Indiana Department of Environmental Management
We Protect Hoosiers and Our Environment.
100 N. Senate Avenue • Indianapolis, IN 46204
(800) 451-6027 • (317) 232-8603 • www.idem.IN.gov

Michael R. Pence
Governor

Carol S. Comer
Commissioner

NOTICE OF 30-DAY PERIOD
FOR PUBLIC COMMENT

Preliminary Findings Regarding
the Renewal of a Part 70 Operating Permit

for Sycamore Ridge Landfill in Vigo County

Part 70 Operating Permit Renewal No.: T167-36980-00116

The Indiana Department of Environmental Management (IDEM) has received an application from Sycamore Ridge Landfill located at 5621 East Cottom Drive, Pimento, Indiana 47866 for a renewal of its Part 70 Operating Permit Renewal issued on December 19, 2011. If approved by IDEM's Office of Air Quality (OAQ), this proposed renewal would allow Sycamore Ridge Landfill to continue to operate its existing source.

This draft Part 70 Operating Permit Renewal does not contain any new equipment that would emit air pollutants; however, some conditions from previously issued permits/approvals have been corrected, changed, or removed. These corrections, changes, and removals may include Title I changes. This notice fulfills the public notice procedures to which those conditions are subject. IDEM has reviewed this application and has developed preliminary findings, consisting of a draft permit and several supporting documents, which would allow for these changes.

A copy of the permit application and IDEM's preliminary findings are available at:

Vigo County Public Library
One Library Square
Terre Haute, Indiana 47807

A copy of the preliminary findings is available on the Internet at: http://www.in.gov/ai/appfiles/idem-caats/.

How can you participate in this process?

The date that this notice is published in a newspaper marks the beginning of a 30-day public comment period. If the 30th day of the comment period falls on a day when IDEM offices are closed for business, all comments must be postmarked or delivered in person on the next business day that IDEM is open.

You may request that IDEM hold a public hearing about this draft permit. If adverse comments concerning the **air pollution impact** of this draft permit are received, with a request for a public hearing, IDEM will decide whether or not to hold a public hearing. IDEM could also decide to hold a public meeting instead of, or in addition to, a public hearing. If a public hearing or meeting is held, IDEM will make a separate announcement of the date, time, and location of that hearing or meeting. At a hearing, you would have an opportunity to submit written comments and make verbal comments. At a meeting, you would have an opportunity to submit written comments, ask questions, and discuss any air pollution concerns with IDEM staff.

Comments and supporting documentation, or a request for a public hearing should be sent in writing to IDEM at the address below. If you comment via e-mail, please include your full U.S. mailing address so that you can be added to IDEM's mailing list to receive notice of future action related to this permit. If you do not want to comment at this time, but would like to receive notice of future action related to this permit

application, please contact IDEM at the address below. Please refer to permit number T167-36980-00116 in all correspondence

Comments should be sent to:

David Matousek
IDEM, Office of Air Quality
100 North Senate Avenue
MC 61-53 IGCN 1003
Indianapolis, Indiana 46204-2251
(800) 451-6027, ask for extension 2-8253
Or dial directly: (317) 232-8253
Fax: (317) 232-6749 Attn: David Matousek
E-mail: dmatouse@idem.IN.gov

All comments will be considered by IDEM when we make a decision to issue or deny the permit. Comments that are most likely to affect final permit decisions are those based on the rules and laws governing this permitting process (326 IAC 2), air quality issues, and technical issues. IDEM does not have legal authority to regulate zoning, odor, or noise. For such issues, please contact your local officials.

For additional information about air permits and how the public and interested parties can participate, refer to the IDEM Permit Guide on the Internet at: http://www.in.gov/idem/5881.htm; and the Citizens' Guide to IDEM on the Internet at: http://www.in.gov/idem/6900.htm.

What will happen after IDEM makes a decision?

Following the end of the public comment period, IDEM will issue a Notice of Decision stating whether the permit has been issued or denied. If the permit is issued, it may be different than the draft permit because of comments that were received during the public comment period. If comments are received during the public notice period, the final decision will include a document that summarizes the comments and IDEM's response to those comments. If you have submitted comments or have asked to be added to the mailing list, you will receive a Notice of the Decision. The notice will provide details on how you may appeal IDEM's decision, if you disagree with that decision. The final decision will also be available on the Internet at the address indicated above, at the local library indicated above and the IDEM public file room on the 12th floor of the Indiana Government Center North, 100 N. Senate Avenue, Indianapolis, Indiana 46204-2251.

If you have any questions, please contact David Matousek of my staff at the above address.

Nathan C. Bell, Section Chief
Permits Branch
Office of Air Quality

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Part 70 Operating Permit Renewal
OFFICE OF AIR QUALITY

DRAFT

Sycamore Ridge Landfill
5621 East Cottom Drive
Pimento, Indiana 47866

(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.: T167-36980-00116	
Issued by: Nathan C. Bell, Section Chief Permits Branch Office of Air Quality	Issuance Date: Expiration Date:

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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 and A.3 through A.5 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(14)] [326 IAC 2-7-1(22)]

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

Source Address:	5621 East Cottom Drive, Pimento, Indiana 47866
General Source Phone Number:	(317) 283-7143
SIC Code:	4953 (Refuse Systems)
County Location:	Vigo County, Linton Township
Source Location Status:	Attainment for all criteria pollutants
Source Status:	Part 70 Operating Permit Program Minor Source, under PSD Minor Source, Section 112 of the Clean Air Act Not 1 of 28 Source Categories

A.2 Part 70 Source Definition [326 IAC 2-7-1(22)]

This municipal solid waste landfill consists of two (2) plants considered one (1) source:

(a) Landfill 1, Sycamore Ridge Landfill is located at 5621 East Cottom Drive, Pimento, Indiana; and

(b) Landfill 2, Victory Environmental Services, Inc. is located at 12247 South Mill Street, Terre Haute, Indiana.

Since the two (2) landfills are located on contiguous or adjacent properties, belong to the same industrial grouping, and are under common control of the same entity, they are considered one (1) source, effective from the date of issuance of Part 70 Operating Permit Renewal T167-18140-00116, on October 3, 2006.

A.3 Emission Units and Pollution Control Equipment Summary [326 IAC 2-7-4(c)(3)] [326 IAC 2-7-5(14)]

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

(a) One (1) municipal solid waste landfill. The original landfill (Victory Environmental Services, Inc.) was constructed in 1972 and has a maximum design capacity of 3,601,000 megagrams (Mg). The expanded landfill (Sycamore Ridge Landfill) was constructed in 2003 and has a maximum design capacity of 17,003,782 Mg. [40 CFR 61, Subpart M] [40 CFR 60, Subpart WWW] [40 CFR 63, Subpart AAAA]

(b) One (1) Active Gas Collection and Control System, identified as GCCS-VES, for Victory Environmental Services, Inc., including an open flare with a design capacity of 1,200 standard cubic feet per minute with a maximum heat input capacity of 41.76 MMBtu/hr. The Gas Collection and Control System consists of vertical gas extraction wells connected by a network of header piping that will be used to transport the collected landfill gas to a central point of service. Landfill gas will be collected from the landfill by inducing a vacuum on the well field using an in-line blower system. The GCCS-VES commenced construction in 2004. [40 CFR 60, Subpart WWW] [40 CFR 63, Subpart AAAA]

(c) One (1) Active Gas Collection and Control System, identified as GCCS-SRL, for Sycamore Ridge Landfill, including one (1) candlestick flare, with a maximum capacity of 4,000 scfm of landfill gas with a maximum heat input capacity of 139.20 MMBtu/hr. The Gas Collection and Control System consists of vertical gas extraction wells connected by a network of header piping that will be used to transport the collected landfill gas to a central point of service. Landfill gas will be collected from the landfill by inducing a vacuum on the well field using an in-line blower system. The GCCS-SRL commenced construction in 2008. [40 CFR 60, Subpart WWW] [40 CFR 63, Subpart AAAA]

A.4 Specifically Regulated Insignificant Activities [326 IAC 2-7-1(21)] [326 IAC 2-7-4(c)] [326 IAC 2-7-5(14)]

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

(a) Six (6) portable welders, Unit #3, using less than 1,200 pounds of stick per year, total. [326 IAC 6.5]

(b) Four (4) propane-fired space heaters, Unit #13, with a combined maximum heat input capacity of less than 6.0 MMBtu/hr, total. [326 IAC 6.5]

(c) Two (2) portable kerosene heaters, with a combined heat input capacity of less than 2.0 MMBtu/hr, identified as Unit #20. [326 IAC 6.5]

(d) Two (2) 500 gallon used oil tanks and a waste oil-fired furnace (Clean Burn CB-2500), identified as Unit #21, with a maximum heat input capacity of less than 2.0 MMBtu/hr, emissions are uncontrolled. [326 IAC 6.5]

(e) Paved and unpaved roads. [326 IAC 6.5]

(f) One (1) 1,000 gallon gasoline AST with vent, identified as Unit ID #23, with a monthly gasoline throughput of less than ten thousand (10,000) gallons, constructed prior to November 9, 2006. [40 CFR 63, Subpart CCCCCC]

A.5 Other Insignificant Activities [326 IAC 2-7-1(21)] [326 IAC 2-7-4(c)] [326 IAC 2-7-5(14)]

This stationary source also includes the following insignificant activities which are not specifically regulated, as defined in 326 IAC 2-7-1(21):

(a) One (1) 55 gallon drum of transmission fluid, Unit #5

(b) One (1) 300 gallon above ground storage tank (AST) for antifreeze, Unit #7

(c) One (1) 400 gallon AST for hydraulic oil, Unit #8

(d) One (1) 250 gallon AST for used motor oil tank, Unit #10

(e) One (1) 500 gallon AST for propane, Unit #12

(f) Two (2) 35,000 gallon AST for diesel storage, Unit #14

(g) One (1) 26,000 gallon underground storage tank (UST) for leachate, Unit #15

(h) Two (2) 55 gallon drums of Castrol gear oil, Unit #16

(i) Two (2) 250 gallon AST for hydraulic fluid, Unit #17

(j) One (1) 250 gallon AST for gear oil, Unit #18

(k) One (1) 375 gallon AST for transmission fluid, Unit #19

(l) One (1) 1,000 gallon AST for on-road diesel, Unit #25

(m) One (1) portable 375 gallon tank for motor oil, Unit #29

(n) One (1) 250 gallon storage tank for transmission fluid, Unit #30

(o) One (1) 300 gallon storage tank for kerosene, Unit #32

(p) Two (2) 200 gallon propane tanks, Unit #33

(q) One (1) 55 gallon drum of transmission oil, Unit #34

(r) One (1) 500 gallon AST for used oil storage for the boiler, Unit #35

A.6 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]

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)]

(a) This permit, T167-36980-00116, 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]

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] [IC 13-17-12]

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)]

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)]

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)]

(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. 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) A certification required by this permit meets the requirements of 326 IAC 2-7-6(1) if:

(1) it contains a certification by a "responsible official" as defined by 326 IAC 2-7-1(35), and

(2) the certification states that, based on information and belief formed after reasonable inquiry, the statements and information in the document are true, accurate, and complete.

(b) The Permittee may use the attached Certification Form, or its equivalent with each submittal requiring certification. One (1) certification may cover multiple forms in one (1) submittal.

(c) A "responsible official" is defined at 326 IAC 2-7-1(35).

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 July 1 of each year to:

Indiana Department of Environmental Management
Compliance and Enforcement 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 a certification that meets the requirements of 326 IAC 2-7-6(1) by a "responsible official" as defined by 326 IAC 2-7-1(35).

B.10 Preventive Maintenance Plan [326 IAC 2-7-5(12)] [326 IAC 1-6-3]

(a) A Preventive Maintenance Plan meets the requirements of 326 IAC 1-6-3 if it includes, at a minimum:

(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.

The Permittee shall implement the PMPs.

(b) If required by specific condition(s) in Section D of this permit where no PMP was previously required, the Permittee shall prepare and maintain Preventive Maintenance Plans (PMPs) no later than ninety (90) days after issuance of this permit or ninety (90) days after initial start-up, whichever is later, 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.

If, due to circumstances beyond the Permittee's control, the PMPs cannot be prepared and maintained within the above time frame, the Permittee may extend the date an additional ninety (90) days provided the Permittee notifies:

Indiana Department of Environmental Management
Compliance and Enforcement Branch, Office of Air Quality
100 North Senate Avenue
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The PMP extension notification does not require a certification that meets the requirements of 326 IAC 2-7-6(1) by a "responsible official" as defined by 326 IAC 2-7-1(35).

The Permittee shall implement the PMPs.

(c) 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. The PMPs and their submittal do not require a certification that meets the requirements of 326 IAC 2-7-6(1) by a "responsible official" as defined by 326 IAC 2-7-1(35).

(d) 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]

(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 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 and Enforcement Branch), or
Telephone Number: 317-233-0178 (ask for Office of Air Quality, Compliance and Enforcement Branch)
Facsimile Number: 317-233-6865

(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 and Enforcement Branch, Office of Air Quality
100 North Senate Avenue
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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 a certification that meets the requirements of 326 IAC 2-7-6(1) by a "responsible official" as defined by 326 IAC 2-7-1(35).

(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)(8) 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.

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 T167-36980-00116 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 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]

(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 a certification that meets the requirements of 326 IAC 2-7-6(1) by a "responsible official" as defined by 326 IAC 2-7-1(35).

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

(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(42). The renewal application does require a certification that meets the requirements of 326 IAC 2-7-6(1) by a "responsible official" as defined by 326 IAC 2-7-1(35).

Request for renewal shall be submitted to:

Indiana Department of Environmental Management
Permit Administration and Support Section, Office of Air Quality
100 North Senate Avenue
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(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, pursuant to 326 IAC 2-7-4(a)(2)(D), in writing by IDEM, OAQ any additional information identified as being needed to process the application.

B.17 Permit Amendment or Modification [326 IAC 2-7-11] [326 IAC 2-7-12]

(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
Permit Administration and Support Section, Office of Air Quality
100 North Senate Avenue
MC 61-53 IGCN 1003
Indianapolis, Indiana 46204-2251

Any such application does require a certification that meets the requirements of 326 IAC 2-7-6(1) by a "responsible official" as defined by 326 IAC 2-7-1(35).

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

(a) No Part 70 permit revision or notice 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.19 Operational Flexibility [326 IAC 2-7-20] [326 IAC 2-7-10.5]

(a) The Permittee may make any change or changes at the source that are described in 326 IAC 2-7-20(b) or (c) 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
Permit Administration and Support Section, 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)(1) and (c)(1). 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) and (c)(1).

(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(37)) 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 a certification that meets the requirements of 326 IAC 2-7-6(1) by a "responsible official" as defined by 326 IAC 2-7-1(35).

(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.20 Source Modification Requirement [326 IAC 2-7-10.5]

A modification, construction, or reconstruction is governed by the requirements of 326 IAC 2.

B.21 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.22 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
Permit Administration and Support Section, Office of Air Quality
100 North Senate Avenue
MC 61-53 IGCN 1003
Indianapolis, Indiana 46204-2251

Any such application does require a certification that meets the requirements of 326 IAC 2-7-6(1) by a "responsible official" as defined by 326 IAC 2-7-1(35).

(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.23 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.24 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 Opacity [326 IAC 5-1]

Pursuant to 326 IAC 5-1-2 (Opacity Limitations), except as provided in 326 IAC 5-1-1 (Applicability) and 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 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.

C.2 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.

C.3 Incineration [326 IAC 4-2] [326 IAC 9-1-2]

The Permittee shall not operate an incinerator except as provided in 326 IAC 4-2 or in this permit. The Permittee shall not operate a refuse incinerator or refuse burning equipment except as provided in 326 IAC 9-1-2 or in this permit.

C.4 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.5 Fugitive Particulate Matter Emission Limitations [326 IAC 6-5]

Pursuant to 326 IAC 6-5 (Fugitive Particulate Matter Emission Limitations), fugitive particulate matter emissions shall be controlled according to the fugitive dust control plan submitted on February 16, 1999. The provisions of 326 IAC 6-5 are not federally enforceable. The plan consists of:

(a) Roads - Dust will be controlled by sweeping on-site paved road areas and by the application of water to paved and unpaved roads as needed to minimize the fugitive dust emissions leading to and from the working face of the landfill and other areas of activity on the landfill.

(b) Cover Stockpiles - Soil cover stockpiles will be wetted with water as needed if they present fugitive dust concerns. In the event soil stockpiles present a continuing fugitive dust concern, a temporary stand of vegetation will be established.

(c) Completed Fill Areas - Areas of the facility that are at intermediate grade with intermediate cover will be vegetated as needed to minimize fugitive dust concerns. Those areas of the facility at final grade will be closed in accordance with 329 IAC 10 and vegetation established as required to minimize fugitive dust.

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
Compliance and Enforcement Branch, Office of Air Quality
100 North Senate Avenue
MC 61-53 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 that meets the requirements of 326 IAC 2-7-6(1) by a "responsible official" as defined by 326 IAC 2-7-1(35).

(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 Licensed 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 Licensed Asbestos Inspector to thoroughly inspect the affected portion of the facility for the presence of asbestos. The requirement to use an Indiana Licensed Asbestos inspector is not federally enforceable.

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

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

(a) For performance testing required by this permit, a test protocol, except as provided elsewhere in this permit, shall be submitted to:

Indiana Department of Environmental Management
Compliance and Enforcement Branch, Office of Air Quality
100 North Senate Avenue
MC 61-53 IGCN 1003
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no later than thirty-five (35) days prior to the intended test date. The protocol submitted by the Permittee does not require a certification that meets the requirements of 326 IAC 2-7-6(1) by a "responsible official" as defined by 326 IAC 2-7-1(35).

(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 a certification that meets the requirements of 326 IAC 2-7-6(1) by a "responsible official" as defined by 326 IAC 2-7-1(35).

(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]

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)]

(a) For new units:
Unless otherwise specified in the approval for the new emission unit(s), compliance monitoring for new emission units shall be implemented on and after the date of initial start-up.

(b) For existing units:
Unless otherwise specified in this permit, for all monitoring requirements not already legally required, the Permittee shall be allowed up to ninety (90) days from the date of permit issuance to begin such monitoring. If, due to circumstances beyond the Permittee's control, any monitoring equipment required by this permit cannot be installed and operated no later than ninety (90) days after permit issuance, 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 and Enforcement 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 a certification that meets the requirements of 326 IAC 2-7-6(1) by a "responsible official" as defined by 326 IAC 2-7-1(35).

C.10 Instrument Specifications [326 IAC 2-1.1-11] [326 IAC 2-7-5(3)] [326 IAC 2-7-6(1)]

(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. The analog instrument shall be capable of measuring values outside of the normal range.

(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.11 Emergency Reduction Plans [326 IAC 1-5-2] [326 IAC 1-5-3]

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

(a) The Permittee shall maintain the most recently submitted written emergency reduction plans (ERPs) consistent with safe operating procedures.

(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.12 Risk Management Plan [326 IAC 2-7-5(11)] [40 CFR 68]

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.13 Response to Excursions or Exceedances [326 IAC 2-7-5] [326 IAC 2-7-6]

Upon detecting an excursion where a response step is required by the D Section or an exceedance of a limitation in this permit:

(a) The Permittee shall take reasonable response steps to 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 excess emissions.

(b) The response shall include minimizing the period of any startup, shutdown or malfunction. The response may include, but is not limited to, the following:

(1) initial inspection and evaluation;

(2) recording that operations returned or are returning 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 normal or usual manner of operation.

(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 record the reasonable response steps taken.

C.14 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 submit a description of its response actions to IDEM, OAQ no later than seventy-five (75) days after the date of the test.

(b) A retest to demonstrate compliance shall be performed no later than one hundred eighty (180) days after the date of the test. Should the Permittee demonstrate to IDEM, OAQ that retesting in one hundred eighty (180) 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 a certification that meets the requirements of 326 IAC 2-7-6(1) by a "responsible official" as defined by 326 IAC 2-7-1(35).

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

C.15 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]

Pursuant to 326 IAC 2-6-3(b)(3), starting in 2006 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(33) ("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 a certification that meets the requirements of 326 IAC 2-7-6(1) by a "responsible official" as defined by 326 IAC 2-7-1(35).

C.16 General Record Keeping Requirements [326 IAC 2-7-5(3)] [326 IAC 2-7-6]

(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. Support information includes the following, where applicable:

(AA) All calibration and maintenance records.
(BB) All original strip chart recordings for continuous monitoring instrumentation.
(CC) Copies of all reports required by the Part 70 permit.

Records of required monitoring information include the following, where applicable:

(AA) The date, place, as defined in this permit, and time of sampling or measurements.
(BB) The dates analyses were performed.
(CC) The company or entity that performed the analyses.
(DD) The analytical techniques or methods used.
(EE) The results of such analyses.
(FF) The operating conditions as existing at the time of sampling or measurement.

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, for all record keeping requirements not already legally required, the Permittee shall be allowed up to ninety (90) days from the date of permit issuance or the date of initial start-up, whichever is later, to begin such record keeping.

C.17 General Reporting Requirements [326 IAC 2-7-5(3)(C)] [326 IAC 2-1.1-11]

(a) The Permittee shall submit the attached Quarterly Deviation and Compliance Monitoring Report or its equivalent. Proper notice submittal under Section B -Emergency Provisions satisfies the reporting requirements of this paragraph. Any deviation from permit requirements, the date(s) of each deviation, the cause of the deviation, and the response steps taken must be reported except that 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. This report shall be submitted not later than thirty (30) days after the end of the reporting period. The Quarterly Deviation and Compliance Monitoring Report shall include a certification that meets the requirements of 326 IAC 2-7-6(1) by a "responsible official" as defined by 326 IAC 2-7-1(35). A deviation is an exceedance of a permit limitation or a failure to comply with a requirement of the permit.

(b) The address for report submittal is:

Indiana Department of Environmental Management
Compliance and Enforcement Branch, 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) 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.

Stratospheric Ozone Protection

C.18 Compliance with 40 CFR 82 and 326 IAC 22-1

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 applicable standards for recycling and emissions reduction.

SECTION D.1 EMISSIONS UNIT OPERATION CONDITIONS

Emissions Unit Description:

(a) One (1) municipal solid waste landfill. The original landfill (Victory Environmental Services, Inc.) was constructed in 1972 and has a maximum design capacity of 3,601,000 megagrams (Mg). The expanded landfill (Sycamore Ridge Landfill) was constructed in 2003 and has a maximum design capacity of 17,003,782 Mg. [40 CFR 61, Subpart M]
[40 CFR 60, Subpart WWW] [40 CFR 63, Subpart AAAA]

(b) One (1) Active Gas Collection and Control System, identified as GCCS-VES, for Victory Environmental Services, Inc., including an open flare with a design capacity of 1,200 standard cubic feet per minute with a maximum heat input capacity of 41.76 MMBtu/hr. The Gas Collection and Control System consists of vertical gas extraction wells connected by a network of header piping that will be used to transport the collected landfill gas to a central point of service. Landfill gas will be collected from the landfill by inducing a vacuum on the well field using an in-line blower system. The GCCS-VES commenced construction in 2004.
[40 CFR 60, Subpart WWW] [40 CFR 63, Subpart AAAA]

(c) One (1) Active Gas Collection and Control System, identified as GCCS-SRL, for Sycamore Ridge Landfill, including one (1) candlestick flare, with a maximum capacity of 4,000 scfm of landfill gas with a maximum heat input capacity of 139.20 MMBtu/hr. The Gas Collection and Control System consists of vertical gas extraction wells connected by a network of header piping that will be used to transport the collected landfill gas to a central point of service. Landfill gas will be collected from the landfill by inducing a vacuum on the well field using an in-line blower system. The GCCS-SRL commenced construction in 2008.
[40 CFR 60, Subpart WWW] [40 CFR 63, Subpart AAAA]

Insignificant Activities

(a) Six (6) portable welders, Unit #3, using less than 1,200 pounds of stick per year, total.
[326 IAC 6.5]

(b) Four (4) propane-fired space heaters, Unit #13, with a combined maximum heat input capacity of less than 6.0 MMBtu/hr, total. [326 IAC 6.5]

(c) Two (2) portable kerosene heaters, with a combined heat input capacity of less than 2.0 MMBtu/hr, identified as Unit #20. [326 IAC 6.5]

(d) Two (2) 500 gallon used oil tanks and a waste oil-fired furnace (Clean Burn CB-2500), identified as Unit #21, with a maximum heat input capacity of less than 2.0 MMBtu/hr, emissions are uncontrolled. [326 IAC 6.5]

(e) Paved and unpaved roads. [326 IAC 6.5]

(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 Prevention of Significant Deterioration (PSD) Minor Limit [326 IAC 2-2]

(a) Combined landfill gas usage in the landfill gas-fired flares, identified as GCCS-VES and GCCS-SRL, shall not exceed 2,300 MMCF per twelve (12) consecutive month period with compliance determined at the end of each month.

(b) CO emissions from the landfill gas-fired flares, identified as GCCS-VES and GCCS-SRL shall not exceed 0.370 lb/MMBtu.

(c) The heat content of the landfill gas shall not exceed 580 Btu/Ft^3.

