6</sup> x Emission Factor (lb/10<sup>6</sup> dscf) x .5 (conc. Methane in landfill gas) x 60 (mins/hour) x 8760 (hours/year) x 1 ton/2000 lbs

PTE of SO<sub>2</sub> Emissions (tons/year) = Flow Rate (scfm) x Emission Factor (ppmv) / 1000,000 x 1 atm / Gas Constant (0.7302 atm-cf/lb mole-R) / Temp (60F+ 460) x Mole weight of SO<sub>2</sub> (64 lbs/lbs mole) x 60 mins/hour x 8760 hours/year x 1 ton/2000 lbs

PTE of NMOC Emissions (tons/year) = Flow Rate (scfm) x Emission Factor (ppmv) / 1000,000 x 1 atm / Gas Constant (0.7302 atm-cf/lb mole-R) / Temp (60F+ 460) x Mole weight of Hexane ( lbs/lbs mole) x 60 mins/hour x 8760 hours/year x 1 ton/2000 lbs x (1-98% control efficiency)

**Emission Calculations**  
**Combustion Emissions from the 0.805 MMBtu/hr Tipper Engine**

**Company Name:** Prairie View Recycling and Disposal Facility  
**Address City IN Zip:** 15505 Shively Road, Wyatt, IN 46595  
**Part 70 Permit No.:** 141-18138-00051  
**Reviewer:** TE/EVP

Emission Unit	Maximum Capacity	Pollutant	Emission Factor (lbs/MMBTU)	PTE					
				PM (Tons/Year)	PM10 (Tons/Year)	SOx (Tons/Year)	NOx (Tons/Year)	VOC (Tons/Year)	CO (Tons/Year)
Tipper Engine	115	PM	0.31	1.09					
SCC 2-02-001-02	Horsepower	PM10	0.31		1.09				
		SOx	0.29			1.02			
	0.805 (MMBtu/hr)	NOx	2.17				7.66		
	VOC	0.36					1.27		
	CO	0.95							3.35

Emission factors for PM, PM10, SO<sub>2</sub>, VOC and CO are from AP-42, Chapter 3.3 - Gasoline and Diesel Industrial Engines, Table 3.3-1. (10/96)

Emission factor for NOx is from EPA, Control of Emissions of Air Pollution From Nonroad Diesel Engines [Federal Register: September 24, 1997 (Volume 62, 7,000 BTU heat input = one horsepower-hour (Table 3.3-1, AP-42)

**Methodology**

PTE (tons/year) = Maximum Capacity (MMBtu/hour) x Emission Factor (lbs/MMBTU) x 1 ton/2000 lbs x 8760 hours/year

**PM Data**

**Company Name:** Prairie View Recycling and Disposal Facility  
**Address City IN Zip:** 15505 Shively Road, Wyatt, IN 46595  
**Part 70 Permit No.:** 141-18138-00051  
**Reviewer:** TE/EVP

Enter mean wind speed, U<sup>a</sup>  mph  
 Enter material moisture content, M (whole number)<sup>a</sup>  %  
 Enter silt content, G (whole number)<sup>a</sup>  %  
 Enter amount of dirt handled per day for dirt pushing operations  ton/day  
 Enter number of hours per day for dirt-pushing operations  hr/day  
 Enter mean silt content of unpaved surface material (whole number), s<sup>c</sup>  %  
 Enter road surface silt loading of paved surface material (whole number), sL<sup>c</sup>  g/m<sup>2</sup>  
 Enter mean/avg vehicle weight loaded (unpaved & paved), W  tons  
 Enter # days per year with at least 0.01 in. precipitation, p<sup>b</sup>  days  
 Enter number of days per year vehicles travel on site  days  
 Enter total length of unpaved roads, upr  mile  
 Enter total length of paved roads, pr  mile

The following is a breakdown of trucks; enter the number of trucks per day

Transfer Trailer   
 High Capacity   
 Front Loader   
 Rear Loader   
 Roll-Off   
 Dump Trucks   
 Other (P/U)

<sup>a</sup> AP-42, Section 13.2.4, 11/06

<sup>b</sup> derived from AP42, Figure 13.2.2-1, 11/06

<sup>c</sup> AP42, Section 13.2.2, 11/06

**Fugitive Emissions from Unpaved Roads**

**Company Name:** Prairie View Recycling and Disposal Facility  
**Address City IN Zip:** 15505 Shively Road, Wyatt, IN 46595  
**Part 70 Permit No.:** 141-18138-00051  
**Reviewer:** TE/EVP

	Uncontrolled			80% Controlled (water)		
	lb/yr	ton/yr	lb/hr	TPY	lb/hr	TPY
Total Calculated PM <sub>10</sub> Emissions from Unpaved Roads	181966.63	90.98	20.77	18.20	4.15	4.15
Total Calculated TSP Emissions from Unpaved Roads	674057.30	337.03	76.95	67.41	15.39	15.39