Compliance with these limits, combined with the potential to emit CO from all other emission units at this source, shall limit the source-wide potential to emit of CO to less than two hundred and fifty (250) tons per twelve consecutive month period and will render the requirements of 326 IAC 2-2 (Prevention of Significant Deterioration (PSD)) not applicable to the entire source.

D.1.2 Particulate Matter [326 IAC 6.5]

Pursuant to 326 IAC 6.5-1-2(a), particulate matter emissions from the following operations shall not exceed 0.03 grain per dry standard cubic foot (dscf):

(a) The flare for the gas collection and control system identified as GCCS-VES

(b) The flare for the gas collection and control system identified as GCCS-SRL

(c) Six (6) portable welders, identified as Unit #3

(d) Four (4) propane-fired space heaters, identified as Unit #13

(e) Two (2) portable kerosene heaters, identified as Unit #20

(f) Two (2) 500 gallon used oil tanks and waste oil-fired furnace, identified as Unit #21

(g) Paved and unpaved roads

D.1.3 Preventive Maintenance Plan [326 IAC 2-7-5(12)]

A Preventive Maintenance Plan (PMP) is required for the facilities listed in this section. Section B - Preventive Maintenance Plan contains the Permittee's obligations with regard to the preventive maintenance plan required by this condition.

Compliance Determination Requirements [326 IAC 2-7-5(1)]

D.1.4 Landfill Gas Heat Content

(a) The Permittee shall determine compliance with Condition D.1.1(c) by measuring the methane content, in % by volume methane, of the landfill gas collected by the active landfill gas collection and control system at least once per year using a portable analyzer.

(b) The Permittee shall calculate the heat content of the landfill gas, in Btu/Ft^3, gas using the following equation:

Heat Content (Btu/Ft^3) = (% by volume methane in landfill gas) x 896 Btu/Ft^3

Where: 896 Btu/Ft^3 is the net heating value of pure methane. See 40 CFR 63, Subpart CC, Appendix, Table 12.

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

D.1.5 Record Keeping Requirements

(a) To document the compliance status with Condition D.1.1(a), the Permittee shall record and maintain monthly records of the amount of landfill gas combusted in each of the flares, identified as GCCS-VES and GCCS-SRL.

(b) To document the compliance status with Condition D.1.1(a), the Permittee shall record and maintain monthly records of the combined amount of landfill gas combusted in the landfill gas flared, identified as GCCS-VES and GCCS-SRL.

(c) To document the compliance status with Condition D.1.1(b), the Permittee shall maintain a record of the manufacturer performance guarantee for the CO emission rate of each of the landfill gas flares, identified as GCCS-VES and GCCS-SRL. The record shall be complete and sufficient to establish compliance with the CO emission limitation contained in Condition D.1.1(b).

(d) To document the compliance status with Condition D.1.1(c) and D.1.4, the Permittee shall maintain records of the methane content, in % by volume methane, and the calculated heat content, in Btu/Ft^3, of the landfill gas collected by the gas collection and control system. The records shall be complete and sufficient to establish compliance with the heat content limitation contained in Condition D.1.1(c) and Condition D.1.4.

(e) Section C - General Record Keeping Requirements contains the Permittee's obligations with regard to the records required by this condition.

D.1.6 Reporting Requirements

A quarterly summary of the information to document the compliance status with Condition D.1.1(a) shall be submitted using the reporting form located at the end of this permit, or its equivalent, not later than thirty (30) days after the end of the quarter being reported. Section C - General Reporting contains the Permittee's obligation with regard to the reporting required by this condition. The report submitted by the Permittee does require a certification that meets the requirements of 326 IAC 2-7-6(1) by a “responsible official” as defined by 326 IAC 2-7-1(35).

SECTION E.1 NSPS - 40 CFR 60, Subpart WWW

Emissions Unit Description:

(a) One (1) municipal solid waste landfill. The original landfill (Victory Environmental Services, Inc.) was constructed in 1972 and has a maximum design capacity of 3,601,000 megagrams (Mg). The expanded landfill (Sycamore Ridge Landfill) was constructed in 2003 and has a maximum design capacity of 17,003,782 Mg. [40 CFR 61, Subpart M] [40 CFR 60, Subpart WWW] [40 CFR 63, Subpart AAAA]

(b) One (1) Active Gas Collection and Control System, identified as GCCS-VES, for Victory Environmental Services, Inc., including an open flare with a design capacity of 1,200 standard cubic feet per minute with a maximum heat input capacity of 41.76 MMBtu/hr. The Gas Collection and Control System consists of vertical gas extraction wells connected by a network of header piping that will be used to transport the collected landfill gas to a central point of service. Landfill gas will be collected from the landfill by inducing a vacuum on the well field using an in-line blower system. The GCCS-VES commenced construction in 2004. [40 CFR 60, Subpart WWW] [40 CFR 63, Subpart AAAA]

(c) One (1) Active Gas Collection and Control System, identified as GCCS-SRL, for Sycamore Ridge Landfill, including one (1) candlestick flare, with a maximum capacity of 4,000 scfm of landfill gas with a maximum heat input capacity of 139.20 MMBtu/hr. The Gas Collection and Control System consists of vertical gas extraction wells connected by a network of header piping that will be used to transport the collected landfill gas to a central point of service. Landfill gas will be collected from the landfill by inducing a vacuum on the well field using an in-line blower system. The GCCS-SRL commenced construction in 2008. [40 CFR 60, Subpart WWW] [40 CFR 63, Subpart AAAA]

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

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

E.1.1 General Provisions Relating to New Source Performance Standards [326 IAC 12-1] [40 CFR Part 60, Subpart A]

(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 emission units listed above, except as otherwise specified in 40 CFR Part 60, Subpart WWW.

(b) Pursuant to 40 CFR 60.4, the Permittee shall submit all required notifications and reports to:

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

E.1.2 Standards of Performance for Municipal Solid Waste Landfills NSPS [326 IAC 12] [40 CFR Part 60, Subpart WWW] [326 IAC 8-8.1]

The Permittee shall comply with 326 IAC 8-8.1 (Municipal Solid Waste Landfills Not Located in Clark, Floyd, Lake, and Porter Counties) and the following provisions of 40 CFR Part 60, Subpart WWW (included as Attachment A to the operating permit), which are incorporated by reference as 326 IAC 12, for the emission units listed above:

1) 40 CFR 60.750;
2) 40 CFR 60.751;
3) 40 CFR 60.752(b)(2)(i), (b)(2)(ii)(A), (b)(2)(iii)(A and C), (b)(2)(iv and v), and (d);
4) 40 CFR 60.753;
5) 40 CFR 60.754(a)(1)(i), (a)(2)(ii), (a)(3)(i and ii), (b), (c), and (e);
6) 40 CFR 60.755(a)(1)(ii and iii), (a)(2), (a)(3), (a)(4), (a)(5), (b), (c), (d), and (e);
7) 40 CFR 60.756(a), (c), and (f);
8) 40 CFR 60.757(a)(1)(ii), (a)(2), (a)(3), (b)(3), (c), (d), (e), (f), and (g);
9) 40 CFR 60.758(a), (b)(1), (b)(4), (c)(2), (d), and (e);
10) 40 CFR 60.759

E.1.3 Operational Standards for Collection and Control Systems [40 CFR 60.753] [326 IAC 12]

In order to comply with 40 CFR 60.752(b)(2)(ii) and 40 CFR 60.753. The Permittee shall:

(a) Operate the collection system such that gas is collected from each area, cell, or group of cells in the municipal solid waste landfill in which solid waste has been in place for five years if active or two (2) years or more if closed or at final grade.

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

(1) Fire or increased well temperature. The Permittee 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 40 CFR 60.757(f)(1).

(2) Use of a geomembrane or synthetic cover. The Permittee 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 Office of Air Quality (OAQ). IDEM, OAQ considers the decommissioning of a well as an operational change rather than a design change and no prior approval from IDEM, OAQ is necessary to decommission a well.

(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, except as indicated below:

(1) Pursuant to Administrative Amendment 167-28653-00116, the landfill gas temperature at well G159 shall not exceed 60 °C (140 °F).

(2) Pursuant to Administrative Amendment 167-31434-00116, the landfill gas temperature at well G104 shall not exceed 60 °C (140 °F).

(3) Pursuant to Administrative Amendment 167-31434-00116, oxygen levels in the landfill gas at wells VEGW05, VEGW06, VEGW07 and VEGW08 shall not exceed 21%.

(4) Pursuant to 2nd Administrative Amendment 167-32050-00116, oxygen levels in the landfill gas at well G101 shall not exceed 12%.

(5) Pursuant to Significant Permit Modification No. 167-32729-00116, oxygen levels in the landfill gas well VEGW04 shall not exceed 21%.

(6) Pursuant to Significant Permit Modification No. 167-32729-00116, the landfill gas temperature at landfill gas wells G102, G108, G111, and G120 shall not exceed 60 °C (140 °F).

(7) Pursuant to Significant Permit Modification No. 167-34649-00116, oxygen levels in the landfill gas well VEGW02 shall not exceed 21%.

(8) Pursuant to Significant Permit Modification No. 167-34649-00116, the landfill gas temperature at landfill gas well G121R shall not exceed 60 °C (140 °F).

The Permittee may establish a higher operating temperature, nitrogen or oxygen value at other particular wells. 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 method is established as allowed by 40 CFR 60.752(b)(2)(i).

(2) Unless an alternative test method is established as allowed by 40 CFR 60.752(b)(2)(i), the oxygen shall be determined by an oxygen meter using Method 3A except that; the span shall be set so that the regulatory limit is between 20 and 50 percent of the span; a data recorder is not required; only two calibration gases are required, a zero and span, and ambient air may be used as the span; a calibration error check is not required; 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 Permittee shall conduct surface testing around the perimeter of the collection area and along a pattern that traverses the landfill at 30 meter intervals and where visual observations indicate elevated concentrations of landfill gas, such as distressed vegetation and cracks or seeps in the cover. The Permittee may establish an 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 40 CFR 60.752(b)(2)(iii). In the event the collection or control system is inoperable, the gas mover system shall be shut down and all valves in the collection and control system contributing to venting of the gas to the atmosphere shall be closed within one hour.

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

(g) If monitoring demonstrates that the operational requirements in 40 CFR 60.753(b), (c), or (d) are not met, corrective action shall be taken as specified in 40 CFR 60.755(a)(3) through (5) or 40 CFR 60.755(c). If corrective actions are taken as specified in 40 CFR 60.755, the monitored exceedance is not a violation of the operational requirements in 40 CFR 60.753.

SECTION E.2 NESHAP - 40 CFR 61, Subpart M

Emissions Unit Description:

(a) One (1) municipal solid waste landfill. The original landfill (Victory Environmental Services, Inc.) was constructed in 1972 and has a maximum design capacity of 3,601,000 megagrams (Mg). The expanded landfill (Sycamore Ridge Landfill) was constructed in 2003 and has a maximum design capacity of 17,003,782 Mg. [40 CFR 61, Subpart M] [40 CFR 60, Subpart WWW] [40 CFR 63, Subpart AAAA]

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

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

E.2.1 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]

(a) Pursuant to 40 CFR 63.1 the Permittee shall comply with the provisions of 40 CFR Part 63, Subpart A - General Provisions, which are incorporated by reference as 326 IAC 14-1, for the emission unit listed above, except as otherwise specified in 40 CFR 61, Subpart M.

(b) Pursuant to 40 CFR 61.10, the Permittee shall submit all required notifications and reports to:

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

E.2.2 National Emission Standards for Asbestos NESHAP [40 CFR Part 61, Subpart M] [326 IAC 14-2]

The Permittee shall comply with the following provisions of 40 CFR Part 61, Subpart M (included as Attachment B to the operating permit), which are incorporated by reference as 326 IAC 14-2, for the emission unit listed above:

1) 40 CFR 61.140;
2) 40 CFR 61.141;
3) 40 CFR 61.154;
4) 40 CFR 61.156, Table 1; and
5) 40 CFR 61.157(a) and (b)(5).

SECTION E.3 NESHAP - 40 CFR 63, Subpart AAAA

Emissions Unit Description:

(a) One (1) municipal solid waste landfill. The original landfill (Victory Environmental Services, Inc.) was constructed in 1972 and has a maximum design capacity of 3,601,000 megagrams (Mg). The expanded landfill (Sycamore Ridge Landfill) was constructed in 2003 and has a maximum design capacity of 17,003,782 Mg. [40 CFR 61, Subpart M] [40 CFR 60, Subpart WWW] [40 CFR 63, Subpart AAAA]

(b) One (1) Active Gas Collection and Control System, identified as GCCS-VES, for Victory Environmental Services, Inc., including an open flare with a design capacity of 1,200 standard cubic feet per minute with a maximum heat input capacity of 41.76 MMBtu/hr. The Gas Collection and Control System consists of vertical gas extraction wells connected by a network of header piping that will be used to transport the collected landfill gas to a central point of service. Landfill gas will be collected from the landfill by inducing a vacuum on the well field using an in-line blower system. The GCCS-VES commenced construction in 2004. [40 CFR 60, Subpart WWW] [40 CFR 63, Subpart AAAA]

(c) One (1) Active Gas Collection and Control System, identified as GCCS-SRL, for Sycamore Ridge Landfill, including one (1) candlestick flare, with a maximum capacity of 4,000 scfm of landfill gas with a maximum heat input capacity of 139.20 MMBtu/hr. The Gas Collection and Control System consists of vertical gas extraction wells connected by a network of header piping that will be used to transport the collected landfill gas to a central point of service. Landfill gas will be collected from the landfill by inducing a vacuum on the well field using an in-line blower system. The GCCS-SRL commenced construction in 2008. [40 CFR 60, Subpart WWW] [40 CFR 63, Subpart AAAA]

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

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

E.3.1 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]

(a) Pursuant to 40 CFR 63.1 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, for the emission units listed above, except as otherwise specified in 40 CFR Part 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 and Enforcement Branch, Office of Air Quality
100 North Senate Avenue
MC 61-53 IGCN 1003
Indianapolis, Indiana 46204-2251

E.3.2 National Emission Standards for Hazardous Air Pollutants: Municipal Solid Waste Landfills NESHAP [40 CFR Part 63, Subpart AAAA] [326 IAC 20-67]

The Permittee shall comply with the following provisions of 40 CFR Part 63, Subpart AAAA (included as Attachment C to the operating permit), which are incorporated by reference as 326 IAC 20-67, for the emission units listed above:

1) 40 CFR 63.1930;
2) 40 CFR 63.1935(a)(3);
3) 40 CFR 63.1940(a) and (c);
4) 40 CFR 63.1945(b) and (f);
5) 40 CFR 63.1950;
6) 40 CFR 63.1955(a)(1), (b), and (c);
7) 40 CFR 63.1965;
8) 40 CFR 63.1975;
9) 40 CFR 63.1980(a) and (b);
10) 40 CFR 63.1985;
11) 40 CFR 63.1990; and
12) Table 1.

SECTION E.4 NESHAP - 40 CFR 63, Subpart CCCCCC

Insignificant Activities:

(f) One (1) 1,000 gallon gasoline AST with vent, identified as Unit ID #23, with a monthly gasoline throughput of less than ten thousand (10,000) gallons. [40 CFR 63, Subpart CCCCCC]

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

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

E.4.1 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]

(a) Pursuant to 40 CFR 63.1 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, for the emission unit listed above, except as otherwise specified in 40 CFR Part 63, Subpart CCCCCC.

(b) Pursuant to 40 CFR 63.10, the Permittee shall submit all required notifications and reports to:

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

E.4.2 National Emission Standards for Hazardous Air Pollutants for Source Category: Gasoline Dispensing Facilities NESHAP [40 CFR Part 63, Subpart CCCCCC]

The Permittee shall comply with the following provisions of 40 CFR Part 63, Subpart CCCCCC (included as Attachment D to the operating permit), for the emission unit listed above:

1) 40 CFR 63.11110;
2) 40 CFR 63.11111(a), (b), (e), (f), (h), (i), and (j);
3) 40 CFR 63.11112(a) and (d);
4) 40 CFR 63.11113(b);
5) 40 CFR 63.11115;
6) 40 CFR 63.11116;
7) 40 CFR 63.1125(d);
8) 40 CFR 63.1126(b);
9) 40 CFR 63.11130;
10) 40 CFR 63.11131;
11) 40 CFR 63.11132;
12) Table 3.

INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF AIR QUALITY
COMPLIANCE AND ENFORCEMENT BRANCH
PART 70 OPERATING PERMIT
CERTIFICATION

Source Name: Sycamore Ridge Landfill
Source Address: 5621 East Cottom Drive, Pimento, Indiana 47866
Part 70 Permit No.: T167-36980-00116

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 AND ENFORCEMENT 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: Sycamore Ridge Landfill
Source Address: 5621 East Cottom Drive, Pimento, Indiana 47866
Part 70 Permit No.: T167-36980-00116

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**) daytime 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_2, VOC, NO_X, 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: _____

INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF AIR QUALITY
COMPLIANCE AND ENFORCEMENT BRANCH

PART 70 QUARTERLY REPORT

Source Name: Sycamore Ridge Landfill
Source Address: 5621 East Cottom Drive, Pimento, Indiana 47866
Part 70 Permit No.: T167-36980-00116
Facility: Landfill Gas Flares GCCS-VES and GCCS-SRL
Parameter: Combined Landfill Gas Usage
Limit: D.1.1(a): Combined landfill gas usage in the landfill gas-fired flares, identified as GCCS-VES and GCCS-SRL, shall not exceed 2,300 MMCF per twelve (12) consecutive month period with compliance determined at the end of each month

QUARTER : _____ YEAR: _____

Month	Column 1	Column 2	Column 1 + Column 2
	This Month	Previous 11 Months	12 Month Total

☐ No deviation occurred in this quarter.

☐ Deviation/s occurred in this quarter.
Deviation has been reported on: _____

Submitted by: _____

Title / Position: _____

Signature:_____

Date: _____

Phone: _____

INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF AIR QUALITY
COMPLIANCE AND ENFORCEMENT BRANCH
PART 70 OPERATING PERMIT
QUARTERLY DEVIATION AND COMPLIANCE MONITORING REPORT

Source Name: Sycamore Ridge Landfill
Source Address: 5621 East Cottom Drive, Pimento, Indiana 47866
Part 70 Permit No.: T167-36980-00116

Months: _ **to** _____ **Year:** _____

Page 1 of 2

This report shall be submitted quarterly based on a calendar year. Proper notice submittal under Section B -Emergency Provisions satisfies the reporting requirements of paragraph (a) of Section C-General Reporting. Any deviation from the requirements of this permit, 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".	
☐ NO DEVIATIONS OCCURRED THIS REPORTING PERIOD.	
☐ THE FOLLOWING DEVIATIONS OCCURRED THIS REPORTING PERIOD	
Permit Requirement (specify permit condition #)	
Date of Deviation:	**Duration of Deviation:**
Number of Deviations:	
Probable Cause of Deviation:	
Response Steps Taken:	
Permit Requirement (specify permit condition #)	
Date of Deviation:	**Duration of Deviation:**
Number of Deviations:	
Probable Cause of Deviation:	
Response Steps Taken:	

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

Form Completed by:_____

Title / Position: _____

Date:_____

Phone: _____

Attachment A

Part 70 Operating Permit No: T167-36980-00116

[Downloaded from the eCFR on December 18, 2014]

Electronic Code of Federal Regulations

Title 40: Protection of Environment

PART 60—STANDARDS OF PERFORMANCE FOR NEW STATIONARY SOURCES

Subpart WWW—Standards of Performance for Municipal Solid Waste Landfills

Source: 61 FR 9919, Mar. 12, 1996, unless otherwise noted.

§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.

[61 FR 9919, Mar. 12, 1996, as amended at 63 FR 32750, June 16, 1998]

§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.

[61 FR 9919, Mar. 12, 1996, as amended at 63 FR 32750, June 16, 1998; 64 FR 9262, Feb. 24, 1999]

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

(a) Each owner or operator of an MSW landfill having a design capacity less than 2.5 million megagrams by mass or 2.5 million cubic meters by volume shall submit an initial design capacity report to the Administrator as provided in §60.757(a). The landfill may calculate design capacity in either megagrams or cubic meters for comparison with the exemption values. Any density conversions shall be documented and submitted with the report. Submittal of the initial design capacity report shall fulfill the requirements of this subpart except as provided for in paragraphs (a)(1) and (a)(2) of this section.

(1) The owner or operator shall submit to the Administrator an amended design capacity report, as provided for in §60.757(a)(3).

(2) When an increase in the maximum design capacity of a landfill exempted from the provisions of §60.752(b) through §60.759 of this subpart on the basis of the design capacity exemption in paragraph (a) of this section results in a revised maximum design capacity equal to or greater than 2.5 million megagrams and 2.5 million cubic meters, the owner or operator shall comply with the provision of paragraph (b) of this section.

(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.

(1) If the calculated NMOC emission rate is less than 50 megagrams per year, the owner or operator shall:

(i) Submit an annual emission report to the Administrator, except as provided for in §60.757(b)(1)(ii); and

(ii) Recalculate the NMOC emission rate annually using the procedures specified in §60.754(a)(1) until such time as the calculated NMOC emission rate is equal to or greater than 50 megagrams per year, or the landfill is closed.

(A) If the NMOC emission rate, upon recalculation required in paragraph (b)(1)(ii) of this section, is equal to or greater than 50 megagrams per year, the owner or operator shall install a collection and control system in compliance with paragraph (b)(2) of this section.

(B) If the landfill is permanently closed, a closure notification shall be submitted to the Administrator as provided for in §60.757(d).

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

(i) Submit a collection and control system design plan prepared by a professional engineer to the Administrator within 1 year:

(A) The collection and control system as described in the plan shall meet the design requirements of paragraph (b)(2)(ii) of this section.

(B) The collection and control system design plan shall include any alternatives to the operational standards, test methods, procedures, compliance measures, monitoring, recordkeeping or reporting provisions of §§60.753 through 60.758 proposed by the owner or operator.

(C) The collection and control system design plan shall either conform with specifications for active collection systems in §60.759 or include a demonstration to the Administrator's satisfaction of the sufficiency of the alternative provisions to §60.759.

(D) The Administrator shall review the information submitted under paragraphs (b)(2)(i) (A),(B) and (C) of this section and either approve it, disapprove it, or request that additional information be submitted. Because of the many site-specific factors involved with landfill gas system design, alternative systems may be necessary. A wide variety of system designs are possible, such as vertical wells, combination horizontal and vertical collection systems, or horizontal trenches only, leachate collection components, and passive systems.

(ii) Install a collection and control system that captures the gas generated within the landfill as required by 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.

(c) For purposes of obtaining an operating permit under title V of the Act, the owner or operator of a MSW landfill subject to this subpart with a design capacity less than 2.5 million megagrams or 2.5 million cubic meters is not subject to the requirement to obtain an operating permit for the landfill under part 70 or 71 of this chapter, unless the landfill is otherwise subject to either part 70 or 71. For purposes of submitting a timely application for an operating permit under part 70 or 71, the owner or operator of a 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, and not otherwise subject to either part 70 or 71, becomes subject to the requirements of §§70.5(a)(1)(i) or 71.5(a)(1)(i) of this chapter, regardless of when the design capacity report is actually submitted, no later than:

(1) June 10, 1996 for MSW landfills that commenced construction, modification, or reconstruction on or after May 30, 1991 but before March 12, 1996;

(2) Ninety days after the date of commenced construction, modification, or reconstruction for MSW landfills that commence construction, modification, or reconstruction on or after March 12, 1996.

(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.

[61 FR 9919, Mar. 12, 1996, as amended at 63 FR 32751, June 16, 1998; 65 FR 18908, Apr. 10, 2000; 71 FR 55127, Sept. 21, 2006]

§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.

[61 FR 9919, Mar. 12, 1996, as amended at 63 FR 32751, June 16, 1998; 65 FR 61778, Oct. 17, 2000]

§60.754 Test methods and procedures.

(a)(1) The landfill owner or operator shall calculate the NMOC emission rate using either the equation provided in paragraph (a)(1)(i) of this section or the equation provided in paragraph (a)(1)(ii) of this section. Both equations may be used if the actual year-to-year solid waste acceptance rate is known, as specified in paragraph (a)(1)(i), for part of the life of the landfill and the actual year-to-year solid waste acceptance rate is unknown, as specified in paragraph (a)(1)(ii), for part of the life of the landfill. The values to be used in both equations are 0.05 per year for k, 170 cubic meters per megagram for L_O, and 4,000 parts per million by volume as hexane for the C_{NMOC}. For landfills located in geographical areas with a thirty year annual average precipitation of less than 25 inches, as measured at the nearest representative official meteorologic site, the k value to be used is 0.02 per year.

(i) The following equation shall be used if the actual year-to-year solid waste acceptance rate is known.

$$M_{NMOC} = \sum_{i=1}^{n} 2\,k\,L_o M_i \left(e^{-kt_i}\right)\left(C_{NMOC}\right)\left(3.6\times10^{-9}\right)$$

where,

M_{NMOC} = Total NMOC emission rate from the landfill, megagrams per year

k=methane generation rate constant, year^{-1}

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

M_i = mass of solid waste in the ith section, megagrams

t_i = age of the ith section, years

C_{NMOC} = concentration of NMOC, parts per million by volume as hexane

3.6×10^{-9} = conversion factor

The mass of nondegradable solid waste may be subtracted from the total mass of solid waste in a particular section of the landfill when calculating the value for M_i if documentation of the nature and amount of such wastes is maintained

(ii) The following equation shall be used if the actual year-to-year solid waste acceptance rate is unknown.

$$M_{NMOC} = 2L_o R (e^{-kc} - e^{-kt}) C_{NMOC} (3.6 \times 10^{-9})$$

Where:

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

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

R=average annual acceptance rate, megagrams per year

k=methane generation rate constant, $year^{-1}$

t = age of landfill, years

C_{NMOC} = concentration of NMOC, parts per million by volume as hexane

c=time since closure, years; for active landfill c=O and $e^{-kc}1$

3.6×10−9=conversion factor

The mass of nondegradable solid waste may be subtracted from the total mass of solid waste in a particular section of the landfill when calculating the value of R, if documentation of the nature and amount of such wastes is maintained.

(2) *Tier 1.* The owner or operator shall compare the calculated NMOC mass emission rate to the standard of 50 megagrams per year.

(i) If the NMOC emission rate calculated in paragraph (a)(1) of this section is less than 50 megagrams per year, then the landfill owner shall submit an emission rate report as provided in §60.757(b)(1), and shall recalculate the NMOC mass emission rate annually as required under §60.752(b)(1).

(ii) If the calculated NMOC emission rate is equal to or greater than 50 megagrams per year, then the landfill owner shall either comply with §60.752(b)(2), or determine a site-specific NMOC concentration and recalculate the NMOC emission rate using the procedures provided in paragraph (a)(3) of this section.

(3) *Tier 2.* The landfill owner or operator shall determine the NMOC concentration using the following sampling procedure. The landfill owner or operator shall install at least two sample probes per hectare of landfill surface that has retained waste for at least 2 years. If the landfill is larger than 25 hectares in area, only 50 samples are required. The sample probes should be located to avoid known areas of nondegradable solid waste. The owner or operator shall collect and analyze one sample of landfill gas from each probe to determine the NMOC concentration using Method 25 or 25C of appendix A of this part. Method 18 of appendix A of this part may be used to analyze the samples collected by the Method 25 or 25C sampling procedure. Taking composite samples from different probes into a single cylinder is allowed; however, equal sample volumes must be taken from each probe. For each composite, the sampling rate, collection times, beginning and ending cylinder vacuums, or alternative volume measurements must be recorded to verify that composite volumes are equal. Composite sample volumes should not be less than one liter unless evidence can be provided to substantiate the accuracy of smaller volumes. Terminate compositing before the cylinder approaches ambient pressure where measurement accuracy diminishes. If using Method 18, the owner or operator must identify all compounds in the sample and, as a minimum, test for those compounds published in the most recent Compilation of Air Pollutant Emission Factors (AP-42), minus carbon monoxide, hydrogen sulfide, and mercury. As a minimum, the instrument must be calibrated for each of the

compounds on the list. Convert the concentration of each Method 18 compound to C_{NMOC} as hexane by multiplying by the ratio of its carbon atoms divided by six. If more than the required number of samples are taken, all samples must be used in the analysis. The landfill owner or operator must divide the NMOC concentration from Method 25 or 25C of appendix A of this part by six to convert from C_{NMOC} as carbon to C_{NMOC} as hexane. If the landfill has an active or passive gas removal system in place, Method 25 or 25C samples may be collected from these systems instead of surface probes provided the removal system can be shown to provide sampling as representative as the two sampling probe per hectare requirement. For active collection systems, samples may be collected from the common header pipe before the gas moving or condensate removal equipment. For these systems, a minimum of three samples must be collected from the header pipe.

(i) The landfill owner or operator shall recalculate the NMOC mass emission rate using the equations provided in paragraph (a)(1)(i) or (a)(1)(ii) of this section and using the average NMOC concentration from the collected samples instead of the default value in the equation provided in paragraph (a)(1) of this section.

(ii) If the resulting mass emission rate calculated using the site-specific NMOC concentration is equal to or greater than 50 megagrams per year, then the landfill owner or operator shall either comply with §60.752(b)(2), or determine the site-specific methane generation rate constant and recalculate the NMOC emission rate using the site-specific methane generation rate using the procedure specified in paragraph (a)(4) of this section.

(iii) If the resulting NMOC mass emission rate is less than 50 megagrams per year, the owner or operator shall submit a periodic estimate of the emission rate report as provided in §60.757(b)(1) and retest the site-specific NMOC concentration every 5 years using the methods specified in this section.

(4) *Tier 3.* The site-specific methane generation rate constant shall be determined using the procedures provided in Method 2E of appendix A of this part. The landfill owner or operator shall estimate the NMOC mass emission rate using equations in paragraph (a)(1)(i) or (a)(1)(ii) of this section and using a site-specific methane generation rate constant k, and the site-specific NMOC concentration as determined in paragraph (a)(3) of this section instead of the default values provided in paragraph (a)(1) of this section. The landfill owner or operator shall compare the resulting NMOC mass emission rate to the standard of 50 megagrams per year.

(i) If the NMOC mass emission rate as calculated using the site-specific methane generation rate and concentration of NMOC is equal to or greater than 50 megagrams per year, the owner or operator shall comply with §60.752(b)(2).

(ii) If the NMOC mass emission rate is less than 50 megagrams per year, then the owner or operator shall submit a periodic emission rate report as provided in §60.757(b)(1) and shall recalculate the NMOC mass emission rate annually, as provided in §60.757(b)(1) using the equations in paragraph (a)(1) of this section and using the site-specific methane generation rate constant and NMOC concentration obtained in paragraph (a)(3) of this section. The calculation of the methane generation rate constant is performed only once, and the value obtained from this test shall be used in all subsequent annual NMOC emission rate calculations.

(5) The owner or operator may use other methods to determine the NMOC concentration or a site-specific k as an alternative to the methods required in paragraphs (a)(3) and (a)(4) of this section if the method has been approved by the Administrator.

(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:

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

where,

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

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

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

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

(2) The average NMOC concentration, C_{NMOC}, shall be determined by collecting and analyzing landfill gas sampled from the common header pipe before the gas moving or condensate removal equipment using the procedures in Method 25C or Method 18 of appendix A 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_{NMOC} as carbon to C_{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:

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

where,

$NMOC_{in}$ = mass of NMOC entering control device

$NMOC_{out}$ = 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).

[61 FR 9919, Mar. 12, 1996, as amended at 63 FR 32751, June 16, 1998; 65 FR 18908, Apr. 10, 2000; 65 FR 61778, Oct. 17, 2000; 71 FR 55127, Sept. 21, 2006]

§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_o kinetic factors should be those published in the most recent Compilation of Air Pollutant Emission Factors (AP-42) or other site specific values demonstrated to be appropriate and approved by the 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:

$Q_m = 2L_o R (e^{-kc} - e^{-kt})$

where,

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

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

R = average annual acceptance rate, megagrams per year

k = methane generation rate constant, $year^{-1}$

t = age of the landfill at equipment installation plus the time the owner or operator intends to use the gas mover equipment or active life of the landfill, whichever is less. If the equipment is installed after closure, t is the age of the landfill at installation, years

c = time since closure, years (for an active landfill c = O and $e^{-kc} = 1$)

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

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

where,

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

k=methane generation rate constant, $year^{-1}$

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

M_i = mass of solid waste in the ith section, megagrams

t_i = age of the ith 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 remonitoring shows a concentration less than 500 parts per million above background, no further monitoring of that location is required until the next quarterly monitoring period. If the 1-month remonitoring 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.

[61 FR 9919, Mar. 12, 1996, as amended at 63 FR 32752, June 16, 1998]

§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 ±1 percent of the temperature being measured expressed in degrees Celsius or ±0.5 degrees Celsius, whichever is

greater. A temperature monitoring device is not required for boilers or process heaters with design heat input capacity equal to or greater than 44 megawatts.

(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.

(2) A device that records flow to or bypass of the flare. 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.

(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.

[61 FR 9919, Mar. 12, 1996, as amended at 63 FR 32752, June 16, 1998; 65 FR 18909, Apr. 10, 2000]

§60.757 Reporting requirements.

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

(a) Each owner or operator subject to the requirements of this subpart shall submit an initial design capacity report to the Administrator.

(1) The initial design capacity report shall fulfill the requirements of the notification of the date construction is commenced as required by §60.7(a)(1) and shall be submitted no later than:

(i) June 10, 1996, for landfills that commenced construction, modification, or reconstruction on or after May 30, 1991 but before March 12, 1996 or

(ii) Ninety days after the date of commenced construction, modification, or reconstruction for landfills that commence construction, modification, or reconstruction on or after March 12, 1996.

(2) The initial design capacity report shall contain the following information:

(i) A map or plot of the landfill, providing the size and location of the landfill, and identifying all areas where solid waste may be landfilled according to the permit issued by the State, local, or tribal agency responsible for regulating the landfill.

(ii) The maximum design capacity of the landfill. Where the maximum design capacity is specified in the permit issued by the State, local, or tribal agency responsible for regulating the landfill, a copy of the permit specifying the maximum design capacity may be submitted as part of the report. If the maximum design capacity of the landfill is not specified in the permit, the maximum design capacity shall be calculated using good engineering practices. The calculations shall be provided, along with the relevant parameters as part of the report. The State, Tribal, local agency or Administrator may request other reasonable information as may be necessary to verify the maximum design capacity of the landfill.

(3) An amended design capacity report shall be submitted to the Administrator providing notification of an increase in the design capacity of the landfill, within 90 days of an increase in the maximum design capacity of the landfill to or above 2.5 million megagrams and 2.5 million cubic meters. This increase in design capacity may result from an increase in the permitted volume of the landfill or an increase in the density as documented in the annual recalculation required in §60.758(f).

(b) Each owner or operator subject to the requirements of this subpart shall submit an NMOC emission rate report to the Administrator initially and annually thereafter, except as provided for in paragraphs (b)(1)(ii) or (b)(3) of this section. The Administrator may request such additional information as may be necessary to verify the reported NMOC emission rate.

(1) The NMOC emission rate report shall contain an annual or 5-year estimate of the NMOC emission rate calculated using the formula and procedures provided in §60.754(a) or (b), as applicable.

(i) The initial NMOC emission rate report may be combined with the initial design capacity report required in paragraph (a) of this section and shall be submitted no later than indicated in paragraphs (b)(1)(i)(A) and (B) of this section. Subsequent NMOC emission rate reports shall be submitted annually thereafter, except as provided for in paragraphs (b)(1)(ii) and (b)(3) of this section.

(A) June 10, 1996, for landfills that commenced construction, modification, or reconstruction on or after May 30, 1991, but before March 12, 1996, or

(B) Ninety days after the date of commenced construction, modification, or reconstruction for landfills that commence construction, modification, or reconstruction on or after March 12, 1996.

(ii) If the estimated NMOC emission rate as reported in the annual report to the Administrator is less than 50 megagrams per year in each of the next 5 consecutive years, the owner or operator may elect to submit an estimate of the NMOC emission rate for the next 5-year period in lieu of the annual report. This estimate shall include the current amount of solid waste-in-place and the estimated waste acceptance rate for each year of the 5 years for which an NMOC emission rate is estimated. All data and calculations upon which this estimate is based shall be provided to the Administrator. This estimate shall be revised at least once every 5 years. If the actual waste acceptance rate exceeds the estimated waste acceptance rate in any year reported in the 5-year estimate, a revised 5-year estimate shall be submitted to the Administrator. The revised estimate shall cover the 5-year period beginning with the year in which the actual waste acceptance rate exceeded the estimated waste acceptance rate.

(2) The NMOC emission rate report shall include all the data, calculations, sample reports and measurements used to estimate the annual or 5-year emissions.

(3) Each owner or operator subject to the requirements of this subpart is exempted from the requirements of paragraphs (b)(1) and (2) of this section, after the installation of a collection and control system in compliance with §60.752(b)(2), during such time as the collection and control system is in operation and in compliance with §§60.753 and 60.755.

(c) Each owner or operator subject to the provisions of §60.752(b)(2)(i) shall submit a collection and control system design plan to the Administrator within 1 year of the first report required under paragraph (b) of this section in which the emission rate equals or exceeds 50 megagrams per year, except as follows:

(1) If the owner or operator elects to recalculate the NMOC emission rate after Tier 2 NMOC sampling and analysis as provided in §60.754(a)(3) and the resulting rate is less than 50 megagrams per year, annual periodic reporting shall be resumed, using the Tier 2 determined site-specific NMOC concentration, until the calculated emission rate is equal to or greater than 50 megagrams per year or the landfill is closed. The revised NMOC emission rate report, with the recalculated emission rate based on NMOC sampling and analysis, shall be submitted within 180 days of the first calculated exceedance of 50 megagrams per year.

(2) If the owner or operator elects to recalculate the NMOC emission rate after determining a site-specific methane generation rate constant (k), as provided in Tier 3 in §60.754(a)(4), and the resulting NMOC emission rate is less than 50 Mg/yr, annual periodic reporting shall be resumed. The resulting site-specific methane generation rate constant (k) shall be used in the emission rate calculation until such time as the emissions rate calculation results in an exceedance. The revised NMOC emission rate report based on the provisions of §60.754(a)(4) and the resulting site-specific methane generation rate constant (k) shall be submitted to the Administrator within 1 year of the first calculated emission rate exceeding 50 megagrams per year.

(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).

(2) Description and duration of all periods when the gas stream is diverted from the control device through a bypass line or the indication of bypass flow as specified under §60.756.

(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.

(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.

[61 FR 9919, Mar. 12, 1996, as amended at 63 FR 32752, June 16, 1998; 65 FR 18909, Apr. 10, 2000]

§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 oC 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.

(2) Each owner or operator subject to the provisions of this subpart shall keep up-to-date, readily accessible continuous records of the indication of flow to the control device or the indication of bypass flow or records of monthly inspections of car-seals or lock-and-key configurations used to seal bypass lines, specified under §60.756.

(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.

[61 FR 9919, Mar. 12, 1996, as amended at 63 FR 32752, June 16, 1998; 65 FR 18909, Apr. 10, 2000]

§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 expandibility, 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:

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

where,

Q_i = NMOC emission rate from the ith section, megagrams per year

k = methane generation rate constant, $year^{-1}$

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

M_i = mass of the degradable solid waste in the ith section, megagram

t_i = age of the solid waste in the ith section, years

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

3.6×10^{-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).

[61 FR 9919, Mar. 12, 1996, as amended at 63 FR 32753, June 16, 1998; 64 FR 9262, Feb. 24, 1999; 65 FR 18909, Apr. 10, 2000]

Attachment B

Part 70 Operating Permit No: T167-36980-00116

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Electronic Code of Federal Regulations

Title 40: Protection of Environment

PART 61—NATIONAL EMISSION STANDARDS FOR HAZARDOUS AIR POLLUTANTS

Subpart M—National Emission Standard for Asbestos

AUTHORITY: 42 U.S.C. 7401, 7412, 7414, 7416, 7601.

SOURCE: 49 FR 13661, Apr. 5, 1984, unless otherwise noted.

§ 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.

[55 FR 48414, Nov. 20, 1990]

§ 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.

[49 FR 13661, Apr. 5, 1984; 49 FR 25453, June 21, 1984, as amended by 55 FR 48414, Nov. 20, 1990; 56 FR 1669, Jan. 16, 1991; 60 FR 31920, June 19, 1995]

§ 61.142 Standard for asbestos mills.

(a) Each owner or operator of an asbestos mill shall either discharge no visible emissions to the outside air from that asbestos mill, including fugitive sources, or use the methods specified by § 61.152 to clean emissions containing particulate asbestos material before they escape to, or are vented to, the outside air.

(b) Each owner or operator of an asbestos mill shall meet the following requirements:

(1) Monitor each potential source of asbestos emissions from any part of the mill facility, including air cleaning devices, process equipment, and buildings that house equipment for material processing and handling, at least once each day, during daylight hours, for visible emissions to the outside air during periods of operation. The monitoring shall be by visual observation of at least 15 seconds duration per source of emissions.

(2) Inspect each air cleaning device at least once each week for proper operation and for changes that signal the potential for malfunction, including, to the maximum extent possible without dismantling other than opening the device, the presence of tears, holes, and abrasions in filter bags and for dust deposits on the clean side of bags. For air cleaning devices that cannot be inspected on a weekly basis according to this paragraph, submit to the Administrator, and revise as necessary, a written maintenance plan to include, at a minimum, the following:

(i) Maintenance schedule.

(ii) Recordkeeping plan.

(3) Maintain records of the results of visible emissions monitoring and air cleaning device inspections using a format similar to that shown in Figures 1 and 2 and include the following:

(i) Date and time of each inspection.

(ii) Presence or absence of visible emissions.

(iii) Condition of fabric filters, including presence of any tears, holes, and abrasions.

(iv) Presence of dust deposits on clean side of fabric filters.

(v) Brief description of corrective actions taken, including date and time.

(vi) Daily hours of operation for each air cleaning device.

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

(5) Retain a copy of all monitoring and inspection records for at least 2 years.

(6) Submit semiannually a copy of visible emission monitoring records to the Administrator if visible emissions occurred during the report period. Semiannual reports shall be postmarked by the 30th day following the end of the six-month period.

Date of inspection (mo/day/yr)	Time of inspection (a.m./p.m.)	Air cleaning device or fugitive source designation or number	Visible emissions observed (yes/no), corrective action taken	Daily operating hours	Inspector's initials

Figure 1. Record of Visible Emission Monitoring

1. Air cleaning device designation or number _____

2. Date of inspection _____ _____ _____ _____

3. Time of inspection _____ _____ _____ _____

4. Is air cleaning device operating properly (yes/no) _____ _____ _____ _____

5. Tears, holes, or abrasions in fabric filter (yes/no) _____ _____ _____ _____

6. Dust on clean side of fabric filters (yes/no) _____ _____ _____ _____

7. Other signs of malfunctions or potential malfunctions (yes/no) _____ _____ _____ _____

8. Describe other malfunctions or signs of potential malfunctions. _____

9. Describe corrective action(s) taken. _____

10. Date and time corrective action taken _____ _____ _____ _____

11. Inspected by

(Print/Type Name)	(Title)	(Signature)	(Date)
(Print/Type Name)	(Title)	(Signature)	(Date)

Figure 2. Air Cleaning Device Inspection Checklist

[55 FR 48416, Nov. 20, 1990, as amended at 64 FR 7467, Feb. 12, 1999]

§ 61.143 Standard for roadways.

No person may construct or maintain a roadway with asbestos tailings or asbestos-containing waste material on that roadway, unless, for asbestos tailings.

(a) It is a temporary roadway on an area of asbestos ore deposits (asbestos mine): or

(b) It is a temporary roadway at an active asbestos mill site and is encapsulated with a resinous or bituminous binder. The encapsulated road surface must be maintained at a minimum frequency of once per year to prevent dust emissions; or

(c) It is encapsulated in asphalt concrete meeting the specifications contained in section 401 of Standard Specifications for Construction of Roads and Bridges on Federal Highway Projects, FP-85, 1985, or their equivalent.

[55 FR 48419, Nov. 20, 1990; 56 FR 1669, Jan. 16, 1991]

§ 61.144 Standard for manufacturing.

(a) *Applicability.* This section applies to the following manufacturing operations using commercial asbestos.

(1) The manufacture of cloth, cord, wicks, tubing, tape, twine, rope, thread, yarn, roving, lap, or other textile materials.

(2) The manufacture of cement products.

(3) The manufacture of fireproofing and insulating materials.

(4) The manufacture of friction products.

(5) The manufacture of paper, millboard, and felt.

(6) The manufacture of floor tile.

(7) The manufacture of paints, coatings, caulks, adhesives, and sealants.

(8) The manufacture of plastics and rubber materials.

(9) The manufacture of chlorine utilizing asbestos diaphragm technology.

(10) The manufacture of shotgun shell wads.

(11) The manufacture of asphalt concrete.

(b) *Standard.* Each owner or operator of any of the manufacturing operations to which this section applies shall either:

(1) Discharge no visible emissions to the outside air from these operations or from any building or structure in which they are conducted or from any other fugitive sources; or

(2) Use the methods specified by § 61.152 to clean emissions from these operations containing particulate asbestos material before they escape to, or are vented to, the outside air.

(3) Monitor each potential source of asbestos emissions from any part of the manufacturing facility, including air cleaning devices, process equipment, and buildings housing material processing and handling equipment, at least once each day during daylight hours for visible emissions to the outside air during periods of operation. The monitoring shall be by visual observation of at least 15 seconds duration per source of emissions.

(4) Inspect each air cleaning device at least once each week for proper operation and for changes that signal the potential for malfunctions, including, to the maximum extent possible without dismantling other than opening the device, the presence of tears, holes, and abrasions in filter bags and for dust deposits on the clean side of bags. For air cleaning devices that cannot be inspected on a weekly basis according to this paragraph, submit to the Administrator, and revise as necessary, a written maintenance plan to include, at a minimum, the following:

(i) Maintenance schedule.

(ii) Recordkeeping plan.

(5) Maintain records of the results of visible emission monitoring and air cleaning device inspections using a format similar to that shown in Figures 1 and 2 and include the following.

(i) Date and time of each inspection.

(ii) Presence or absence of visible emissions.

(iii) Condition of fabric filters, including presence of any tears, holes and abrasions.

(iv) Presence of dust deposits on clean side of fabric filters.

(v) Brief description of corrective actions taken, including date and time.

(vi) Daily hours of operation for each air cleaning device.

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

(7) Retain a copy of all monitoring and inspection records for at least 2 years.

(8) Submit semiannually a copy of the visible emission monitoring records to the Administrator if visible emission occurred during the report period. Semiannual reports shall be postmarked by the 30th day following the end of the six-month period.

[49 FR 13661, Apr. 5, 1984, as amended at 55 FR 48419, Nov. 20, 1990; 56 FR 1669, Jan. 16, 1991; 64 FR 7467, Feb. 12, 1999]

§ 61.145 Standard for demolition and renovation.

(a) *Applicability.* To determine which requirements of paragraphs (a), (b), and (c) of this section apply to the owner or operator of a demolition or renovation activity and prior to the commencement of the demolition or renovation, thoroughly inspect the affected facility or part of the facility where the demolition or renovation operation will occur for the presence of asbestos, including Category I and Category II nonfriable ACM. The requirements of paragraphs (b) and (c) of this section apply to each owner or operator of a demolition or renovation activity, including the removal of RACM as follows:

(1) In a facility being demolished, all the requirements of paragraphs (b) and (c) of this section apply, except as provided in paragraph (a)(3) of this section, if the combined amount of RACM is

(i) At least 80 linear meters (260 linear feet) on pipes or at least 15 square meters (160 square feet) on other facility components, or

(ii) At least 1 cubic meter (35 cubic feet) off facility components where the length or area could not be measured previously.

(2) In a facility being demolished, only the notification requirements of paragraphs (b)(1), (2), (3)(i) and (iv), and (4)(i) through (vii) and (4)(ix) and (xvi) of this section apply, if the combined amount of RACM is

(i) Less than 80 linear meters (260 linear feet) on pipes and less than 15 square meters (160 square feet) on other facility components, and

(ii) Less than one cubic meter (35 cubic feet) off facility components where the length or area could not be measured previously or there is no asbestos.

(3) If the facility is being demolished under an order of a State or local government agency, issued because the facility is structurally unsound and in danger of imminent collapse, only the requirements of paragraphs (b)(1), (b)(2), (b)(3)(iii), (b)(4) (except (b)(4)(viii)), (b)(5), and (c)(4) through (c)(9) of this section apply.

(4) In a facility being renovated, including any individual nonscheduled renovation operation, all the requirements of paragraphs (b) and (c) of this section apply if the combined amount of RACM to be stripped, removed, dislodged, cut, drilled, or similarly disturbed is

(i) At least 80 linear meters (260 linear feet) on pipes or at least 15 square meters (160 square feet) on other facility components, or

(ii) At least 1 cubic meter (35 cubic feet) off facility components where the length or area could not be measured previously.

(iii) To determine whether paragraph (a)(4) of this section applies to planned renovation operations involving individual nonscheduled operations, predict the combined additive amount of RACM to be removed or stripped during a calendar year of January 1 through December 31.

(iv) To determine whether paragraph (a)(4) of this section applies to emergency renovation operations, estimate the combined amount of RACM to be removed or stripped as a result of the sudden, unexpected event that necessitated the renovation.

(5) Owners or operators of demolition and renovation operations are exempt from the requirements of §§ 61.05(a), 61.07, and 61.09.

(b) *Notification requirements.* Each owner or operator of a demolition or renovation activity to which this section applies shall:

(1) Provide the Administrator with written notice of intention to demolish or renovate. Delivery of the notice by U.S. Postal Service, commercial delivery service, or hand delivery is acceptable.

(2) Update notice, as necessary, including when the amount of asbestos affected changes by at least 20 percent.