$TSP (lb/VMT)^a = E \cdot (k \cdot (s/12)^{0.77} \cdot (W/3)^{0.45}) \cdot ((365-p)/365)$   
 $PM_{10} (lb/VMT)^a = E \cdot (k \cdot (s/12)^{0.91} \cdot (W/3)^{0.45}) \cdot ((365-p)/365)$

where,  
 E = emission factor from loaded trucks (lb/VMT) 141036.00 mi  
 VMT = vehicle mile travelled  
 k = particle size multiplier for PM<sub>10</sub> (unpaved)<sup>a</sup> 1.50  
 k = particle size multiplier for TSP (unpaved)<sup>a</sup> 4.90  
 s = mean silt content of unpaved surface materia (unpaved)<sup>b</sup> 6.40 %  
 W = mean/avg vehicle weight loaded (unpaved & paved) 18.30 tons  
 p = # days per year with at least 0.01 in. precip<sup>b</sup> 120.00 days  
 annual operation 365.00 days  
 UPR = total length of unpaved roads 2.10 mi

Vehicle Type	E (lb/VMT)		Truck Count (per day)	Emissions (lb/yr)	
	PM <sub>10</sub>	TSP		PM <sub>10</sub>	TSP
Transfer Trailer	1.29	4.78	22.00	21756.88	80593.81
High Capacity	1.29	4.78	0.00	0.00	0.00
Front Loader	1.29	4.78	22.00	21756.88	80593.81
Rear Loader	1.29	4.78	50.00	49447.45	183167.74
Roll-Off	1.29	4.78	32.00	31646.37	117227.36
Dump Trucks	1.29	4.78	40.00	39557.96	146534.20
Other (P/U)	1.29	4.78	18.00	17801.08	65940.39

**PM10 Emissions - 80% control**  
**Control Device - Watering of unpaved roads, gravel/stone road, reduced speed limit**

**Tons per year ^ 0.8 control = Controlled emissions 72.79 tpy**  
**Tons per year - controlled emissions = Fugitive emissions reported 18.20 tpy**

<sup>a</sup> AP42, Section 13.2.2, 11/06  
<sup>b</sup> derived from AP42, Figure 13.2.2-1, 11/06

**Fugitive Emissions from Paved Roads**

**Company Name:** Prairie View Recycling and Disposal Facility  
**Address City IN Zip:** 15505 Shively Road, Wyatt, IN 46595  
**Part 70 Permit No.:** 141-18138-00051  
**Reviewer:** TE/EVP

	Uncontrolled			80% Controlled (water)		
Total Calculated PM <sub>10</sub> Emissions from Paved Roads	22,717	lb/yr	11.36	ton/yr	2.59	lb/hr
Total Calculated TSP Emissions from Paved Roads	116,501	lb/yr	58.25	ton/yr	13.30	lb/hr
					2.27	TPY
					0.52	lb/hr
					11.65	TPY
					2.66	lb/hr

$PM_{10} \text{ and TSP (lb/VMT)}^a \quad E = k \cdot (sL/2)^{0.65} \cdot (W/3)^{1.5} - C$

where,

E = emission factor from loaded trucks (lb/VMT) 40296 mi  
 VMT = vehicle mile travelled 0.016 lb/VMT  
 k = particle size multiplier for PM<sub>10</sub> (paved)<sup>a</sup> 0.082 lb/VMT  
 k = particle size multiplier for TSP (paved)<sup>a</sup> 7.4 g/m<sup>2</sup>  
 sL = road surface silt loading (g/m<sup>2</sup>) 18.3 tons  
 W = mean/avg vehicle weight loaded (unpaved & paved) annual operation 365 days  
 PR = total length of paved roads 0.60 mi  
 C = emission factor for 1980's vehicle exhaust, brake wear and tire wear for PM and PM10 0.00047 lb/VMT

Vehicle Type	E (lb/VMT)		Truck Count <sup>1</sup> (per day)	Emissions (lb/yr)	
	PM <sub>10</sub>	TSP		PM <sub>10</sub>	TSP
Transfer Trailer	0.56	2.89	22	2,716	13,930
High Capacity	0.56	2.89	0	0	0
Front Loader	0.56	2.89	22	2,716	13,930
Rear Loader	0.56	2.89	50	6,173	31,658
Roll-Off	0.56	2.89	32	3,951	20,261
Dump Trucks	0.56	2.89	40	4,938	25,326
Other (P/U)	0.56	2.89	18	2,222	11,397

**PM10 Emissions - 80% control**

Control Device - Sweeping of paved roads, reduced speed limit

Tons per year \* 0.8 control = Controlled emissions 9.09 tpy  
 Tons per year - controlled emissions = Fugitive emissions reported 2.27 tpy

<sup>a</sup> AP42, Section 13.2.2, 12/03