(3) Postmark or deliver the notice as follows:

(i) At least 10 working days before asbestos stripping or removal work or any other activity begins (such as site preparation that would break up, dislodge or similarly disturb asbestos material), if the operation is described in paragraphs (a) (1) and (4) (except (a)(4)(iii) and (a)(4)(iv)) of this section. If the operation is as described in paragraph (a)(2) of this section, notification is required 10 working days before demolition begins.

(ii) At least 10 working days before the end of the calendar year preceding the year for which notice is being given for renovations described in paragraph (a)(4)(iii) of this section.

(iii) As early as possible before, but not later than, the following working day if the operation is a demolition ordered according to paragraph (a)(3) of this section or, if the operation is a renovation described in paragraph (a)(4)(iv) of this section.

(iv) For asbestos stripping or removal work in a demolition or renovation operation, described in paragraphs (a) (1) and (4) (except (a)(4)(iii) and (a)(4)(iv)) of this section, and for a demolition described in paragraph (a)(2) of this section, that 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 as follows:

(A) When the asbestos stripping or removal operation or demolition operation covered by this paragraph will begin after the date contained in the notice,

(*1*) Notify the Administrator of the new start date by telephone as soon as possible before the original start date, and

(*2*) Provide the Administrator with a written notice of the new start date as soon as possible before, and no later than, the original start date. Delivery of the updated notice by the U.S. Postal Service, commercial delivery service, or hand delivery is acceptable.

(B) When the asbestos stripping or removal operation or demolition operation covered by this paragraph will begin on a date earlier than the original start date,

(*1*) Provide the Administrator with a written notice of the new start date at least 10 working days before asbestos stripping or removal work begins.

(*2*) For demolitions covered by paragraph (a)(2) of this section, provide the Administrator written notice of a new start date at least 10 working days before commencement of demolition. Delivery of updated notice by U.S. Postal Service, commercial delivery service, or hand delivery is acceptable.

(C) In no event shall an operation covered by this paragraph begin on a date other than the date contained in the written notice of the new start date.

(4) Include the following in the notice:

(i) An indication of whether the notice is the original or a revised notification.

(ii) Name, address, and telephone number of both the facility owner and operator and the asbestos removal contractor owner or operator.

(iii) Type of operation: demolition or renovation.

(iv) Description of the facility or affected part of the facility including the size (square meters [square feet] and number of floors), age, and present and prior use of the facility.

(v) Procedure, including analytical methods, employed to detect the presence of RACM and Category I and Category II nonfriable ACM.

(vi) Estimate of the approximate amount of RACM to be removed from the facility in terms of length of pipe in linear meters (linear feet), surface area in square meters (square feet) on other facility components, or volume in cubic meters (cubic feet) if off the facility components. Also, estimate the approximate amount of Category I and Category II nonfriable ACM in the affected part of the facility that will not be removed before demolition.

(vii) Location and street address (including building number or name and floor or room number, if appropriate), city, county, and state, of the facility being demolished or renovated.

(viii) Scheduled starting and completion dates of asbestos removal work (or any other activity, such as site preparation that would break up, dislodge, or similarly disturb asbestos material) in a demolition or renovation; planned renovation operations involving individual nonscheduled operations shall only include the beginning and ending dates of the report period as described in paragraph (a)(4)(iii) of this section.

(ix) Scheduled starting and completion dates of demolition or renovation.

(x) Description of planned demolition or renovation work to be performed and method(s) to be employed, including demolition or renovation techniques to be used and description of affected facility components.

(xi) Description of work practices and engineering controls to be used to comply with the requirements of this subpart, including asbestos removal and waste-handling emission control procedures.

(xii) Name and location of the waste disposal site where the asbestos-containing waste material will be deposited.

(xiii) A certification that at least one person trained as required by paragraph (c)(8) of this section will supervise the stripping and removal described by this notification. This requirement shall become effective 1 year after promulgation of this regulation.

(xiv) For facilities described in paragraph (a)(3) of this section, the name, title, and authority of the State or local government representative who has ordered the demolition, the date that the order was issued, and the date on which the demolition was ordered to begin. A copy of the order shall be attached to the notification.

(xv) For emergency renovations described in paragraph (a)(4)(iv) of this section, the date and hour that the emergency occurred, a description of the sudden, unexpected event, and an explanation of how the event caused an unsafe condition, or would cause equipment damage or an unreasonable financial burden.

(xvi) Description of procedures to be followed in the event that unexpected RACM is found or Category II nonfriable ACM becomes crumbled, pulverized, or reduced to powder.

(xvii) Name, address, and telephone number of the waste transporter.

(5) The information required in paragraph (b)(4) of this section must be reported using a form similiar to that shown in Figure 3.

(c) *Procedures for asbestos emission control.* Each owner or operator of a demolition or renovation activity to whom this paragraph applies, according to paragraph (a) of this section, shall comply with the following procedures:

(1) Remove all RACM from a facility being demolished or renovated before any activity begins that would break up, dislodge, or similarly disturb the material or preclude access to the material for subsequent removal. RACM need not be removed before demolition if:

(i) It is Category I nonfriable ACM that is not in poor condition and is not friable.

(ii) It is on a facility component that is encased in concrete or other similarly hard material and is adequately wet whenever exposed during demolition; or

(iii) It was not accessible for testing and was, therefore, not discovered until after demolition began and, as a result of the demolition, the material cannot be safely removed. If not removed for safety reasons, the exposed RACM and any asbestos-contaminated debris must be treated as asbestos-containing waste material and adequately wet at all times until disposed of.

(iv) They are Category II nonfriable ACM and the probability is low that the materials will become crumbled, pulverized, or reduced to powder during demolition.

(2) When a facility component that contains, is covered with, or is coated with RACM is being taken out of the facility as a unit or in sections:

(i) Adequately wet all RACM exposed during cutting or disjoining operations; and

(ii) Carefully lower each unit or section to the floor and to ground level, not dropping, throwing, sliding, or otherwise damaging or disturbing the RACM.

(3) When RACM is stripped from a facility component while it remains in place in the facility, adequately wet the RACM during the stripping operation.

(i) In renovation operations, wetting is not required if:

(A) The owner or operator has obtained prior written approval from the Administrator based on a written application that wetting to comply with this paragraph would unavoidably damage equipment or present a safety hazard; and

(B) The owner or operator uses of the following emission control methods:

(*1*) A local exhaust ventilation and collection system designed and operated to capture the particulate asbestos material produced by the stripping and removal of the asbestos materials. The system must exhibit no visible emissions to the outside air or be designed and operated in accordance with the requirements in § 61.152.

(*2*) A glove-bag system designed and operated to contain the particulate asbestos material produced by the stripping of the asbestos materials.

(*3*) Leak-tight wrapping to contain all RACM prior to dismantlement.

(ii) In renovation operations where wetting would result in equipment damage or a safety hazard, and the methods allowed in paragraph (c)(3)(i) of this section cannot be used, another method may be used after obtaining written approval from the Administrator based upon a determination that it is equivalent to wetting in controlling emissions or to the methods allowed in paragraph (c)(3)(i) of this section.

(iii) A copy of the Administrator's written approval shall be kept at the worksite and made available for inspection.

(4) After a facility component covered with, coated with, or containing RACM has been taken out of the facility as a unit or in sections pursuant to paragraph (c)(2) of this section, it shall be stripped or contained in leak-tight wrapping, except as described in paragraph (c)(5) of this section. If stripped, either:

(i) Adequately wet the RACM during stripping; or

(ii) Use a local exhaust ventilation and collection system designed and operated to capture the particulate asbestos material produced by the stripping. The system must exhibit no visible emissions to the outside air or be designed and operated in accordance with the requirements in § 61.152.

(5) For large facility components such as reactor vessels, large tanks, and steam generators, but not beams (which must be handled in accordance with paragraphs (c)(2), (3), and (4) of this section), the RACM is not required to be stripped if the following requirements are met:

(i) The component is removed, transported, stored, disposed of, or reused without disturbing or damaging the RACM.

(ii) The component is encased in a leak-tight wrapping.

(iii) The leak-tight wrapping is labeled according to § 61.149(d)(1)(i), (ii), and (iii) during all loading and unloading operations and during storage.

(6) For all RACM, including material that has been removed or stripped:

(i) Adequately wet the material and ensure that it remains wet until collected and contained or treated in preparation for disposal in accordance with § 61.150; and

(ii) Carefully lower the material to the ground and floor, not dropping, throwing, sliding, or otherwise damaging or disturbing the material.

(iii) Transport the material to the ground via leak-tight chutes or containers if it has been removed or stripped more than 50 feet above ground level and was not removed as units or in sections.

(iv) RACM contained in leak-tight wrapping that has been removed in accordance with paragraphs (c)(4) and (c)(3)(i)(B)(*3*) of this section need not be wetted.

(7) When the temperature at the point of wetting is below 0 °C (32 °F):

(i) The owner or operator need not comply with paragraph (c)(2)(i) and the wetting provisions of paragraph (c)(3) of this section.

(ii) The owner or operator shall remove facility components containing, coated with, or covered with RACM as units or in sections to the maximum extent possible.

(iii) During periods when wetting operations are suspended due to freezing temperatures, the owner or operator must record the temperature in the area containing the facility components at the beginning, middle, and end of each workday and keep daily temperature records available for inspection by the Administrator during normal business hours at the demolition or renovation site. The owner or operator shall retain the temperature records for at least 2 years.

(8) Effective 1 year after promulgation of this regulation, no RACM shall be stripped, removed, or otherwise handled or disturbed at a facility regulated by this section unless at least one on-site representative, such as a foreman or management-level person or other authorized representative, trained in the provisions of this regulation and the means of complying with them, is present. Every 2 years, the trained on-site individual shall receive refresher training in the provisions of this regulation. The required training shall include as a minimum: applicability; notifications;

material identification; control procedures for removals including, at least, wetting, local exhaust ventilation, negative pressure enclosures, glove-bag procedures, and High Efficiency Particulate Air (HEPA) filters; waste disposal work practices; reporting and recordkeeping; and asbestos hazards and worker protection. Evidence that the required training has been completed shall be posted and made available for inspection by the Administrator at the demolition or renovation site.

(9) For facilities described in paragraph (a)(3) of this section, adequately wet the portion of the facility that contains RACM during the wrecking operation.

(10) If a facility is demolished by intentional burning, all RACM including Category I and Category II nonfriable ACM must be removed in accordance with the NESHAP before burning.

NOTIFICATION OF DEMOLITION AND RENOVATION

Operator Project #	Postmark	Date Received	Notification #

I. TYPE OF NOTIFICATION (O=Original R=Revised C=Cancelled):

II. FACILITY INFORMATION (Identify owner, removal contractor, and other operator)

OWNER NAME:
Address:
City: State: Zip:
Contact: Tel:

REMOVAL CONTRACTOR:
Address:
City: State: Zip:
Contact: Tel:

OTHER OPERATOR:
Address:
City: State: Zip:
Contact: Tel:

III. TYPE OF OPERATION (D=Demo O=Ordered Demo R=Renovation E=Emer.Renovation):

IV. IS ASBESTOS PRESENT? (Yes/No)

V. FACILITY DESCRIPTION (Include building name, number and floor or room number)

Bldg Name:
Address:
City: State: County:
Site Location:
Building Size: # of Floors: Age in Years:
Present Use: Prior Use:

VI. PROCEDURE, INCLUDING ANALYTICAL METHOD, IF APPROPRIATE, USED TO DETECT THE PRESENCE OF ASBESTOS MATERIAL:

VII. APPROXIMATE AMOUNT OF ASBESTOS, INCLUDING: 1. Regulated ACM to be removed 2. Category I ACM Not Removed 3. Category II ACM Not Removed	RACM To Be Removed	Nonfriable Asbestos Material Not To Be Removed		Indicate Unit of Measurement Below	
		Cat I	Cat II	UNIT	
Pipes				LnFt:	Lin M:
Surface Area				SqFt:	Sq M:
Vol RACM Off Facility Component				CuFt:	Cu M:

VIII. SCHEDULED DATES ASBESTOS REMOVAL (MM/DD/YY) Start: Complete:

IX. SCHEDULED DATES DEMO/RENOVATION (MM/DD/YY) Start: Complete:

Continued on page two

Figure 3. Notification of Demolition and Renovation

NOTIFICATION OF DEMOLITION AND RENOVATION (continued)

X. DESCRIPTION OF PLANNED DEMOLITION OR RENOVATION WORK, AND METHOD(S) TO BE USED:		
XI. DESCRIPTION OF WORK PRACTICES AND ENGINEERING CONTROLS TO BE USED TO PREVENT EMISSIONS OF ASBESTOS AT THE DEMOLITION AND RENOVATION SITE:		
XII. WASTE TRANSPORTER #1		
Name:		
Address		
City:	State:	Zip:
Contact Person:		Telephone:
WASTE TRANSPORTER #2		
Name:		
Address:		
City:	State:	Zip:
Contact Person:		Telephone:
XIII. WASTE DISPOSAL SITE		
Name:		
Location:		
City:	State:	Zip:
Telephone:		
XIV. IF DEMOLITION ORDERED BY A GOVERNMENT AGENCY, PLEASE IDENTIFY THE AGENCY BELOW:		
Name:	Title:	
Authority:		
Date of Order (MM/DD/YY):	Date Ordered to Begin (MM/DD/YY):	
XV. FOR EMERGENCY RENOVATIONS:		
Date and Hour of Emergency (MM/DD/YY):		
Description of the sudden, unexpected event:		
Explanation of how the event caused unsafe conditions or would cause equipment damage or an unreasonable financial burden:		
XVI. DESCRIPTION OF PROCEDURES TO BE FOLLOWED IN THE EVENT THAT UNEXPECTED ASBESTOS IS FOUND OR PREVIOUSLY NONFRIABLE ASBESTOS MATERIAL BECOMES CRUMBLED, PULVERIZED, OR REDUCED TO POWDER.		
XVI. I CERTIFY THAT AN INDIVIDUAL TRAINED IN THE PROVISIONS OF THIS REGULATION (40 CFR PART 61, SUBPART M) WILL BE ON-SITE DURING THE DEMOLITION OR RENOVATION AND EVIDENCE THAT THE REQUIRED TRAINING HAS BEEN ACCOMPLISHED BY THIS PERSON WILL BE AVAILABLE FOR INSPECTION DURING NORMAL BUSINESS HOURS. (Required 1 year after promulgation)		
(Signature of Owner/Operator)		(Date)
XVII. I CERTIFY THAT THE ABOVE INFORMATION IS CORRECT.		
(Signature of Owner/Operator)		(Date)

Figure 3. Notification of Demolition and Renovation

[55 FR 48419, Nov. 20, 1990; 56 FR 1669, Jan. 16, 1991]

§ 61.146 Standard for spraying.

The owner or operator of an operation in which asbestos-containing materials are spray applied shall comply with the following requirements:

(a) For spray-on application on buildings, structures, pipes, and conduits, do not use 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, except as provided in paragraph (c) of this section.

(b) For spray-on application of materials that contain 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, on equipment and machinery, except as provided in paragraph (c) of this section:

(1) Notify the Administrator at least 20 days before beginning the spraying operation. Include the following information in the notice:

(i) Name and address of owner or operator.

(ii) Location of spraying operation.

(iii) Procedures to be followed to meet the requirements of this paragraph.

(2) Discharge no visible emissions to the outside air from spray-on application of the asbestos-containing material or use the methods specified by § 61.152 to clean emissions containing particulate asbestos material before they escape to, or are vented to, the outside air.

(c) The requirements of paragraphs (a) and (b) of this section do not apply to the spray-on application of materials where the asbestos fibers in the materials are encapsulated with a bituminous or resinous binder during spraying and the materials are not friable after drying.

(d) Owners or operators of sources subject to this paragraph are exempt from the requirements of §§ 61.05(a), 61.07 and 61.09.

[49 FR 13661, Apr. 5, 1984. Redesignated and amended at 55 FR 48424, Nov. 20, 1990; 60 FR 31920, June 19, 1995]

§ 61.147 Standard for fabricating.

(a) *Applicability.* This section applies to the following fabricating operations using commercial asbestos:

(1) The fabrication of cement building products.

(2) The fabrication of friction products, except those operations that primarily install asbestos friction materials on motor vehicles.

(3) The fabrication of cement or silicate board for ventilation hoods; ovens; electrical panels; laboratory furniture, bulkheads, partitions, and ceilings for marine construction; and flow control devices for the molten metal industry.

(b) *Standard.* Each owner or operator of any of the fabricating operations to which this section applies shall either:

(1) Discharge no visible emissions to the outside air from any of the operations or from any building or structure in which they are conducted or from any other fugitive sources; or

(2) Use the methods specified by § 61.152 to clean emissions containing particulate asbestos material before they escape to, or are vented to, the outside air.

(3) Monitor each potential source of asbestos emissions from any part of the fabricating facility, including air cleaning devices, process equipment, and buildings that house equipment for material processing and handling, at least once each day, during daylight hours, for visible emissions to the outside air during periods of operation. The monitoring shall be by visual observation of at least 15 seconds duration per source of emissions.

(4) Inspect each air cleaning device at least once each week for proper operation and for changes that signal the potential for malfunctions, including, to the maximum extent possible without dismantling other than opening the device, the presence of tears, holes, and abrasions in filter bags and for dust deposits on the clean side of bags. For air cleaning devices that cannot be inspected on a weekly basis according to this paragraph, submit to the Administrator, and revise as necessary, a written maintenance plan to include, at a minimum, the following:

(i) Maintenance schedule.

(ii) Recordkeeping plan.

(5) Maintain records of the results of visible emission monitoring and air cleaning device inspections using a format similar to that shown in Figures 1 and 2 and include the following:

(i) Date and time of each inspection.

(ii) Presence or absence of visible emissions.

(iii) Condition of fabric filters, including presence of any tears, holes, and abrasions.

(iv) Presence of dust deposits on clean side of fabric filters.

(v) Brief description of corrective actions taken, including date and time.

(vi) Daily hours of operation for each air cleaning device.

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

(7) Retain a copy of all monitoring and inspection records for at least 2 years.

(8) Submit semiannually a copy of the visible emission monitoring records to the Administrator if visible emission occurred during the report period. Semiannual reports shall be postmarked by the 30th day following the end of the six-month period.

[49 FR 13661, Apr. 5, 1984. Redesignated and amended at 55 FR 48424, Nov. 20, 1991; 64 FR 7467, Feb. 12, 1999]

§ 61.148 Standard for insulating materials.

No owner or operator of a facility may install or reinstall on a facility component any insulating materials that contain commercial asbestos if the materials are either molded and friable or wet-applied and friable after drying. The provisions of this section do not apply to spray-applied insulating materials regulated under § 61.146.

[55 FR 48424, Nov. 20, 1990]

§ 61.149 Standard for waste disposal for asbestos mills.

Each owner or operator of any source covered under the provisions of § 61.142 shall:

(a) Deposit all asbestos-containing waste material at a waste disposal site operated in accordance with the provisions of § 61.154; and

(b) Discharge no visible emissions to the outside air from the transfer of control device asbestos waste to the tailings conveyor, or use the methods specified by § 61.152 to clean emissions containing particulate asbestos material before they escape to, or are vented to, the outside air. Dispose of the asbestos waste from control devices in accordance with § 61.150(a) or paragraph (c) of this section; and

(c) Discharge no visible emissions to the outside air during the collection, processing, packaging, or on-site transporting of any asbestos-containing waste material, or use one of the disposal methods specified in paragraphs (c) (1) or (2) of this section, as follows:

(1) Use a wetting agent as follows:

(i) Adequately mix all asbestos-containing waste material with a wetting agent recommended by the manufacturer of the agent to effectively wet dust and tailings, before depositing the material at a waste disposal site. Use the agent as recommended for the particular dust by the manufacturer of the agent.

(ii) Discharge no visible emissions to the outside air from the wetting operation or use the methods specified by § 61.152 to clean emissions containing particulate asbestos material before they escape to, or are vented to, the outside air.

(iii) Wetting may be suspended when the ambient temperature at the waste disposal site is less than −9.5 °C (15 °F), as determined by an appropriate measurement method with an accuracy of ±1 °C (±2 °F). During periods when

wetting operations are suspended, the temperature must be recorded at least at hourly intervals, and records must be retained for at least 2 years in a form suitable for inspection.

(2) Use an alternative emission control and waste treatment method that has received prior written approval by the Administrator. To obtain approval for an alternative method, a written application must be submitted to the Administrator demonstrating that the following criteria are met:

(i) The alternative method will control asbestos emissions equivalent to currently required methods.

(ii) The suitability of the alternative method for the intended application.

(iii) The alternative method will not violate other regulations.

(iv) The alternative method will not result in increased water pollution, land pollution, or occupational hazards.

(d) When waste is transported by vehicle to a disposal site:

(1) Mark vehicles used to transport asbestos-containing waste material during the loading and unloading of the waste so that the signs are visible. The markings must:

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

(ii) Conform to the requirements for 51 cm × 36 cm (20 in × 14 in) 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.

Legend

DANGER

ASBESTOS DUST HAZARD

CANCER AND LUNG DISEASE HAZARD

Authorized Personnel Only

Notation

2.5 cm (1 inch) Sans Serif, Gothic or Block

2.5 cm (1 inch) Sans Serif, Gothic or Block

1.9 cm (¾ inch) Sans Serif, Gothic or Block

14 Point Gothic

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

(2) For off-site disposal, provide a copy of the waste shipment record, described in paragraph (e)(1) of this section, to the disposal site owner or operator at the same time as the asbestos-containing waste material is delivered to the disposal site.

(e) For all asbestos-containing waste material transported off the facility site:

(1) Maintain asbestos 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 and address of the local, State, or EPA Regional agency responsible for administering the asbestos NESHAP program.

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

(iv) The name and telephone number of the disposal site operator.

(v) The name and physical site location of the disposal site.

(vi) The date transported.

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

(viii) A certification that the contents of this consignment are fully and accurately described by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and government regulations.

(2) For waste shipments where a copy of the waste shipment record, signed by the owner or operator of the designated disposal site, is not received by the waste generator within 35 days of the date the waste was accepted by the initial transporter, contact the transporter and/or the owner or operator of the designated disposal site to determine the status of the waste shipment.

(3) Report in writing to the local, State, or EPA Regional office responsible for administering the asbestos NESHAP program for the waste generator if a copy of the waste shipment record, signed by the owner or operator of the designated waste disposal site, is not received by the waste generator within 45 days of the date the waste was accepted by the initial transporter. Include in the report the following information:

(i) A copy of the waste shipment record for which a confirmation of delivery was not received, and

(ii) A cover letter signed by the waste generator explaining the efforts taken to locate the asbestos waste shipment and the results of those efforts.

(4) Retain a copy of all waste shipment records, including a copy of the waste shipment record signed by the owner or operator of the designated waste disposal site, for at least 2 years.

(f) Furnish upon request, and make available for inspection by the Administrator, all records required under this section.

Generator	1. Work site name and mailing address	Owner's name	Owner's telephone no.
	2. Operator's name and address		Operator's telephone no.
	3. Waste disposal site (WDS) name, mailing address, and physical site location		WDS phone no.
	4. Name, and address of responsible agency		
	5. Description of materials	6. Containers No. Type	7. Total quantity m^3 (yd^3)
	8. Special handling instructions and additional information		
	9. OPERATOR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and government regulations.		
	Printed/typed name & title	Signature	Month Day Year
Transporter	10. Transporter 1 (Acknowledgment of receipt of materials)		
	Printed/typed name & title Address and telephone no.	Signature	Month Day Year
	11. Transporter 2 (Acknowledgment of receipt of materials)		
	Printed/typed name & title Address and telephone no.	Signature	Month Day Year
Disposal Site	12. Discrepancy indication space		
	13. Waste disposal site owner or operator: Certification of receipt of asbestos materials covered by this manifest except as noted in item 12.		
	Printed/typed name & title	Signature	Month Day Year

(Continued)

Figure 4. Waste Shipment Record

INSTRUCTIONS

Waste Generator Section (Items 1-9)

1. Enter the name of the facility at which asbestos waste is generated and the address where the facility is located. In the appropriate spaces, also enter the name of the owner of the facility and the owner's phone number.

2. If a demolition or renovation, enter the name and address of the company and authorized agent responsible for performing the asbestos removal. In the appropriate spaces, also enter the phone number of the operator.

3. Enter the name, address, and physical site location of the waste disposal site (WDS) that will be receiving the asbestos materials. In the appropriate spaces, also enter the phone number of the WDS. Enter "on-site" if the waste will be disposed of on the generator's property.

4. Provide the name and address of the local, State, or EPA Regional office responsible for administering the asbestos NESHAP program.

5. Indicate the types of asbestos waste materials generated. If from a demolition or renovation, indicate the amount of asbestos that is

   - Friable asbestos material
   - Nonfriable asbestos material

6. Enter the number of containers used to transport the asbestos materials listed in item 5. Also enter one of the following container codes used in transporting each type of asbestos material (specify any other type of container used if not listed below):

   DM - Metal drums, barrels
   DP - Plastic drums, barrels
   BA - 6 mil plastic bags or wrapping

7. Enter the quantities of each type of asbestos material removed in units of cubic meters (cubic yards).

8. Use this space to indicate special transportation, treatment, storage or disposal or Bill of Lading information. If an alternate waste disposal site is designated, note it here. Emergency response telephone numbers or similar information may be included here.

9. The authorized agent of the waste generator must read and then sign and date this certification. The date is the date of receipt by transporter.

NOTE: The waste generator must retain a copy of this form.

(continued)

Figure 4. Waste Shipment Record

Transporter Section (Items 10 & 11)

10. & 11. Enter name, address, and telephone number of each transporter used, if applicable. Print or type the full name and title of person accepting responsibility and acknowledging receipt of materials as listed on this waste shipment record for transport. Enter date of receipt and signature.

NOTE: The transporter must retain a copy of this form.

Disposal Site Section (Items 12 & 13)

12. The authorized representative of the WDS must note in this space any discrepancy between waste described on this manifest and waste actually received as well as any improperly enclosed or contained waste. Any rejected materials should be listed and destination of those materials provided. A site that converts asbestos-containing waste material to nonasbestos material is considered a WDS.

13. The signature (by hand) of the authorized WDS agent indicates acceptance and agreement with statements on this manifest except as noted in item 12. The date is the date of signature and receipt of shipment.

NOTE: The WDS must retain a completed copy of this form. The WDS must also send a completed copy to the operator listed in item 2.

Figure 4. Waste Shipment Record

§ 61.150 Standard for waste disposal for manufacturing, fabricating, demolition, renovation, and spraying operations.

Each owner or operator of any source covered under the provisions of §§ 61.144, 61.145, 61.146, and 61.147 shall comply with the following provisions:

(a) Discharge no visible emissions to the outside air during the collection, processing (including incineration), packaging, or transporting of any asbestos-containing waste material generated by the source, or use one of the emission control and waste treatment methods specified in paragraphs (a) (1) through (4) of this section.

(1) Adequately wet asbestos-containing waste material as follows:

(i) Mix control device asbestos waste to form a slurry; adequately wet other asbestos-containing waste material; and

(ii) Discharge no visible emissions to the outside air from collection, mixing, wetting, and handling operations, or use the methods specified by § 61.152 to clean emissions containing particulate asbestos material before they escape to, or are vented to, the outside air; and

(iii) After wetting, seal all asbestos-containing waste material in leak-tight containers while wet; or, for materials that will not fit into containers without additional breaking, put materials into leak-tight wrapping; and

(iv) Label the containers or wrapped materials specified in paragraph (a)(1)(iii) of this section using warning labels specified by Occupational Safety and Health Standards of the Department of Labor, Occupational Safety and Health Administration (OSHA) under 29 CFR 1910.1001(j)(4) or 1926.1101(k)(8). The labels shall be printed in letters of sufficient size and contrast so as to be readily visible and legible.

(v) For asbestos-containing waste material to be transported off the facility site, label containers or wrapped materials with the name of the waste generator and the location at which the waste was generated.

(2) Process asbestos-containing waste material into nonfriable forms as follows:

(i) Form all asbestos-containing waste material into nonfriable pellets or other shapes;

(ii) Discharge no visible emissions to the outside air from collection and processing operations, including incineration, or use the method specified by § 61.152 to clean emissions containing particulate asbestos material before they escape to, or are vented to, the outside air.

(3) For facilities demolished where the RACM is not removed prior to demolition according to §§ 61.145(c)(1) (i), (ii), (iii), and (iv) or for facilities demolished according to § 61.145(c)(9), adequately wet asbestos-containing waste material at all times after demolition and keep wet during handling and loading for transport to a disposal site. Asbestos-containing waste materials covered by this paragraph do not have to be sealed in leak-tight containers or wrapping but may be transported and disposed of in bulk.

(4) Use an alternative emission control and waste treatment method that has received prior approval by the Administrator according to the procedure described in § 61.149(c)(2).

(5) As applied to demolition and renovation, the requirements of paragraph (a) of this section do not apply to Category I nonfriable ACM waste and Category II nonfriable ACM waste that did not become crumbled, pulverized, or reduced to powder.

(b) All asbestos-containing waste material shall be deposited as soon as is practical by the waste generator at:

(1) A waste disposal site operated in accordance with the provisions of § 61.154, or

(2) An EPA-approved site that converts RACM and asbestos-containing waste material into nonasbestos (asbestos-free) material according to the provisions of § 61.155.

(3) The requirements of paragraph (b) of this section do not apply to Category I nonfriable ACM that is not RACM.

(c) Mark vehicles used to transport asbestos-containing waste material during the loading and unloading of waste so that the signs are visible. The markings must conform to the requirements of §§ 61.149(d)(1) (i), (ii), and (iii).

(d) For all asbestos-containing waste material transported off the facility site:

(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 and address of the local, State, or EPA Regional office responsible for administering the asbestos NESHAP program.

(iii) The approximate quantity in cubic meters (cubic yards).

(iv) The name and telephone number of the disposal site operator.

(v) The name and physical site location of the disposal site.

(vi) The date transported.

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

(viii) A certification that the contents of this consignment are fully and accurately described by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and government regulations.

(2) Provide a copy of the waste shipment record, described in paragraph (d)(1) of this section, to the disposal site owners or operators at the same time as the asbestos-containing waste material is delivered to the disposal site.

(3) For waste shipments where a copy of the waste shipment record, signed by the owner or operator of the designated disposal site, is not received by the waste generator within 35 days of the date the waste was accepted by the initial transporter, contact the transporter and/or the owner or operator of the designated disposal site to determine the status of the waste shipment.

(4) Report in writing to the local, State, or EPA Regional office responsible for administering the asbestos NESHAP program for the waste generator if a copy of the waste shipment record, signed by the owner or operator of the designated waste disposal site, is not received by the waste generator within 45 days of the date the waste was accepted by the initial transporter. Include in the report the following information:

(i) A copy of the waste shipment record for which a confirmation of delivery was not received, and

(ii) A cover letter signed by the waste generator explaining the efforts taken to locate the asbestos waste shipment and the results of those efforts.

(5) Retain a copy of all waste shipment records, including a copy of the waste shipment record signed by the owner or operator of the designated waste disposal site, for at least 2 years.

(e) Furnish upon request, and make available for inspection by the Administrator, all records required under this section.

[55 FR 48429, Nov. 20, 1990; 56 FR 1669, Jan. 16, 1991, as amended at 68 FR 54793, Sept. 18, 2003]

§ 61.151 Standard for inactive waste disposal sites for asbestos mills and manufacturing and fabricating operations.

Each owner or operator of any inactive waste disposal site that was operated by sources covered under § 61.142, 61.144, or 61.147 and received deposits of asbestos-containing waste material generated by the sources, shall:

(a) Comply with one of the following:

(1) Either discharge no visible emissions to the outside air from an inactive waste disposal site subject to this paragraph; or

(2) Cover the asbestos-containing waste material with at least 15 centimeters (6 inches) of compacted nonasbestos-containing material, and grow and maintain a cover of vegetation on the area adequate to prevent exposure of the asbestos-containing waste material. In desert areas where vegetation would be difficult to maintain, at least 8 additional centimeters (3 inches) of well-graded, nonasbestos crushed rock may be placed on top of the final cover instead of vegetation and maintained to prevent emissions; or

(3) Cover the asbestos-containing waste material with at least 60 centimeters (2 feet) of compacted nonasbestos-containing material, and maintain it to prevent exposure of the asbestos-containing waste; or

(4) For inactive waste disposal sites for asbestos tailings, a resinous or petroleum-based dust suppression agent that effectively binds dust to control surface air emissions may be used instead of the methods in paragraphs (a) (1), (2), and (3) of this section. Use the agent in the manner and frequency recommended for the particular asbestos tailings by the manufacturer of the dust suppression agent to achieve and maintain dust control. Obtain prior written approval of the Administrator to use other equally effective dust suppression agents. For purposes of this paragraph, any used, spent, or other waste oil is not considered a dust suppression agent.

(b) Unless a natural barrier adequately deters access by the general public, install and maintain warning signs and fencing as follows, or comply with paragraph (a)(2) or (a)(3) of this section.

(1) Display warning signs at all entrances and at intervals of 100 m (328 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 was 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 for 51 cm×36 cm (20″×14″) 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.

Legend	**Notation**
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) Fence the perimeter of the site in a manner adequate to deter access by the general public.

(3) When requesting a determination on whether a natural barrier adequately deters public access, supply information enabling the Administrator to determine whether a fence or a natural barrier adequately deters access by the general public.

(c) The owner or operator may use an alternative control method that has received prior approval of the Administrator rather than comply with the requirements of paragraph (a) or (b) of this section.

(d) 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 under this section, and follow the procedures specified in the notification. 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.

(e) Within 60 days of a site becoming inactive and after the effective date of this subpart, record, in accordance with State law, a notation on the deed to the facility property and on any other instrument that would normally be examined during a title search; this notation will in perpetuity notify any potential purchaser of the property that:

(1) The land has been used for the disposal of asbestos-containing waste material;

(2) The survey plot and record of the location and quantity of asbestos-containing waste disposed of within the disposal site required in § 61.154(f) have been filed with the Administrator; and

(3) The site is subject to 40 CFR part 61, subpart M.

[49 FR 13661, Apr. 5, 1984, as amended at 53 FR 36972, Sept. 23, 1988. Redesignated and amended at 55 FR 48429, Nov. 20, 1990]

§ 61.152 Air-cleaning.

(a) The owner or operator who uses air cleaning, as specified in §§ 61.142(a), 61.144(b)(2), 61.145(c)(3)(i)(B)(*1*), 61.145(c)(4)(ii), 61.145(c)(11)(i), 61.146(b)(2), 61.147(b)(2), 61.149(b), 61.149(c)(1)(ii), 61.150(a)(1)(ii), 61.150(a)(2)(ii), and 61.155(e) shall:

(1) Use fabric filter collection devices, except as noted in paragraph (b) of this section, doing all of the following:

(i) Ensuring that the airflow permeability, as determined by ASTM Method D737-75, does not exceed 9 m^3 /min/m^2 (30 ft^3 /min/ft^2) for woven fabrics or 11^3 /min/m^2 (35 ft^3 /min/ft^2) for felted fabrics, except that 12 m^3 /min/m^2 (40 ft^3 min/ft^2) for woven and 14 m^3 /min/m^2 (45 ft^3 min/ft^2) for felted fabrics is allowed for filtering air from asbestos ore dryers; and

(ii) Ensuring that felted fabric weighs at least 475 grams per square meter (14 ounces per square yard) and is at least 1.6 millimeters (one-sixteenth inch) thick throughout; and

(iii) Avoiding the use of synthetic fabrics that contain fill yarn other than that which is spun.

(2) Properly install, use, operate, and maintain all air-cleaning equipment authorized by this section. Bypass devices may be used only during upset or emergency conditions and then only for so long as it takes to shut down the operation generating the particulate asbestos material.

(3) For fabric filter collection devices installed after January 10, 1989, provide for easy inspection for faulty bags.

(b) There are the following exceptions to paragraph (a)(1):

(1) After January 10, 1989, if the use of fabric creates a fire or explosion hazard, or the Administrator determines that a fabric filter is not feasible, the Administrator may authorize as a substitute the use of wet collectors designed to operate with a unit contacting energy of at least 9.95 kilopascals (40 inches water gage pressure).

(2) Use a HEPA filter that is certified to be at least 99.97 percent efficient for 0.3 micron particles.

(3) The Administrator may authorize the use of filtering equipment other than described in paragraphs (a)(1) and (b)(1) and (2) of this section if the owner or operator demonstrates to the Administrator's satisfaction that it is equivalent to the described equipment in filtering particulate asbestos material.

[49 FR 13661, Apr. 5, 1984; 49 FR 25453, June 21, 1984, as amended at 51 FR 8199, Mar. 10, 1986. Redesignated and amended at 55 FR 48430, Nov. 20, 1990]

§ 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.

(1) A description of the emission control equipment used for each process; and

(i) If the fabric device uses a woven fabric, the airflow permeability in m^3 /min/m^2 and; if the fabric is synthetic, whether the fill yarn is spun or not spun; and

(ii) If the fabric filter device uses a felted fabric, the density in g/m^2 , the minimum thickness in inches, and the airflow permeability in m^3 /min/m^2 .

(2) If a fabric filter device is used to control emissions,

(i) The airflow permeability in m^3 /min/m^2 (ft^3 /min/ft^2) if the fabric filter device uses a woven fabric, and, if the fabric is synthetic, whether the fill yarn is spun or not spun; and

(ii) If the fabric filter device uses a felted fabric, the density in g/m^2 (oz/yd^2), the minimum thickness in millimeters (inches), and the airflow permeability in m^3 /min/m^2 (ft^3 /min/ft^2).

(3) If a HEPA filter is used to control emissions, the certified efficiency.

(4) For sources subject to §§ 61.149 and 61.150:

(i) A brief description of each process that generates asbestos-containing waste material; and

(ii) The average volume of asbestos-containing waste material disposed of, measured in m^3 /day (yd^3 /day); and

(iii) The emission control methods used in all stages of waste disposal; and

(iv) The type of disposal site or incineration site used for ultimate disposal, the name of the site operator, and the name and location of the disposal site.

(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.

(Sec. 114. Clean Air Act as amended (42 U.S.C. 7414))

[49 FR 13661, Apr. 5, 1984. Redesignated and amended at 55 FR 48430, Nov. 20, 1990; 56 FR 1669, Jan. 16, 1991]

§ 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″×14″) 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.

Legend	**Notation**
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.

(Secs. 112 and 301(a) of the Clean Air Act as amended (42 U.S.C. 7412, 7601(a))

[49 FR 13661, Apr. 5, 1990. Redesignated and amended at 55 FR 48431, Nov. 20, 1990; 56 FR 1669, Jan. 16, 1991]

§ 61.155 Standard for operations that convert asbestos-containing waste material into nonasbestos (asbestos-free) material.

Each owner or operator of an operation that converts RACM and asbestos-containing waste material into nonasbestos (asbestos-free) material shall:

(a) Obtain the prior written approval of the Administrator to construct the facility. To obtain approval, the owner or operator shall provide the Administrator with the following information:

(1) Application to construct pursuant to § 61.07.

(2) In addition to the information requirements of § 61.07(b)(3), a

(i) Description of waste feed handling and temporary storage.

(ii) Description of process operating conditions.

(iii) Description of the handling and temporary storage of the end product.

(iv) Description of the protocol to be followed when analyzing output materials by transmission electron microscopy.

(3) Performance test protocol, including provisions for obtaining information required under paragraph (b) of this section.

(4) The Administrator may require that a demonstration of the process be performed prior to approval of the application to construct.

(b) Conduct a start-up performance test. Test results shall include:

(1) A detailed description of the types and quantities of nonasbestos material, RACM, and asbestos-containing waste material processed, *e.g.,* asbestos cement products, friable asbestos insulation, plaster, wood, plastic, wire, etc. Test feed is to include the full range of materials that will be encountered in actual operation of the process.

(2) Results of analyses, using polarized light microscopy, that document the asbestos content of the wastes processed.

(3) Results of analyses, using transmission electron microscopy, that document that the output materials are free of asbestos. Samples for analysis are to be collected as 8-hour composite samples (one 200-gram (7-ounce) sample per hour), beginning with the initial introduction of RACM or asbestos-containing waste material and continuing until the end of the performance test.

(4) A description of operating parameters, such as temperature and residence time, defining the full range over which the process is expected to operate to produce nonasbestos (asbestos-free) materials. Specify the limits for each operating parameter within which the process will produce nonasbestos (asbestos-free) materials.

(5) The length of the test.

(c) During the initial 90 days of operation,

(1) Continuously monitor and log the operating parameters identified during start-up performance tests that are intended to ensure the production of nonasbestos (asbestos-free) output material.

(2) Monitor input materials to ensure that they are consistent with the test feed materials described during start-up performance tests in paragraph (b)(1) of this section.

(3) Collect and analyze samples, taken as 10-day composite samples (one 200-gram (7-ounce) sample collected every 8 hours of operation) of all output material for the presence of asbestos. Composite samples may be for fewer than 10 days. Transmission electron microscopy (TEM) shall be used to analyze the output material for the presence of asbestos. During the initial 90-day period, all output materials must be stored on-site until analysis shows the material to be asbestos-free or disposed of as asbestos-containing waste material according to § 61.150.

(d) After the initial 90 days of operation,

(1) Continuously monitor and record the operating parameters identified during start-up performance testing and any subsequent performance testing. Any output produced during a period of deviation from the range of operating conditions established to ensure the production of nonasbestos (asbestos-free) output materials shall be:

(i) Disposed of as asbestos-containing waste material according to § 61.150, or

(ii) Recycled as waste feed during process operation within the established range of operating conditions, or

(iii) Stored temporarily on-site in a leak-tight container until analyzed for asbestos content. Any product material that is not asbestos-free shall be either disposed of as asbestos-containing waste material or recycled as waste feed to the process.

(2) Collect and analyze monthly composite samples (one 200-gram (7-ounce) sample collected every 8 hours of operation) of the output material. Transmission electron microscopy shall be used to analyze the output material for the presence of asbestos.

(e) Discharge no visible emissions to the outside air from any part of the operation, or use the methods specified by § 61.152 to clean emissions containing particulate asbestos material before they escape to, or are vented to, the outside air.

(f) Maintain records on-site and include the following information:

(1) Results of start-up performance testing and all subsequent performance testing, including operating parameters, feed characteristic, and analyses of output materials.

(2) Results of the composite analyses required during the initial 90 days of operation under § 61.155(c).

(3) Results of the monthly composite analyses required under § 61.155(d).

(4) Results of continuous monitoring and logs of process operating parameters required under § 61.155 (c) and (d).

(5) The information on waste shipments received as required in § 61.154(e).

(6) For output materials where no analyses were performed to determine the presence of asbestos, record the name and location of the purchaser or disposal site to which the output materials were sold or deposited, and the date of sale or disposal.

(7) Retain records required by paragraph (f) of this section for at least 2 years.

(g) Submit the following reports to the Administrator:

(1) A report for each analysis of product composite samples performed during the initial 90 days of operation.

(2) A quarterly report, including the following information concerning activities during each consecutive 3-month period:

(i) Results of analyses of monthly product composite samples.

(ii) A description of any deviation from the operating parameters established during performance testing, the duration of the deviation, and steps taken to correct the deviation.

(iii) Disposition of any product produced during a period of deviation, including whether it was recycled, disposed of as asbestos-containing waste material, or stored temporarily on-site until analyzed for asbestos content.

(iv) The information on waste disposal activities as required in § 61.154(f).

(h) Nonasbestos (asbestos-free) output material is not subject to any of the provisions of this subpart. Output materials in which asbestos is detected, or output materials produced when the operating parameters deviated from those established during the start-up performance testing, unless shown by TEM analysis to be asbestos-free, shall be considered to be asbestos-containing waste and shall be handled and disposed of according to §§ 61.150 and 61.154 or reprocessed while all of the established operating parameters are being met.

[55 FR 48431, Nov. 20, 1990]

§ 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.

Agency	CFR citation	Comment
	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.

[55 FR 48432, Nov. 20, 1990, as amended at 60 FR 31920, June 19, 1995; 68 FR 54793, Sept. 18, 2003; 69 FR 43324, July 20, 2004]

§ 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).

[55 FR 48433, Nov. 20, 1990]

Appendix A to Subpart M of Part 61—Interpretive Rule Governing Roof Removal Operations

I. Applicability of the Asbestos NESHAP

1.1. Asbestos-containing material (ACM) is material containing more than one percent asbestos as determined using the methods specified in appendix E, subpart E, 40 CFR part 763, section 1, Polarized Light Microscopy. The NESHAP classifies ACM as either “friable” or “nonfriable”. Friable ACM is ACM that, when dry, can be crumbled, pulverized or reduced to powder by hand pressure. Nonfriable ACM is ACM that, when dry, cannot be crumbled, pulverized or reduced to powder by hand pressure.

1.2. Nonfriable ACM is further classified as either Category I ACM or Category II ACM. Category I ACM and Category II ACM are distinguished from each other by their potential to release fibers when damaged. Category I ACM includes asbestos-containing gaskets, packings, resilient floor coverings, resilient floor covering mastic, and asphalt roofing products containing more than one percent asbestos. Asphalt roofing products which may contain asbestos include built-up roofing; asphalt-containing single ply membrane systems; asphalt shingles; asphalt-containing underlayment felts; asphalt-containing roof coatings and mastics; and asphalt-containing base flashings. ACM roofing products that use other bituminous or resinous binders (such as coal tars or pitches) are also considered to be Category I ACM. Category II ACM includes all other nonfriable ACM, for example, asbestos-cement (A/C) shingles, A/C tiles, and transite boards or panels containing more than one percent asbestos. Generally speaking, Category II ACM is more likely to become friable when damaged than is Category I ACM. The applicability of the NESHAP to Category I and II

ACM depends on: (1) the condition of the material at the time of demolition or renovation, (2) the nature of the operation to which the material will be subjected, (3) the amount of ACM involved.

1.3. Asbestos-containing material regulated under the NESHAP is referred to as “regulated asbestos-containing material” (RACM). RACM is defined in § 61.141 of the NESHAP and includes: (1) friable asbestos-containing material; (2) Category I nonfriable ACM that has become friable; (3) Category I nonfriable ACM that has been or will be sanded, ground, cut, or abraded; or (4) Category II nonfriable ACM that has already been or is likely to become crumbled, pulverized, or reduced to powder. If the coverage threshold for RACM is met or exceeded in a renovation or demolition operation, then all friable ACM in the operation, and in certain situations, nonfriable ACM in the operation, are subject to the NESHAP.

A. Threshold Amounts of Asbestos-Containing Roofing Material

1.A.1. The NESHAP does not cover roofing projects on single family homes or on residential buildings containing four or fewer dwelling units. 40 CFR 61.141. For other roofing renovation projects, if the total asbestos-containing roof area undergoing renovation is less than 160 ft^2 , the NESHAP does not apply, regardless of the removal method to be used, the type of material (Category I or II), or its condition (friable versus nonfriable). 40 CFR 61.145(a)(4). However, EPA would recommend the use of methods that damage asbestos-containing roofing material as little as possible. EPA has determined that where a rotating blade (RB) roof cutter or equipment that similarly damages the roofing material is used to remove Category I nonfriable asbestos-containing roofing material, the removal of 5580 ft^2 of that material will create 160 ft^2 of RACM. For the purposes of this interpretive rule, “RB roof cutter” means an engine-powered roof cutting machine with one or more rotating cutting blades the edges of which are blunt. (Equipment with blades having sharp or tapered edges, and/or which does not use a rotating blade, is used for “slicing” rather than “cutting” the roofing material; such equipment is not included in the term “RB roof cutter”.) Therefore, it is EPA's interpretation that when an RB roof cutter or equipment that similarly damages the roofing material is used to remove Category I nonfriable asbestos-containing roofing material, any project that is 5580 ft^2 or greater is subject to the NESHAP; conversely, it is EPA's interpretation that when an RB roof cutter or equipment that similarly damages the roofing material is used to remove Category I nonfriable asbestos-containing roofing material in a roof removal project that is less than 5580 ft^2 , the project is not subject to the NESHAP, except that notification is always required for demolitions. EPA further construes the NESHAP to mean that if slicing or other methods that do not sand, grind, cut or abrade will be used on Category I nonfriable ACM, the NESHAP does not apply, regardless of the area of roof to be removed.

1.A.2. For asbestos cement (A/C) shingles (or other Category II roofing material), if the area of the roofing material to be removed is at least 160 ft^2 and the removal methods will crumble, pulverize, reduce to powder, or contaminate with RACM (from other ACM that has been crumbled, pulverized or reduced to powder) 160 ft^2 or more of such roofing material, the removal is subject to the NESHAP. Conversely, if the area of the A/C shingles (or other Category II roofing materials) to be removed is less than 160 ft^2 , the removal is not subject to the NESHAP regardless of the removal method used, except that notification is always required for demolitions. 40 CFR 61.145(a). However, EPA would recommend the use of methods that damage asbestos-containing roofing material as little as possible. If A/C shingles (or other Category II roofing materials) are removed without 160 ft^2 or more of such roofing material being crumbled, pulverized, reduced to powder, or contaminated with RACM (from other ACM that has been crumbled, pulverized or reduced to powder), the operation is not subject to the NESHAP, even where the total area of the roofing material to be removed exceeds 160 ft^2 ; provided, however, that if the renovation includes other operations involving RACM, the roof removal operation is covered if the total area of RACM from all renovation activities exceeds 160 ft^2 . *See* the definition of regulated asbestos-containing material (RACM), 40 CFR 61.141.

1.A.3. Only roofing material that meets the definition of ACM can qualify as RACM subject to the NESHAP. Therefore, to determine if a removal operation that meets or exceeds the coverage threshold is subject to the NESHAP, any suspect roofing material (*i.e.* roofing material that may be ACM) should be tested for asbestos. If any such roofing material contains more than one percent asbestos and if the removal operation is covered by the NESHAP, then EPA must be notified and the work practices in § 61.145(c) must be followed. In EPA's view, if a removal operation involves at least the threshold level of suspect material, a roofing contractor may choose not to test for asbestos if the contractor follows the notification and work practice requirements of the NESHAP.

B. A/C Shingle Removal (Category II ACM Removal)

1.B.1. A/C shingles, which are Category II nonfriable ACM, become regulated ACM if the material 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. 40 CFR 61.141. However, merely breaking an A/C

shingle (or any other category II ACM) that is not friable may not necessarily cause the material to become RACM. A/C shingles are typically nailed to buildings on which they are attached. EPA believes that the extent of breakage that will normally result from carefully removing A/C shingles and lowering the shingles to the ground will not result in crumbling, pulverizing or reducing the shingles to powder. Conversely, the extent of breakage that will normally occur if the A/C shingles are dropped from a building or scraped off of a building with heavy machinery would cause the shingles to become RACM. EPA therefore construes the NESHAP to mean that the removal of A/C shingles that are not friable, using methods that do not crumble, pulverize, or reduce the A/C shingles to powder (such as pry bars, spud bars and shovels to carefully pry the material), is not subject to the NESHAP provided that the A/C shingles are properly handled during and after removal, as discussed in this paragraph and the asbestos NESHAP. This interpretation also applies to other Category II nonfriable asbestos-containing roofing materials.

C. Cutting vs. Slicing and Manual Methods for Removal of Category I ACM

1.C.1. Because of damage to the roofing material, and the potential for fiber release, roof removal operations using rotating blade (RB) roof cutters or other equipment that sand, grind, cut or abrade the roof material are subject to the NESHAP. As EPA interprets the NESHAP, the use of certain manual methods (using equipment such as axes, hatchets, or knives, spud bars, pry bars, and shovels, but not saws) or methods that slice, shear, or punch (using equipment such as a power slicer or power plow) does not constitute “cutting, sanding, grinding or abrading.” This is because these methods do not destroy the structural matrix or integrity of the material such that the material is crumbled, pulverized or reduced to powder. Hence, it is EPA's interpretation that when such methods are used, assuming the roof material is not friable, the removal operation is not subject to the regulation.

1.C.2. Power removers or power tear-off machines are typically used to pry the roofing material up from the deck after the roof membrane has been cut. It is EPA's interpretation that when these machines are used to pry roofing material up, their use is not regulated by the NESHAP.

1.C.3. As noted previously, the NESHAP only applies to the removal of asbestos-containing roofing materials. Thus, the NESHAP does not apply to the use of RB cutters to remove non-asbestos built up roofing (BUR). On roofs containing some asbestos-containing and some non-asbestos-containing materials, coverage under the NESHAP depends on the methods used to remove each type of material in addition to other coverage thresholds specified above. For example, it is not uncommon for existing roofs to be made of non-asbestos BUR and base flashings that do contain asbestos. In that situation, EPA construes the NESHAP to be inapplicable to the removal of the non-asbestos BUR using an RB cutter so long as the RB cutter is not used to cut 5580 ft^2 or more of the asbestos-containing base flashing or other asbestos-containing material into sections. In addition, the use of methods that slice, shear, punch or pry could then be used to remove the asbestos flashings and not trigger coverage under the NESHAP.

II. Notification

2.1. Notification for a demolition is always required under the NESHAP. However, EPA believes that few roof removal jobs constitute “demolitions” as defined in the NESHAP (§ 61.141). In particular, it is EPA's view that the removal of roofing systems (i.e., the roof membrane, insulation, surfacing, coatings, flashings, mastic, shingles, and felt underlayment), when such removal is not a part of a demolition project, constitutes a “renovation” under the NESHAP. If the operation is a renovation, and Category I roofing material is being removed using either manual methods or slicing, notification is not required by the NESHAP. If Category II material is not friable and will be removed without crumbling, pulverizing, or reducing it to powder, no notification is required. Also, if the renovation involves less than the threshold area for applicability as discussed above, then no notification is required. However, if a roof removal meets the applicability and threshold requirements under the NESHAP, then EPA (or the delegated agency) must be notified in advance of the removal in accordance with the requirements of § 61.145(b), as follows:

- Notification must be given in writing at least 10 working days in advance and must include the information in § 61.145(b)(4), except for emergency renovations as discussed below.

- The notice must be updated as necessary, including, for example, when the amount of asbestos-containing roofing material reported changes by 20 percent or more.

- EPA must be notified if the start date of the roof removal changes. If the start date of a roof removal project is changed to an earlier date, EPA must be provided with a written notice of the new start date at least 10 working days

in advance. If the start date changes to a later date, EPA must be notified by telephone as soon as possible before the original start date and a written notice must be sent as soon as possible.

• For emergency renovations (as defined in § 61.141), where work must begin immediately to avoid safety or public health hazards, equipment damage, or unreasonable financial burden, the notification must be postmarked or delivered to EPA as soon as possible, but no later than the following work day.

III. Emission Control Practices

A. Requirements To Adequately Wet and Discharge No Visible Emission

3.A.1. The principal controls contained in the NESHAP for removal operations include requirements that the affected material be adequately wetted, and that asbestos waste be handled, collected, and disposed of properly. The requirements for disposal of waste materials are discussed separately in section IV below. The emission control requirements discussed in this section III apply only to roof removal operations that are covered by the NESHAP as set forth in Section I above.

3.A.2. For any operation subject to the NESHAP, the regulation (§§ 61.145(c)(2)(i), (3), (6)(i)) requires that RACM be adequately wet (as defined in § 61.141) during the operation that damages or disturbs the asbestos material until collected for disposal.

3.A.3. When using an RB roof cutter (or any other method that sands, grinds, cuts or abrades the roofing material) to remove Category I asbestos-containing roofing material, the emission control requirements of § 61.145(c) apply as discussed in Section I above. EPA will consider a roof removal project to be in compliance with the “adequately wet” and “discharge no visible emission” requirements of the NESHAP if the RB roof cutter is equipped and operated with the following: (1) a blade guard that completely encloses the blade and extends down close to the roof surface; and (2) a device for spraying a fine mist of water inside the blade guard, and which device is in operation during the cutting of the roof.

B. Exemptions From Wetting Requirements

3.B.1. The NESHAP provides that, in certain instances, wetting may not be required during the cutting of Category I asbestos roofing material with an RB roof cutter. If EPA determines in accordance with § 61.145(c)(3)(i), that wetting will unavoidably damage the building, equipment inside the building, or will present a safety hazard while stripping the ACM from a facility component that remains in place, the roof removal operation will be exempted from the requirement to wet during cutting. EPA must have sufficient written information on which to base such a decision. Before proceeding with a dry removal, the contractor must have received EPA's written approval. Such exemptions will be made on a case-by-case basis.

3.B.2. It is EPA's view that, in most instances, exemptions from the wetting requirements are not necessary. Where EPA grants an exemption from wetting because of the potential for damage to the building, damage to equipment within the building or a safety hazard, the NESHAP specifies alternative control methods (§ 61.145(c)(3)(i)(B)). Alternative control methods include (a) the use of local exhaust ventilation systems that capture the dust, and do not produce visible emissions, or (b) methods that are designed and operated in accordance with the requirements of § 61.152, or (c) other methods that have received the written approval of EPA. EPA will consider an alternative emission control method in compliance with the NESHAP if the method has received written approval from EPA and the method is being implemented consistent with the approved procedures (§ 61.145(c)(3)(ii) or § 61.152(b)(3)).

3.B.3. An exemption from wetting is also allowed when the air or roof surface temperature at the point of wetting is below freezing, as specified in § 61.145(c)(7). If freezing temperatures are indicated as the reason for not wetting, records must be kept of the temperature at the beginning, middle and end of the day on which wetting is not performed and the records of temperature must be retained for at least 2 years. 42 CFR § 61.145(c)(7)(iii). It is EPA's interpretation that in such cases, no written application to, or written approval by the Administrator is needed for using emission control methods listed in § 61.145(c)(3)(i)(B), or alternative emission control methods that have been previously approved by the Administrator. However, such written application or approval is required for alternative emission control methods that have not been previously approved. Any dust and debris collected from cutting must still be kept wet and placed in containers. All of the other requirements for notification and waste disposal would continue to apply as described elsewhere in this notice and the Asbestos NESHAP.

C. Waste Collection and Handling

3.C.1. It is EPA's interpretation that waste resulting from slicing and other methods that do not cut, grind, sand or abrade Category I nonfriable asbestos-containing roofing material is not subject to the NESHAP and can be disposed of as nonasbestos waste. EPA further construes the NESHAP to provide that if Category II roofing material (such as A/C shingles) is removed and disposed of without crumbling, pulverizing, or reducing it to powder, the waste from the removal is not subject to the NESHAP waste disposal requirements. EPA also interprets the NESHAP to be inapplicable to waste resulting from roof removal operations that do not meet or exceed the coverage thresholds described in section I above. Of course, other State, local, or Federal regulations may apply.

3.C.2. It is EPA's interpretation that when an RB roof cutter, or other method that similarly damages the roofing material, is used to cut Category I asbestos containing roofing material, the damaged material from the cut (the sawdust or debris) is considered asbestos containing waste subject to § 61.150 of the NESHAP, provided the coverage thresholds discussed above in section 1 are met or exceeded. This sawdust or debris must be disposed of at a disposal site operated in accordance with the NESHAP. It is also EPA's interpretation of the NESHAP that if the remainder of the roof is free of the sawdust and debris generated by the cutting, or if such sawdust or debris is collected as discussed below in paragraphs 3.C.3, 3.C.4, 3.C.5 and 3.C.6, the remainder of the roof can be disposed of as nonasbestos waste because it is considered to be Category I nonfriable material (as long as the remainder of the roof is in fact nonasbestos material or if it is Category I asbestos material and the removal methods do not further sand, grind, cut or abrade the roof material). EPA further believes that if the roof is not cleaned of such sawdust or debris, *i.e.,* it is contaminated, then it must be treated as asbestos-containing waste material and be handled in accordance with § 61.150.

3.C.3. In order to be in compliance with the NESHAP while using an RB roof cutter (or device that similarly damages the roofing material) to cut Category I asbestos containing roofing material, the dust and debris resulting from the cutting of the roof should be collected as soon as possible after the cutting operation, and kept wet until collected and placed in leak-tight containers. EPA believes that where the blade guard completely encloses the blade and extends down close to the roof surface and is equipped with a device for spraying a fine mist of water inside the blade guard, and the spraying device is in operation during the cutting, most of the dust and debris from cutting will be confined along the cut. The most efficient methods to collect the dust and debris from cutting are to immediately collect or vacuum up the damaged material where it lies along the cut using a filtered vacuum cleaner or debris collector that meets the requirements of 40 CFR 61.152 to clean up as much of the debris as possible, or to gently sweep up the bulk of the debris, and then use a filtered vacuum cleaner that meets the requirements of 40 CFR 61.152 to clean up as much of the remainder of the debris as possible. On smooth surfaced roofs (nonaggregate roofs), sweeping up the debris and then wet wiping the surface may be done in place of using a filtered vacuum cleaner. It is EPA's view that if these decontamination procedures are followed, the remaining roofing material does not have to be collected and disposed of as asbestos waste. Additionally, it is EPA's view that where such decontamination procedures are followed, if the remaining portions of the roof are non-asbestos or Category I nonfriable asbestos material, and if the remaining portions are removed using removal methods that slice, shear, punch or pry, as discussed in section 1.C above, then the remaining portions do not have to be collected and disposed of as asbestos waste and the NESHAP's no visible emissions and adequately wet requirements are not applicable to the removal of the remaining portions. In EPA's interpretation, the failure of a filtered vacuum cleaner or debris collector to collect larger chunks or pieces of damaged roofing material created by the RB roof cutter does not require the remaining roofing material to be handled and disposed of as asbestos waste, provided that such visible chunks or pieces of roofing material are collected (e.g. by gentle sweeping) and disposed of as asbestos waste. Other methods of decontamination may not be adequate, and should be approved by the local delegated agency.

3.C.4. In EPA's interpretation, if the debris from the cutting is not collected immediately, it will be necessary to lightly mist the dust or debris, until it is collected, as discussed above, and placed in containers. The dust or debris should be lightly misted frequently enough to prevent the material from drying, and to prevent airborne emissions, prior to collection as described above. It is EPA's interpretation of the NESHAP that if these procedures are followed, the remaining roofing material does not have to be collected and disposed of as asbestos waste, as long as the remaining roof material is in fact nonasbestos material or if it is Category I asbestos material and the removal methods do not further sand, grind, cut or abrade the roof material.

3.C.5. It is EPA's interpretation that, provided the roofing material is not friable prior to the cutting operation, and provided the roofing material has not been made friable by the cutting operation, the appearance of rough, jagged or damaged edges on the remaining roofing material, due to the use of an RB roof cutter, does not require that such remaining roofing material be handled and disposed of as asbestos waste. In addition, it is also EPA's interpretation that if the sawdust or debris generated by the use of an RB roof cutter has been collected as discussed in paragraphs

3.C.3, 3.C.4 and 3.C.6, the presence of dust along the edge of the remaining roof material does not render such material “friable” for purposes of this interpretive rule or the NESHAP, provided the roofing material is not friable prior to the cutting operation, and provided that the remaining roofing material near the cutline has not been made friable by the cutting operation. Where roofing material near the cutline has been made friable by the use of the RB cutter (*i.e.* where such remaining roofing material near the cutline can be crumbled, pulverized or reduced to powder using hand pressure), it is EPA's interpretation that the use of an encapsulant will ensure that such friable material need not be treated or disposed of as asbestos containing waste material. The encapsulant may be applied to the friable material after the roofing material has been collected into stacks for subsequent disposal as nonasbestos waste. It is EPA's view that if the encapsulation procedure set forth in this paragraph is followed in operations where roofing material near the cutline has been rendered friable by the use of an RB roof cutter, and if the decontamination procedures set forth in paragraph 3.C.3 have been followed, the NESHAP's no visible emissions and adequately wet requirements would be met for the removal, handling and disposal of the remaining roofing material.

3.C.6. As one way to comply with the NESHAP, the dust and debris from cutting can be placed in leak-tight containers, such as plastic bags, and the containers labeled using warning labels required by OSHA (29 CFR 1926.58). In addition, the containers must have labels that identify the waste generator (such as the name of the roofing contractor, abatement contractor, and/or building owner or operator) and the location of the site at which the waste was generated.

IV. Waste Disposal

A. Disposal Requirements

4.A.1. Section 61.150(b) requires that, as soon as is practical, all collected dust and debris from cutting as well as any contaminated roofing squares, must be taken to a landfill that is operated in accordance with § 61.154 or to an EPA-approved site that converts asbestos waste to nonasbestos material in accordance with § 61.155. During the loading and unloading of affected waste, asbestos warning signs must be affixed to the vehicles.

B. Waste Shipment Record

4.B.1. For each load of asbestos waste that is regulated under the NESHAP, a waste shipment record (WSR) must be maintained in accordance with § 61.150(d). Information that must be maintained for each waste load includes the following:

- Name, address, and telephone number of the waste generator
- Name and address of the local, State, or EPA regional office responsible for administering the asbestos NESHAP program
- Quantity of waste in cubic meters (or cubic yards)
- Name and telephone number of the disposal site operator
- Name and physical site location of the disposal site
- Date transported
- Name, address, and telephone number of the transporter(s)
- Certification that the contents meet all government regulations for transport by highways.

4.B.2. The waste generator is responsible for ensuring that a copy of the WSR is delivered to the disposal site along with the waste shipment. If a copy of the WSR signed by the disposal site operator is not returned to the waste generator within 35 days, the waste generator must contact the transporter and/or the disposal site to determine the status of the waste shipment. 40 CFR 61.150(d)(3). If the signed WSR is not received within 45 days, the waste generator must report, in writing, to the responsible NESHAP program agency and send along a copy of the WSR. 40

CFR 61.150(d)(4). Copies of WSRs, including those signed by the disposal site operator, must be retained for at least 2 years. 40 CFR 61.150(d)(5).

V. Training

5.1. For those roof removals that are subject to the NESHAP, at least one on-site supervisor trained in the provisions of the NESHAP must be present during the removal of the asbestos roofing material. 40 CFR 61.145(c)(8). In EPA's view, this person can be a job foreman, a hired consultant, or someone who can represent the building owner or contractor responsible for the removal. In addition to the initial training requirement, a refresher training course is required every 2 years. The NESHAP training requirements became effective on November 20, 1991.

5.2. Asbestos training courses developed specifically to address compliance with the NESHAP in roofing work, as well as courses developed for other purposes can satisfy this requirement of the NESHAP, as long as the course covers the areas specified in the regulation. EPA believes that Asbestos Hazard Emergency Response Act (AHERA) training courses will, for example, satisfy the NESHAP training requirements. However, nothing in this interpretive rule or in the NESHAP shall be deemed to require that roofing contractors or roofing workers performing operations covered by the NESHAP must be trained or accredited under AHERA, as amended by the Asbestos School Hazard Abatement Reauthorization Act (ASHARA). Likewise, state or local authorities may independently impose additional training, licensing, or accreditation requirements on roofing contractors performing operations covered by the NESHAP, but such additional training, licensing or accreditation is not called for by this interpretive rule or the federal NESHAP.

5.3. For removal of Category I asbestos containing roofing material where RB roof cutters or equipment that similarly damages the asbestos-containing roofing material are used, the NESHAP training requirements (§ 61.145(c)(8)) apply as discussed in Section I above. It is EPA's intention that removal of Category I asbestos-containing roofing material using hatchets, axes, knives, and/or the use of spud bars, pry bars and shovels to lift the roofing material, or similar removal methods that slice, punch, or shear the roof membrane are not subject to the training requirements, since these methods do not cause the roof removal to be subject to the NESHAP. Likewise, it is EPA's intention that roof removal operations involving Category II nonfriable ACM are not subject to the training requirements where such operations are not subject to the NESHAP as discussed in section I above.

[59 FR 31158, June 17, 1994, as amended at 60 FR 31920, June 19, 1995]

Attachment C

Part 70 Operating Permit Renewal No: T167-36980-00116

[Downloaded from the eCFR on July 23, 2013]

Electronic Code of Federal Regulations

Title 40: Protection of Environment

PART 63—NATIONAL EMISSION STANDARDS FOR HAZARDOUS AIR POLLUTANTS

Subpart AAAA—National Emission Standard for Hazardous Air Pollutants: Municipal Solid Waste Landfills

SOURCE: 68 FR 2238, Jan. 16, 2003, unless otherwise noted.

§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^3) 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.

(b) 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, that includes a bioreactor, as defined in §63.1990, and that meets any one of the criteria in paragraphs (b)(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 our greater than 2.5 million Mg and 2.5 million m^3 and that is not permanently closed as of January 16, 2003.

§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.

(b) A new affected source of this subpart is an affected source that commenced construction or reconstruction after November 7, 2000. An affected source is reconstructed if it meets the definition of reconstruction in 40 CFR 63.2 of subpart A.

(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?

(a) If your landfill is a new affected source, you must comply with this subpart by January 16, 2003 or at the time you begin operating, whichever is last.

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

(c) If your landfill is a new affected source and is a major source or is collocated with a major source, 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.

(d) If your landfill is an existing affected source and is a major source or is collocated with a major source, 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 13, 2004, whichever occurs later.

(e) If your landfill is a new affected source and is an area source meeting the criteria in §63.1935(a)(3), you must comply with the requirements of §§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.

(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.

§63.1947 When do I have to comply with this subpart if I own or operate a bioreactor?

You must comply with this subpart by the dates specified in §63.1945(a) or (b) of this subpart. If you own or operate a bioreactor located at a landfill that is not permanently closed as of January 16, 2003 and has a design capacity equal to or greater than 2.5 million Mg and 2.5 million m^3, then you must install and operate a collection and control system that meets the criteria in 40 CFR 60.752(b)(2)(v) of part 60, subpart WWW, the Federal plan, or EPA approved and effective State plan according to the schedule specified in paragraph (a), (b), or (c) of this section.

(a) If your bioreactor is at a new affected source, then you must meet the requirements in paragraphs (a)(1) and (2) of this section:

(1) Install the gas collection and control system for the bioreactor before initiating liquids addition.

(2) Begin operating the gas collection and control system within 180 days after initiating liquids addition or within 180 days after achieving a moisture content of 40 percent by weight, whichever is later. If you choose to begin gas collection and control system operation 180 days after achieving a 40 percent moisture content instead of 180 days after liquids addition, use the procedures in §63.1980(g) and (h) to determine when the bioreactor moisture content reaches 40 percent.

(b) If your bioreactor is at an existing affected source, then you must install and begin operating the gas collection and control system for the bioreactor by January 17, 2006 or by the date your bioreactor is required to install a gas collection and control system under 40 CFR part 60, subpart WWW, the Federal plan, or EPA approved and effective State plan or tribal plan that applies to your landfill, whichever is earlier.

(c) If your bioreactor is at an existing affected source and you do not initiate liquids addition to your bioreactor until later than January 17, 2006, then you must meet the requirements in paragraphs (c)(1) and (2) of this section:

(1) Install the gas collection and control system for the bioreactor before initiating liquids addition.

(2) Begin operating the gas collection and control system within 180 days after initiating liquids addition or within 180 days after achieving a moisture content of 40 percent by weight, whichever is later. If you choose to begin gas collection and control system operation 180 days after achieving a 40 percent moisture content instead of 180 days after liquids addition, use the procedures in §63.1980(g) and (h) to determine when the bioreactor moisture content reaches 40 percent.

§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.

§63.1952 When am I no longer required to comply with the requirements of this subpart if I own or operate a bioreactor?

If you own or operate a landfill that includes a bioreactor, you are no longer required to comply with the requirements of this subpart for the bioreactor provided you meet the conditions of either paragraphs (a) or (b).

(a) Your affected source meets the control system removal criteria in 40 CFR 60.752(b)(2)(v) of part 60, subpart WWW or the bioreactor meets the criteria for a nonproductive area of the landfill in 40 CFR 60.759(a)(3)(ii) of part 60, subpart WWW.

(b) The bioreactor portion of the landfill is a closed landfill as defined in 40 CFR 60.751, subpart WWW, you have permanently ceased adding liquids to the bioreactor, and you have not added liquids to the bioreactor for at least 1 year. A closure report for the bioreactor must be submitted to the Administrator as provided in 40 CFR 60.757(d) of subpart WWW.

(c) Compliance with the bioreactor control removal provisions in this section constitutes compliance with 40 CFR part 60, subpart WWW or the Federal plan, whichever applies to your bioreactor.

STANDARDS

§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.

(2) Comply with the requirements of the Federal plan or EPA approved and effective State plan or tribal plan that implements 40 CFR part 60, subpart Cc.

(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.

(d) If you own or operate a bioreactor that is located at a MSW landfill that is not permanently closed and has a design capacity equal to or greater than 2.5 million Mg and 2.5 million m^3, then you must meet the requirements of paragraph (a) and the additional requirements in paragraphs (d)(1) and (2) of this section.

(1) You must comply with the general provisions specified in Table 1 of this subpart and §§63.1960 through 63.1985 starting on the date you are required to install the gas collection and control system.

(2) You must extend the collection and control system into each new cell or area of the bioreactor prior to initiating liquids addition in that area, instead of the schedule in 40 CFR 60.752(b)(2)(ii)(A)(*2*).

GENERAL AND CONTINUING COMPLIANCE REQUIREMENTS

§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.

[68 FR 2238, Jan. 16, 2003, as amended at 71 FR 20462, Apr. 20, 2006]

§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.

[68 FR 2238, Jan. 16, 2003, as amended at 71 FR 20462, Apr. 20, 2006]

§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.

NOTIFICATIONS, RECORDS, AND REPORTS

§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.

(c) For bioreactors at new affected sources you must submit the initial semiannual compliance report and performance test results described in 40 CFR 60.757(f) within 180 days after the date you are required to begin operating the gas collection and control system by §63.1947(a)(2) of this subpart.

(d) For bioreactors at existing affected sources, you must submit the initial semiannual compliance report and performance test results described in 40 CFR 60.757(f) within 180 days after the compliance date specified in §63.1947(b) of this subpart, unless you have previously submitted a compliance report for the bioreactor required by 40 CFR part 60, subpart WWW, the Federal plan, or an EPA approved and effective State plan or tribal plan.

(e) For bioreactors that are located at existing affected sources, but do not initiate liquids addition until later than the compliance date in §63.1947(b) of this subpart, you must submit the initial semiannual compliance report and performance tests results described in 40 CFR 60.757(f) within 180 days after the date you are required to begin operating the gas collection and control system by §63.1947(c) of this subpart.

(f) If you must submit a semiannual compliance report for a bioreactor as well as a semiannual compliance report for a conventional portion of the same landfill, you may delay submittal of a subsequent semiannual compliance report for the bioreactor according to paragraphs (f)(1) through (3) of this section so that the reports may be submitted on the same schedule.

(1) After submittal of your initial semiannual compliance report and performance test results for the bioreactor, you may delay submittal of the subsequent semiannual compliance report for the bioreactor until the date the initial or subsequent semiannual compliance report is due for the conventional portion of your landfill.

(2) You may delay submittal of your subsequent semiannual compliance report by no more than 12 months after the due date for submitting the initial semiannual compliance report and performance test results described in 40 CFR 60.757(f) for the bioreactor. The report shall cover the time period since the previous semiannual report for the bioreactor, which would be a period of at least 6 months and no more than 12 months.

(3) After the delayed semiannual report, all subsequent semiannual reports for the bioreactor must be submitted every 6 months on the same date the semiannual report for the conventional portion of the landfill is due.

(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.

(h) If you calculate moisture content to establish the date your bioreactor is required to begin operating the collection and control system under §63.1947(a)(2) or (c)(2), keep a record of the calculations including the information specified in paragraph (g) of this section for 5 years. Within 90 days after the bioreactor achieves 40 percent moisture content, report the results of the calculation, the date the bioreactor achieved 40 percent moisture content by weight, and the date you plan to begin collection and control system operation.

OTHER REQUIREMENTS AND INFORMATION

§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	
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	

Part 63 Citation	Description	Explanation
	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	

Attachment D

Part 70 Operating Permit No: T167-36980-00116

[Downloaded from the eCFR on May 13, 2013]

Electronic Code of Federal Regulations

Title 40: Protection of Environment

PART 63—NATIONAL EMISSION STANDARDS FOR HAZARDOUS AIR POLLUTANTS FOR SOURCE CATEGORIES

Subpart CCCCCC—National Emission Standards for Hazardous Air Pollutants for Source Category: Gasoline Dispensing Facilities

Source: 73 FR 1945, Jan. 10, 2008, unless otherwise noted.

What This Subpart Covers

§ 63.11110 What is the purpose of this subpart?

This subpart establishes national emission limitations and management practices for hazardous air pollutants (HAP) emitted from the loading of gasoline storage tanks at gasoline dispensing facilities (GDF). This subpart also establishes requirements to demonstrate compliance with the emission limitations and management practices.

§ 63.11111 Am I subject to the requirements in this subpart?

(a) The affected source to which this subpart applies is each GDF that is located at an area source. The affected source includes each gasoline cargo tank during the delivery of product to a GDF and also includes each storage tank.

(b) If your GDF has a monthly throughput of less than 10,000 gallons of gasoline, you must comply with the requirements in § 63.11116.

(c) If your GDF has a monthly throughput of 10,000 gallons of gasoline or more, you must comply with the requirements in § 63.11117.

(d) If your GDF has a monthly throughput of 100,000 gallons of gasoline or more, you must comply with the requirements in § 63.11118.

(e) An affected source shall, upon request by the Administrator, demonstrate that their monthly throughput is less than the 10,000-gallon or the 100,000-gallon threshold level, as applicable. For new or reconstructed affected sources, as specified in § 63.11112(b) and (c), recordkeeping to document monthly throughput must begin upon startup of the affected source. For existing sources, as specified in § 63.11112(d), recordkeeping to document monthly throughput must begin on January 10, 2008. For existing sources that are subject to this subpart only because they load gasoline into fuel tanks other than those in motor vehicles, as defined in § 63.11132, recordkeeping to document monthly throughput must begin on January 24, 2011. Records required under this paragraph shall be kept for a period of 5 years.

(f) If you are an owner or operator of affected sources, as defined in paragraph (a) of this section, you are not required to obtain a permit under 40 CFR part 70 or 40 CFR part 71 as a result of being subject to this subpart. However, you must still apply for and obtain a permit under 40 CFR part 70 or 40 CFR part 71 if you meet one or more of the applicability criteria found in 40 CFR 70.3(a) and (b) or 40 CFR 71.3(a) and (b).

(g) The loading of aviation gasoline into storage tanks at airports, and the subsequent transfer of aviation gasoline within the airport, is not subject to this subpart.

(h) Monthly throughput is the total volume of gasoline loaded into, or dispensed from, all the gasoline storage tanks located at a single affected GDF. If an area source has two or more GDF at separate locations within the area source, each GDF is treated as a separate affected source.

(i) If your affected source's throughput ever exceeds an applicable throughput threshold, the affected source will remain subject to the requirements for sources above the threshold, even if the affected source throughput later falls below the applicable throughput threshold.

(j) The dispensing of gasoline from a fixed gasoline storage tank at a GDF into a portable gasoline tank for the on-site delivery and subsequent dispensing of the gasoline into the fuel tank of a motor vehicle or other gasoline-fueled engine or equipment used within the area source is only subject to § 63.11116 of this subpart.

(k) For any affected source subject to the provisions of this subpart and another Federal rule, you may elect to comply only with the more stringent provisions of the applicable subparts. You must consider all provisions of the rules, including monitoring, recordkeeping, and reporting. You must identify the affected source and provisions with which you will comply in your Notification of Compliance Status required under § 63.11124. You also must demonstrate in your Notification of Compliance Status that each provision with which you will comply is at least as stringent as the otherwise applicable requirements in this subpart. You are responsible for making accurate determinations concerning the more stringent provisions, and noncompliance with this rule is not excused if it is later determined that your determination was in error, and, as a result, you are violating this subpart. Compliance with this rule is your responsibility and the Notification of Compliance Status does not alter or affect that responsibility.

[73 FR 1945, Jan. 10, 2008, as amended at 76 FR 4181, Jan. 24, 2011]

§ 63.11112 What parts of my affected source does this subpart cover?

(a) The emission sources to which this subpart applies are gasoline storage tanks and associated equipment components in vapor or liquid gasoline service at new, reconstructed, or existing GDF that meet the criteria specified in § 63.11111. Pressure/Vacuum vents on gasoline storage tanks and the equipment necessary to unload product from cargo tanks into the storage tanks at GDF are covered emission sources. The equipment used for the refueling of motor vehicles is not covered by this subpart.

(b) An affected source is a new affected source if you commenced construction on the affected source after November 9, 2006, and you meet the applicability criteria in § 63.11111 at the time you commenced operation.

(c) An affected source is reconstructed if you meet the criteria for reconstruction as defined in § 63.2.

(d) An affected source is an existing affected source if it is not new or reconstructed.

§ 63.11113 When do I have to comply with this subpart?

(a) If you have a new or reconstructed affected source, you must comply with this subpart according to paragraphs (a)(1) and (2) of this section, except as specified in paragraph (d) of this section.

(1) If you start up your affected source before January 10, 2008, you must comply with the standards in this subpart no later than January 10, 2008.

(2) If you start up your affected source after January 10, 2008, you must comply with the standards in this subpart upon startup of your affected source.

(b) If you have an existing affected source, you must comply with the standards in this subpart no later than January 10, 2011.

(c) If you have an existing affected source that becomes subject to the control requirements in this subpart because of an increase in the monthly throughput, as specified in § 63.11111(c) or § 63.11111(d), you must comply with the standards in this subpart no later than 3 years after the affected source becomes subject to the control requirements in this subpart.

(d) If you have a new or reconstructed affected source and you are complying with Table 1 to this subpart, you must comply according to paragraphs (d)(1) and (2) of this section.

(1) If you start up your affected source from November 9, 2006 to September 23, 2008, you must comply no later than September 23, 2008.

(2) If you start up your affected source after September 23, 2008, you must comply upon startup of your affected source.

(e) The initial compliance demonstration test required under § 63.11120(a)(1) and (2) must be conducted as specified in paragraphs (e)(1) and (2) of this section.

(1) If you have a new or reconstructed affected source, you must conduct the initial compliance test upon installation of the complete vapor balance system.

(2) If you have an existing affected source, you must conduct the initial compliance test as specified in paragraphs (e)(2)(i) or (e)(2)(ii) of this section.

(i) For vapor balance systems installed on or before December 15, 2009, you must test no later than 180 days after the applicable compliance date specified in paragraphs (b) or (c) of this section.

(ii) For vapor balance systems installed after December 15, 2009, you must test upon installation of the complete vapor balance system.

(f) If your GDF is subject to the control requirements in this subpart only because it loads gasoline into fuel tanks other than those in motor vehicles, as defined in § 63.11132, you must comply with the standards in this subpart as specified in paragraphs (f)(1) or (f)(2) of this section.

(1) If your GDF is an existing facility, you must comply by January 24, 2014.

(2) If your GDF is a new or reconstructed facility, you must comply by the dates specified in paragraphs (f)(2)(i) and (ii) of this section.

(i) If you start up your GDF after December 15, 2009, but before January 24, 2011, you must comply no later than January 24, 2011.

(ii) If you start up your GDF after January 24, 2011, you must comply upon startup of your GDF.

[73 FR 1945, Jan. 10, 2008, as amended at 73 FR 35944, June 25, 2008; 76 FR 4181, Jan. 24, 2011]

Emission Limitations and Management Practices

§ 63.11115 What are my general duties to minimize emissions?

Each owner or operator of an affected source under this subpart must comply with the requirements of paragraphs (a) and (b) of this section.

(a) You must, at all times, operate and maintain any affected source, including associated air pollution control equipment and monitoring equipment, in a manner consistent with safety and good air pollution control practices for minimizing emissions. Determination of whether such operation and maintenance procedures are being used will be based on information available to the Administrator which may include, but is not limited to, monitoring results, review

of operation and maintenance procedures, review of operation and maintenance records, and inspection of the source.

(b) You must keep applicable records and submit reports as specified in § 63.11125(d) and § 63.11126(b).

[76 FR 4182, Jan. 24, 2011]

§ 63.11116 Requirements for facilities with monthly throughput of less than 10,000 gallons of gasoline.

(a) You must not allow gasoline to be handled in a manner that would result in vapor releases to the atmosphere for extended periods of time. Measures to be taken include, but are not limited to, the following:

(1) Minimize gasoline spills;

(2) Clean up spills as expeditiously as practicable;

(3) Cover all open gasoline containers and all gasoline storage tank fill-pipes with a gasketed seal when not in use;

(4) Minimize gasoline sent to open waste collection systems that collect and transport gasoline to reclamation and recycling devices, such as oil/water separators.

(b) You are not required to submit notifications or reports as specified in § 63.11125, § 63.11126, or subpart A of this part, but you must have records available within 24 hours of a request by the Administrator to document your gasoline throughput.

(c) You must comply with the requirements of this subpart by the applicable dates specified in § 63.11113.

(d) Portable gasoline containers that meet the requirements of 40 CFR part 59, subpart F, are considered acceptable for compliance with paragraph (a)(3) of this section.

[73 FR 1945, Jan. 10, 2008, as amended at 76 FR 4182, Jan. 24, 2011]

§ 63.11117 Requirements for facilities with monthly throughput of 10,000 gallons of gasoline or more.

(a) You must comply with the requirements in section § 63.11116(a).

(b) Except as specified in paragraph (c) of this section, you must only load gasoline into storage tanks at your facility by utilizing submerged filling, as defined in § 63.11132, and as specified in paragraphs (b)(1), (b)(2), or (b)(3) of this section. The applicable distances in paragraphs (b)(1) and (2) shall be measured from the point in the opening of the submerged fill pipe that is the greatest distance from the bottom of the storage tank.

(1) Submerged fill pipes installed on or before November 9, 2006, must be no more than 12 inches from the bottom of the tank.

(2) Submerged fill pipes installed after November 9, 2006, must be no more than 6 inches from the bottom of the tank.

(3) Submerged fill pipes not meeting the specifications of paragraphs (b)(1) or (b)(2) of this section are allowed if the owner or operator can demonstrate that the liquid level in the tank is always above the entire opening of the fill pipe. Documentation providing such demonstration must be made available for inspection by the Administrator's delegated representative during the course of a site visit.

(c) Gasoline storage tanks with a capacity of less than 250 gallons are not required to comply with the submerged fill requirements in paragraph (b) of this section, but must comply only with all of the requirements in § 63.11116.

(d) You must have records available within 24 hours of a request by the Administrator to document your gasoline throughput.

(e) You must submit the applicable notifications as required under § 63.11124(a).

(f) You must comply with the requirements of this subpart by the applicable dates contained in § 63.11113.

[73 FR 1945, Jan. 10, 2008, as amended at 73 FR 12276, Mar. 7, 2008; 76 FR 4182, Jan. 24, 2011]

§ 63.11118 Requirements for facilities with monthly throughput of 100,000 gallons of gasoline or more.

(a) You must comply with the requirements in §§ 63.11116(a) and 63.11117(b).

(b) Except as provided in paragraph (c) of this section, you must meet the requirements in either paragraph (b)(1) or paragraph (b)(2) of this section.

(1) Each management practice in Table 1 to this subpart that applies to your GDF.

(2) If, prior to January 10, 2008, you satisfy the requirements in both paragraphs (b)(2)(i) and (ii) of this section, you will be deemed in compliance with this subsection.

(i) You operate a vapor balance system at your GDF that meets the requirements of either paragraph (b)(2)(i)(A) or paragraph (b)(2)(i)(B) of this section.

(A) Achieves emissions reduction of at least 90 percent.

(B) Operates using management practices at least as stringent as those in Table 1 to this subpart.

(ii) Your gasoline dispensing facility is in compliance with an enforceable State, local, or tribal rule or permit that contains requirements of either paragraph (b)(2)(i)(A) or paragraph (b)(2)(i)(B) of this section.

(c) The emission sources listed in paragraphs (c)(1) through (3) of this section are not required to comply with the control requirements in paragraph (b) of this section, but must comply with the requirements in § 63.11117.

(1) Gasoline storage tanks with a capacity of less than 250 gallons that are constructed after January 10, 2008.

(2) Gasoline storage tanks with a capacity of less than 2,000 gallons that were constructed before January 10, 2008.

(3) Gasoline storage tanks equipped with floating roofs, or the equivalent.

(d) Cargo tanks unloading at GDF must comply with the management practices in Table 2 to this subpart.

(e) You must comply with the applicable testing requirements contained in § 63.11120.

(f) You must submit the applicable notifications as required under § 63.11124.

(g) You must keep records and submit reports as specified in §§ 63.11125 and 63.11126.

(h) You must comply with the requirements of this subpart by the applicable dates contained in § 63.11113.

[73 FR 1945, Jan. 10, 2008, as amended at 73 FR 12276, Mar. 7, 2008]

Testing and Monitoring Requirements

§ 63.11120 What testing and monitoring requirements must I meet?

(a) Each owner or operator, at the time of installation, as specified in § 63.11113(e), of a vapor balance system required under § 63.11118(b)(1), and every 3 years thereafter, must comply with the requirements in paragraphs (a)(1) and (2) of this section.

(1) You must demonstrate compliance with the leak rate and cracking pressure requirements, specified in item 1(g) of Table 1 to this subpart, for pressure-vacuum vent valves installed on your gasoline storage tanks using the test methods identified in paragraph (a)(1)(i) or paragraph (a)(1)(ii) of this section.

(i) California Air Resources Board Vapor Recovery Test Procedure TP-201.1E,—Leak Rate and Cracking Pressure of Pressure/Vacuum Vent Valves, adopted October 8, 2003 (incorporated by reference, see § 63.14).

(ii) Use alternative test methods and procedures in accordance with the alternative test method requirements in § 63.7(f).

(2) You must demonstrate compliance with the static pressure performance requirement specified in item 1(h) of Table 1 to this subpart for your vapor balance system by conducting a static pressure test on your gasoline storage tanks using the test methods identified in paragraphs (a)(2)(i), (a)(2)(ii), or (a)(2)(iii) of this section.

(i) California Air Resources Board Vapor Recovery Test Procedure TP-201.3,—Determination of 2-Inch WC Static Pressure Performance of Vapor Recovery Systems of Dispensing Facilities, adopted April 12, 1996, and amended March 17, 1999 (incorporated by reference, see § 63.14).

(ii) Use alternative test methods and procedures in accordance with the alternative test method requirements in § 63.7(f).

(iii) Bay Area Air Quality Management District Source Test Procedure ST-30—Static Pressure Integrity Test—Underground Storage Tanks, adopted November 30, 1983, and amended December 21, 1994 (incorporated by reference, *see* § 63.14).

(b) Each owner or operator choosing, under the provisions of § 63.6(g), to use a vapor balance system other than that described in Table 1 to this subpart must demonstrate to the Administrator or delegated authority under paragraph § 63.11131(a) of this subpart, the equivalency of their vapor balance system to that described in Table 1 to this subpart using the procedures specified in paragraphs (b)(1) through (3) of this section.

(1) You must demonstrate initial compliance by conducting an initial performance test on the vapor balance system to demonstrate that the vapor balance system achieves 95 percent reduction using the California Air Resources Board Vapor Recovery Test Procedure TP-201.1,—Volumetric Efficiency for Phase I Vapor Recovery Systems, adopted April 12, 1996, and amended February 1, 2001, and October 8, 2003, (incorporated by reference, see § 63.14).

(2) You must, during the initial performance test required under paragraph (b)(1) of this section, determine and document alternative acceptable values for the leak rate and cracking pressure requirements specified in item 1(g) of Table 1 to this subpart and for the static pressure performance requirement in item 1(h) of Table 1 to this subpart.

(3) You must comply with the testing requirements specified in paragraph (a) of this section.

(c) Conduct of performance tests. Performance tests conducted for this subpart shall be conducted under such conditions as the Administrator specifies to the owner or operator based on representative performance (*i.e.,* performance based on normal operating conditions) of the affected source. Upon request, the owner or operator shall make available to the Administrator such records as may be necessary to determine the conditions of performance tests.

(d) Owners and operators of gasoline cargo tanks subject to the provisions of Table 2 to this subpart must conduct annual certification testing according to the vapor tightness testing requirements found in § 63.11092(f).

[73 FR 1945, Jan. 10, 2008, as amended at 76 FR 4182, Jan. 24, 2011]

Notifications, Records, and Reports

§ 63.11124 What notifications must I submit and when?

(a) Each owner or operator subject to the control requirements in § 63.11117 must comply with paragraphs (a)(1) through (3) of this section.

(1) You must submit an Initial Notification that you are subject to this subpart by May 9, 2008, or at the time you become subject to the control requirements in § 63.11117, unless you meet the requirements in paragraph (a)(3) of this section. If your affected source is subject to the control requirements in § 63.11117 only because it loads gasoline into fuel tanks other than those in motor vehicles, as defined in § 63.11132, you must submit the Initial Notification by May 24, 2011. The Initial Notification must contain the information specified in paragraphs (a)(1)(i) through (iii) of this section. The notification must be submitted to the applicable EPA Regional Office and delegated State authority as specified in § 63.13.

(i) The name and address of the owner and the operator.

(ii) The address (i.e., physical location) of the GDF.

(iii) A statement that the notification is being submitted in response to this subpart and identifying the requirements in paragraphs (a) through (c) of § 63.11117 that apply to you.

(2) You must submit a Notification of Compliance Status to the applicable EPA Regional Office and the delegated State authority, as specified in § 63.13, within 60 days of the applicable compliance date specified in § 63.11113, unless you meet the requirements in paragraph (a)(3) of this section. The Notification of Compliance Status must be signed by a responsible official who must certify its accuracy, must indicate whether the source has complied with the requirements of this subpart, and must indicate whether the facilities' monthly throughput is calculated based on the volume of gasoline loaded into all storage tanks or on the volume of gasoline dispensed from all storage tanks. If your facility is in compliance with the requirements of this subpart at the time the Initial Notification required under paragraph (a)(1) of this section is due, the Notification of Compliance Status may be submitted in lieu of the Initial Notification provided it contains the information required under paragraph (a)(1) of this section.

(3) If, prior to January 10, 2008, you are operating in compliance with an enforceable State, local, or tribal rule or permit that requires submerged fill as specified in § 63.11117(b), you are not required to submit an Initial Notification or a Notification of Compliance Status under paragraph (a)(1) or paragraph (a)(2) of this section.

(b) Each owner or operator subject to the control requirements in § 63.11118 must comply with paragraphs (b)(1) through (5) of this section.

(1) You must submit an Initial Notification that you are subject to this subpart by May 9, 2008, or at the time you become subject to the control requirements in § 63.11118. If your affected source is subject to the control requirements in § 63.11118 only because it loads gasoline into fuel tanks other than those in motor vehicles, as defined in § 63.11132, you must submit the Initial Notification by May 24, 2011. The Initial Notification must contain the information specified in paragraphs (b)(1)(i) through (iii) of this section. The notification must be submitted to the applicable EPA Regional Office and delegated State authority as specified in § 63.13.

(i) The name and address of the owner and the operator.

(ii) The address (i.e., physical location) of the GDF.

(iii) A statement that the notification is being submitted in response to this subpart and identifying the requirements in paragraphs (a) through (c) of § 63.11118 that apply to you.

(2) You must submit a Notification of Compliance Status to the applicable EPA Regional Office and the delegated State authority, as specified in § 63.13, in accordance with the schedule specified in § 63.9(h). The Notification of

Compliance Status must be signed by a responsible official who must certify its accuracy, must indicate whether the source has complied with the requirements of this subpart, and must indicate whether the facility's throughput is determined based on the volume of gasoline loaded into all storage tanks or on the volume of gasoline dispensed from all storage tanks. If your facility is in compliance with the requirements of this subpart at the time the Initial Notification required under paragraph (b)(1) of this section is due, the Notification of Compliance Status may be submitted in lieu of the Initial Notification provided it contains the information required under paragraph (b)(1) of this section.

(3) If, prior to January 10, 2008, you satisfy the requirements in both paragraphs (b)(3)(i) and (ii) of this section, you are not required to submit an Initial Notification or a Notification of Compliance Status under paragraph (b)(1) or paragraph (b)(2) of this subsection.

(i) You operate a vapor balance system at your gasoline dispensing facility that meets the requirements of either paragraphs (b)(3)(i)(A) or (b)(3)(i)(B) of this section.

(A) Achieves emissions reduction of at least 90 percent.

(B) Operates using management practices at least as stringent as those in Table 1 to this subpart.

(ii) Your gasoline dispensing facility is in compliance with an enforceable State, local, or tribal rule or permit that contains requirements of either paragraphs (b)(3)(i)(A) or (b)(3)(i)(B) of this section.

(4) You must submit a Notification of Performance Test, as specified in § 63.9(e), prior to initiating testing required by § 63.11120(a) and (b).

(5) You must submit additional notifications specified in § 63.9, as applicable.

[73 FR 1945, Jan. 10, 2008, as amended at 73 FR 12276, Mar. 7, 2008; 76 FR 4182, Jan. 24, 2011]

§ 63.11125 What are my recordkeeping requirements?

(a) Each owner or operator subject to the management practices in § 63.11118 must keep records of all tests performed under § 63.11120(a) and (b).

(b) Records required under paragraph (a) of this section shall be kept for a period of 5 years and shall be made available for inspection by the Administrator's delegated representatives during the course of a site visit.

(c) Each owner or operator of a gasoline cargo tank subject to the management practices in Table 2 to this subpart must keep records documenting vapor tightness testing for a period of 5 years. Documentation must include each of the items specified in § 63.11094(b)(2)(i) through (viii). Records of vapor tightness testing must be retained as specified in either paragraph (c)(1) or paragraph (c)(2) of this section.

(1) The owner or operator must keep all vapor tightness testing records with the cargo tank.

(2) As an alternative to keeping all records with the cargo tank, the owner or operator may comply with the requirements of paragraphs (c)(2)(i) and (ii) of this section.

(i) The owner or operator may keep records of only the most recent vapor tightness test with the cargo tank, and keep records for the previous 4 years at their office or another central location.

(ii) Vapor tightness testing records that are kept at a location other than with the cargo tank must be instantly available (*e.g.,* via e-mail or facsimile) to the Administrator's delegated representative during the course of a site visit or within a mutually agreeable time frame. Such records must be an exact duplicate image of the original paper copy record with certifying signatures.

(d) Each owner or operator of an affected source under this subpart shall keep records as specified in paragraphs (d)(1) and (2) of this section.

(1) Records of the occurrence and duration of each malfunction of operation (*i.e.,* process equipment) or the air pollution control and monitoring equipment.

(2) Records of actions taken during periods of malfunction to minimize emissions in accordance with § 63.11115(a), including corrective actions to restore malfunctioning process and air pollution control and monitoring equipment to its normal or usual manner of operation.

[73 FR 1945, Jan. 10, 2008, as amended at 76 FR 4183, Jan. 24, 2011]

§ 63.11126 What are my reporting requirements?

(a) Each owner or operator subject to the management practices in § 63.11118 shall report to the Administrator the results of all volumetric efficiency tests required under § 63.11120(b). Reports submitted under this paragraph must be submitted within 180 days of the completion of the performance testing.

(b) Each owner or operator of an affected source under this subpart shall report, by March 15 of each year, the number, duration, and a brief description of each type of malfunction which occurred during the previous calendar year and which caused or may have caused any applicable emission limitation to be exceeded. The report must also include a description of actions taken by an owner or operator during a malfunction of an affected source to minimize emissions in accordance with § 63.11115(a), including actions taken to correct a malfunction. No report is necessary for a calendar year in which no malfunctions occurred.

[76 FR 4183, Jan. 24, 2011]

Other Requirements and Information

§ 63.11130 What parts of the General Provisions apply to me?

Table 3 to this subpart shows which parts of the General Provisions apply to you.

§ 63.11131 Who implements and 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 U.S. EPA Administrator has delegated authority to a State, local, or tribal agency, then that agency, in addition to the U.S. EPA, has the authority to implement and enforce this subpart. Contact the applicable U.S. EPA Regional Office to find out if implementation and enforcement of 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 Administrator of U.S. EPA and cannot be transferred to the State, local, or tribal agency.

(c) The authorities that cannot be delegated to State, local, or tribal agencies are as specified in paragraphs (c)(1) through (3) of this section.

(1) Approval of alternatives to the requirements in §§ 63.11116 through 63.11118 and 63.11120.

(2) Approval of major alternatives to test methods under § 63.7(e)(2)(ii) and (f), as defined in § 63.90, and as required in this subpart.

(3) Approval of major alternatives to recordkeeping and reporting under § 63.10(f), as defined in § 63.90, and as required in this subpart.

§ 63.11132 What definitions apply to this subpart?

As used in this subpart, all terms not defined herein shall have the meaning given them in the Clean Air Act (CAA), or in subparts A and BBBBBB of this part. For purposes of this subpart, definitions in this section supersede definitions in other parts or subparts.

Dual-point vapor balance system means a type of vapor balance system in which the storage tank is equipped with an entry port for a gasoline fill pipe and a separate exit port for a vapor connection.

Gasoline means any petroleum distillate or petroleum distillate/alcohol blend having a Reid vapor pressure of 27.6 kilopascals or greater, which is used as a fuel for internal combustion engines.

Gasoline cargo tank means a delivery tank truck or railcar which is loading or unloading gasoline, or which has loaded or unloaded gasoline on the immediately previous load.

Gasoline dispensing facility (GDF) means any stationary facility which dispenses gasoline into the fuel tank of a motor vehicle, motor vehicle engine, nonroad vehicle, or nonroad engine, including a nonroad vehicle or nonroad engine used solely for competition. These facilities include, but are not limited to, facilities that dispense gasoline into on- and off-road, street, or highway motor vehicles, lawn equipment, boats, test engines, landscaping equipment, generators, pumps, and other gasoline-fueled engines and equipment.

Monthly throughput means the total volume of gasoline that is loaded into, or dispensed from, all gasoline storage tanks at each GDF during a month. Monthly throughput is calculated by summing the volume of gasoline loaded into, or dispensed from, all gasoline storage tanks at each GDF during the current day, plus the total volume of gasoline loaded into, or dispensed from, all gasoline storage tanks at each GDF during the previous 364 days, and then dividing that sum by 12.

Motor vehicle means any self-propelled vehicle designed for transporting persons or property on a street or highway.

Nonroad engine means an internal combustion engine (including the fuel system) that is not used in a motor vehicle or a vehicle used solely for competition, or that is not subject to standards promulgated under section 7411 of this title or section 7521 of this title.

Nonroad vehicle means a vehicle that is powered by a nonroad engine, and that is not a motor vehicle or a vehicle used solely for competition.

Submerged filling means, for the purposes of this subpart, the filling of a gasoline storage tank through a submerged fill pipe whose discharge is no more than the applicable distance specified in § 63.11117(b) from the bottom of the tank. Bottom filling of gasoline storage tanks is included in this definition.

Vapor balance system means a combination of pipes and hoses that create a closed system between the vapor spaces of an unloading gasoline cargo tank and a receiving storage tank such that vapors displaced from the storage tank are transferred to the gasoline cargo tank being unloaded.

Vapor-tight means equipment that allows no loss of vapors. Compliance with vapor-tight requirements can be determined by checking to ensure that the concentration at a potential leak source is not equal to or greater than 100 percent of the Lower Explosive Limit when measured with a combustible gas detector, calibrated with propane, at a distance of 1 inch from the source.

Vapor-tight gasoline cargo tank means a gasoline cargo tank which has demonstrated within the 12 preceding months that it meets the annual certification test requirements in § 63.11092(f) of this part.

[73 FR 1945, Jan. 10, 2008, as amended at 76 FR 4183, Jan. 24, 2011]

Table 1 to Subpart CCCCCC of Part 63—Applicability Criteria and Management Practices for Gasoline Dispensing Facilities With Monthly Throughput of 100,000 Gallons of Gasoline or More[1]

If you own or operate	Then you must
1. A new, reconstructed, or existing GDF subject to § 63.11118	Install and operate a vapor balance system on your gasoline storage tanks that meets the design criteria in paragraphs (a) through (h).
	(a) All vapor connections and lines on the storage tank shall be equipped with closures that seal upon disconnect.
	(b) The vapor line from the gasoline storage tank to the gasoline cargo tank shall be vapor-tight, as defined in § 63.11132.
	(c) The vapor balance system shall be designed such that the pressure in the tank truck does not exceed 18 inches water pressure or 5.9 inches water vacuum during product transfer.
	(d) The vapor recovery and product adaptors, and the method of connection with the delivery elbow, shall be designed so as to prevent the over-tightening or loosening of fittings during normal delivery operations.
	(e) If a gauge well separate from the fill tube is used, it shall be provided with a submerged drop tube that extends the same distance from the bottom of the storage tank as specified in § 63.11117(b).
	(f) Liquid fill connections for all systems shall be equipped with vapor-tight caps.
	(g) Pressure/vacuum (PV) vent valves shall be installed on the storage tank vent pipes. The pressure specifications for PV vent valves shall be: a positive pressure setting of 2.5 to 6.0 inches of water and a negative pressure setting of 6.0 to 10.0 inches of water. The total leak rate of all PV vent valves at an affected facility, including connections, shall not exceed 0.17 cubic foot per hour at a pressure of 2.0 inches of water and 0.63 cubic foot per hour at a vacuum of 4 inches of water.
	(h) The vapor balance system shall be capable of meeting the static pressure performance requirement of the following equation:
	$Pf = 2e^{-500.887/v}$
	Where:
	Pf = Minimum allowable final pressure, inches of water.
	v = Total ullage affected by the test, gallons.
	e = Dimensionless constant equal to approximately 2.718.
	2 = The initial pressure, inches water.
2. A new or reconstructed GDF, or any storage tank(s) constructed after November 9, 2006, at an existing affected facility subject to § 63.11118	Equip your gasoline storage tanks with a dual-point vapor balance system, as defined in § 63.11132, and comply with the requirements of item 1 in this Table.

[1] The management practices specified in this Table are not applicable if you are complying with the requirements in § 63.11118(b)(2), except that if you are complying with the requirements in § 63.11118(b)(2)(i)(B), you must operate using management practices at least as stringent as those listed in this Table.

[73 FR 1945, Jan. 10, 2008, as amended at 73 FR 35944, June 25, 2008; 76 FR 4184, Jan. 24, 2011]

Table 2 to Subpart CCCCCC of Part 63—Applicability Criteria and Management Practices for Gasoline Cargo Tanks Unloading at Gasoline Dispensing Facilities With Monthly Throughput of 100,000 Gallons of Gasoline or More

If you own or operate	Then you must
A gasoline cargo tank	Not unload gasoline into a storage tank at a GDF subject to the control requirements in this subpart unless the following conditions are met:
	(i) All hoses in the vapor balance system are properly connected,
	(ii) The adapters or couplers that attach to the vapor line on the storage tank have closures that seal upon disconnect,
	(iii) All vapor return hoses, couplers, and adapters used in the gasoline delivery are vapor-tight,
	(iv) All tank truck vapor return equipment is compatible in size and forms a vapor-tight connection with the vapor balance equipment on the GDF storage tank, and
	(v) All hatches on the tank truck are closed and securely fastened.
	(vi) The filling of storage tanks at GDF shall be limited to unloading from vapor-tight gasoline cargo tanks. Documentation that the cargo tank has met the specifications of EPA Method 27 shall be carried with the cargo tank, as specified in § 63.11125(c).

[73 FR 1945, Jan. 10, 2008, as amended at 76 FR 4184, Jan. 24, 2011]

Table 3 to Subpart CCCCCC of Part 63—Applicability of General Provisions

Citation	Subject	Brief description	Applies to subpart CCCCCC
§ 63.1	Applicability	Initial applicability determination; applicability after standard established; permit requirements; extensions, notifications	Yes, specific requirements given in § 63.11111.
§ 63.1(c)(2)	Title V Permit	Requirements for obtaining a title V permit from the applicable permitting authority	Yes, § 63.11111(f) of subpart CCCCCC exempts identified area sources from the obligation to obtain title V operating permits.
§ 63.2	Definitions	Definitions for part 63 standards	Yes, additional definitions in § 63.11132.
§ 63.3	Units and Abbreviations	Units and abbreviations for part 63 standards	Yes.
§ 63.4	Prohibited Activities and Circumvention	Prohibited activities; Circumvention, severability	Yes.
§ 63.5	Construction/Reconstruction	Applicability; applications; approvals	Yes, except that these notifications are not required for facilities subject to § 63.11116
§ 63.6(a)	Compliance with Standards/Operation & Maintenance—Applicability	General Provisions apply unless compliance extension; General Provisions apply to area sources that become major	Yes.
§ 63.6(b)(1)-(4)	Compliance Dates for New and Reconstructed Sources	Standards apply at effective date; 3 years after effective date; upon startup; 10 years after construction or reconstruction commences for CAA section 112(f)	Yes.

Citation	Subject	Brief description	Applies to subpart CCCCCC
§ 63.6(b)(5)	Notification	Must notify if commenced construction or reconstruction after proposal	Yes.
§ 63.6(b)(6)	[Reserved]		
§ 63.6(b)(7)	Compliance Dates for New and Reconstructed Area Sources That Become Major	Area sources that become major must comply with major source standards immediately upon becoming major, regardless of whether required to comply when they were an area source	No.
§ 63.6(c)(1)-(2)	Compliance Dates for Existing Sources	Comply according to date in this subpart, which must be no later than 3 years after effective date; for CAA section 112(f) standards, comply within 90 days of effective date unless compliance extension	No, § 63.11113 specifies the compliance dates.
§ 63.6(c)(3)-(4)	[Reserved]		
§ 63.6(c)(5)	Compliance Dates for Existing Area Sources That Become Major	Area sources That become major must comply with major source standards by date indicated in this subpart or by equivalent time period (e.g., 3 years)	No.
§ 63.6(d)	[Reserved]		
63.6(e)(1)(i)	General duty to minimize emissions	Operate to minimize emissions at all times; information Administrator will use to determine if operation and maintenance requirements were met.	No.*See*§ 63.11115 for general duty requirement.
63.6(e)(1)(ii)	Requirement to correct malfunctions ASAP	Owner or operator must correct malfunctions as soon as possible.	No.
§ 63.6(e)(2)	[Reserved]		
§ 63.6(e)(3)	Startup, Shutdown, and Malfunction (SSM) Plan	Requirement for SSM plan; content of SSM plan; actions during SSM	No.
§ 63.6(f)(1)	Compliance Except During SSM	You must comply with emission standards at all times except during SSM	No.
§ 63.6(f)(2)-(3)	Methods for Determining Compliance	Compliance based on performance test, operation and maintenance plans, records, inspection	Yes.
§ 63.6(g)(1)-(3)	Alternative Standard	Procedures for getting an alternative standard	Yes.
§ 63.6(h)(1)	Compliance with Opacity/Visible Emission (VE) Standards	You must comply with opacity/VE standards at all times except during SSM	No.
§ 63.6(h)(2)(i)	Determining Compliance with Opacity/VE Standards	If standard does not State test method, use EPA Method 9 for opacity in appendix A of part 60 of this chapter and EPA Method 22 for VE in appendix A of part 60 of this chapter	No.
§ 63.6(h)(2)(ii)	[Reserved]		
§ 63.6(h)(2)(iii)	Using Previous Tests To Demonstrate Compliance With Opacity/VE Standards	Criteria for when previous opacity/VE testing can be used to show compliance with this subpart	No.
§ 63.6(h)(3)	[Reserved]		
§ 63.6(h)(4)	Notification of Opacity/VE Observation Date	Must notify Administrator of anticipated date of observation	No.

Citation	Subject	Brief description	Applies to subpart CCCCCC
§ 63.6(h)(5)(i), (iii)-(v)	Conducting Opacity/VE Observations	Dates and schedule for conducting opacity/VE observations	No.
§ 63.6(h)(5)(ii)	Opacity Test Duration and Averaging Times	Must have at least 3 hours of observation with 30 6-minute averages	No.
§ 63.6(h)(6)	Records of Conditions During Opacity/VE Observations	Must keep records available and allow Administrator to inspect	No.
§ 63.6(h)(7)(i)	Report Continuous Opacity Monitoring System (COMS) Monitoring Data From Performance Test	Must submit COMS data with other performance test data	No.
§ 63.6(h)(7)(ii)	Using COMS Instead of EPA Method 9	Can submit COMS data instead of EPA Method 9 results even if rule requires EPA Method 9 in appendix A of part 60 of this chapter, but must notify Administrator before performance test	No.
§ 63.6(h)(7)(iii)	Averaging Time for COMS During Performance Test	To determine compliance, must reduce COMS data to 6-minute averages	No.
§ 63.6(h)(7)(iv)	COMS Requirements	Owner/operator must demonstrate that COMS performance evaluations are conducted according to § 63.8(e); COMS are properly maintained and operated according to § 63.8(c) and data quality as § 63.8(d)	No.
§ 63.6(h)(7)(v)	Determining Compliance with Opacity/VE Standards	COMS is probable but not conclusive evidence of compliance with opacity standard, even if EPA Method 9 observation shows otherwise. Requirements for COMS to be probable evidence-proper maintenance, meeting Performance Specification 1 in appendix B of part 60 of this chapter, and data have not been altered	No.
§ 63.6(h)(8)	Determining Compliance with Opacity/VE Standards	Administrator will use all COMS, EPA Method 9 (in appendix A of part 60 of this chapter), and EPA Method 22 (in appendix A of part 60 of this chapter) results, as well as information about operation and maintenance to determine compliance	No.
§ 63.6(h)(9)	Adjusted Opacity Standard	Procedures for Administrator to adjust an opacity standard	No.
§ 63.6(i)(1)-(14)	Compliance Extension	Procedures and criteria for Administrator to grant compliance extension	Yes.
§ 63.6(j)	Presidential Compliance Exemption	President may exempt any source from requirement to comply with this subpart	Yes.
§ 63.7(a)(2)	Performance Test Dates	Dates for conducting initial performance testing; must conduct 180 days after compliance date	Yes.
§ 63.7(a)(3)	CAA Section 114 Authority	Administrator may require a performance test under CAA section 114 at any time	Yes.
§ 63.7(b)(1)	Notification of Performance Test	Must notify Administrator 60 days before the test	Yes.

Citation	Subject	Brief description	Applies to subpart CCCCCC
§ 63.7(b)(2)	Notification of Re-scheduling	If have to reschedule performance test, must notify Administrator of rescheduled date as soon as practicable and without delay	Yes.
§ 63.7(c)	Quality Assurance (QA)/Test Plan	Requirement to submit site-specific test plan 60 days before the test or on date Administrator agrees with; test plan approval procedures; performance audit requirements; internal and external QA procedures for testing	Yes.
§ 63.7(d)	Testing Facilities	Requirements for testing facilities	Yes.
63.7(e)(1)	Conditions for Conducting Performance Tests	Performance test must be conducted under representative conditions	No, § 63.11120(c) specifies conditions for conducting performance tests.
§ 63.7(e)(2)	Conditions for Conducting Performance Tests	Must conduct according to this subpart and EPA test methods unless Administrator approves alternative	Yes.
§ 63.7(e)(3)	Test Run Duration	Must have three test runs of at least 1 hour each; compliance is based on arithmetic mean of three runs; conditions when data from an additional test run can be used	Yes.
§ 63.7(f)	Alternative Test Method	Procedures by which Administrator can grant approval to use an intermediate or major change, or alternative to a test method	Yes.
§ 63.7(g)	Performance Test Data Analysis	Must include raw data in performance test report; must submit performance test data 60 days after end of test with the Notification of Compliance Status; keep data for 5 years	Yes.
§ 63.7(h)	Waiver of Tests	Procedures for Administrator to waive performance test	Yes.
§ 63.8(a)(1)	Applicability of Monitoring Requirements	Subject to all monitoring requirements in standard	Yes.
§ 63.8(a)(2)	Performance Specifications	Performance Specifications in appendix B of 40 CFR part 60 apply	Yes.
§ 63.8(a)(3)	[Reserved]		
§ 63.8(a)(4)	Monitoring of Flares	Monitoring requirements for flares in § 63.11 apply	Yes.
§ 63.8(b)(1)	Monitoring	Must conduct monitoring according to standard unless Administrator approves alternative	Yes.

Citation	Subject	Brief description	Applies to subpart CCCCCC
§ 63.8(b)(2)-(3)	Multiple Effluents and Multiple Monitoring Systems	Specific requirements for installing monitoring systems; must install on each affected source or after combined with another affected source before it is released to the atmosphere provided the monitoring is sufficient to demonstrate compliance with the standard; if more than one monitoring system on an emission point, must report all monitoring system results, unless one monitoring system is a backup	No.
§ 63.8(c)(1)	Monitoring System Operation and Maintenance	Maintain monitoring system in a manner consistent with good air pollution control practices	No.
§ 63.8(c)(1)(i)-(iii)	Operation and Maintenance of Continuous Monitoring Systems (CMS)	Must maintain and operate each CMS as specified in § 63.6(e)(1); must keep parts for routine repairs readily available; must develop a written SSM plan for CMS, as specified in § 63.6(e)(3)	No.
§ 63.8(c)(2)-(8)	CMS Requirements	Must install to get representative emission or parameter measurements; must verify operational status before or at performance test	No.
§ 63.8(d)	CMS Quality Control	Requirements for CMS quality control, including calibration, etc.; must keep quality control plan on record for 5 years; keep old versions for 5 years after revisions	No.
§ 63.8(e)	CMS Performance Evaluation	Notification, performance evaluation test plan, reports	No.
§ 63.8(f)(1)-(5)	Alternative Monitoring Method	Procedures for Administrator to approve alternative monitoring	No.
§ 63.8(f)(6)	Alternative to Relative Accuracy Test	Procedures for Administrator to approve alternative relative accuracy tests for continuous emissions monitoring system (CEMS)	No.
§ 63.8(g)	Data Reduction	COMS 6-minute averages calculated over at least 36 evenly spaced data points; CEMS 1 hour averages computed over at least 4 equally spaced data points; data that cannot be used in average	No.
§ 63.9(a)	Notification Requirements	Applicability and State delegation	Yes.
§ 63.9(b)(1)-(2), (4)-(5)	Initial Notifications	Submit notification within 120 days after effective date; notification of intent to construct/reconstruct, notification of commencement of construction/reconstruction, notification of startup; contents of each	Yes.
§ 63.9(c)	Request for Compliance Extension	Can request if cannot comply by date or if installed best available control technology or lowest achievable emission rate	Yes.

Citation	Subject	Brief description	Applies to subpart CCCCCC
§ 63.9(d)	Notification of Special Compliance Requirements for New Sources	For sources that commence construction between proposal and promulgation and want to comply 3 years after effective date	Yes.
§ 63.9(e)	Notification of Performance Test	Notify Administrator 60 days prior	Yes.
§ 63.9(f)	Notification of VE/Opacity Test	Notify Administrator 30 days prior	No.
§ 63.9(g)	Additional Notifications when Using CMS	Notification of performance evaluation; notification about use of COMS data; notification that exceeded criterion for relative accuracy alternative	Yes, however, there are no opacity standards.
§ 63.9(h)(1)-(6)	Notification of Compliance Status	Contents due 60 days after end of performance test or other compliance demonstration, except for opacity/VE, which are due 30 days after; when to submit to Federal vs. State authority	Yes, however, there are no opacity standards.
§ 63.9(i)	Adjustment of Submittal Deadlines	Procedures for Administrator to approve change when notifications must be submitted	Yes.
§ 63.9(j)	Change in Previous Information	Must submit within 15 days after the change	Yes.
§ 63.10(a)	Recordkeeping/Reporting	Applies to all, unless compliance extension; when to submit to Federal vs. State authority; procedures for owners of more than one source	Yes.
§ 63.10(b)(1)	Recordkeeping/Reporting	General requirements; keep all records readily available; keep for 5 years	Yes.
§ 63.10(b)(2)(i)	Records related to SSM	Recordkeeping of occurrence and duration of startups and shutdowns	No.
§ 63.10(b)(2)(ii)	Records related to SSM	Recordkeeping of malfunctions	No.*See*§ 63.11125(d) for recordkeeping of (1) occurrence and duration and (2) actions taken during malfunction.
§ 63.10(b)(2)(iii)	Maintenance records	Recordkeeping of maintenance on air pollution control and monitoring equipment	Yes.
§ 63.10(b)(2)(iv)	Records Related to SSM	Actions taken to minimize emissions during SSM	No.
§ 63.10(b)(2)(v)	Records Related to SSM	Actions taken to minimize emissions during SSM	No.
§ 63.10(b)(2)(vi)-(xi)	CMS Records	Malfunctions, inoperative, out-of-control periods	No.
§ 63.10(b)(2)(xii)	Records	Records when under waiver	Yes.
§ 63.10(b)(2)(xiii)	Records	Records when using alternative to relative accuracy test	Yes.
§ 63.10(b)(2)(xiv)	Records	All documentation supporting Initial Notification and Notification of Compliance Status	Yes.
§ 63.10(b)(3)	Records	Applicability determinations	Yes.
§ 63.10(c)	Records	Additional records for CMS	No.

Citation	Subject	Brief description	Applies to subpart CCCCCC
§ 63.10(d)(1)	General Reporting Requirements	Requirement to report	Yes.
§ 63.10(d)(2)	Report of Performance Test Results	When to submit to Federal or State authority	Yes.
§ 63.10(d)(3)	Reporting Opacity or VE Observations	What to report and when	No.
§ 63.10(d)(4)	Progress Reports	Must submit progress reports on schedule if under compliance extension	Yes.
§ 63.10(d)(5)	SSM Reports	Contents and submission	No.*See*§ 63.11126(b) for malfunction reporting requirements.
§ 63.10(e)(1)-(2)	Additional CMS Reports	Must report results for each CEMS on a unit; written copy of CMS performance evaluation; two-three copies of COMS performance evaluation	No.
§ 63.10(e)(3)(i)-(iii)	Reports	Schedule for reporting excess emissions	No.
§ 63.10(e)(3)(iv)-(v)	Excess Emissions Reports	Requirement to revert to quarterly submission if there is an excess emissions and parameter monitor exceedances (now defined as deviations); provision to request semiannual reporting after compliance for 1 year; submit report by 30th day following end of quarter or calendar half; if there has not been an exceedance or excess emissions (now defined as deviations), report contents in a statement that there have been no deviations; must submit report containing all of the information in §§ 63.8(c)(7)-(8) and 63.10(c)(5)-(13)	No.
§ 63.10(e)(3)(iv)-(v)	Excess Emissions Reports	Requirement to revert to quarterly submission if there is an excess emissions and parameter monitor exceedances (now defined as deviations); provision to request semiannual reporting after compliance for 1 year; submit report by 30th day following end of quarter or calendar half; if there has not been an exceedance or excess emissions (now defined as deviations), report contents in a statement that there have been no deviations; must submit report containing all of the information in §§ 63.8(c)(7)-(8) and 63.10(c)(5)-(13)	No, § 63.11130(K) specifies excess emission events for this subpart.
§ 63.10(e)(3)(vi)-(viii)	Excess Emissions Report and Summary Report	Requirements for reporting excess emissions for CMS; requires all of the information in §§ 63.10(c)(5)-(13) and 63.8(c)(7)-(8)	No.
§ 63.10(e)(4)	Reporting COMS Data	Must submit COMS data with performance test data	No.
§ 63.10(f)	Waiver for Recordkeeping/Reporting	Procedures for Administrator to waive	Yes.

Citation	Subject	Brief description	Applies to subpart CCCCCC
§ 63.11(b)	Flares	Requirements for flares	No.
§ 63.12	Delegation	State authority to enforce standards	Yes.
§ 63.13	Addresses	Addresses where reports, notifications, and requests are sent	Yes.
§ 63.14	Incorporations by Reference	Test methods incorporated by reference	Yes.
§ 63.15	Availability of Information	Public and confidential information	Yes.

[73 FR 1945, Jan. 10, 2008, as amended at 76 FR 4184, Jan. 24, 2011]

Indiana Department of Environmental Management
Office of Air Quality

Technical Support Document (TSD) for a Part 70 Operating Permit Renewal

Source Background and Description

Source Name:	Sycamore Ridge Landfill
Source Location:	5621 East Cottom Drive, Pimento, Indiana 47866
County:	Vigo County, Linton Township
SIC Code:	4953 (Refuse Systems)
Permit Renewal No.:	T167-36980-00116
Permit Reviewer:	David Matousek

The Office of Air Quality (OAQ) has reviewed the operating permit renewal application from Sycamore Ridge Landfill relating to the operation of a municipal solid waste landfill. On March 21, 2016, Sycamore Ridge Landfill submitted an application to the OAQ requesting to renew its operating permit. Sycamore Ridge Landfill was issued its second Part 70 Operating Permit Renewal (T167-30079-00116) on December 19, 2011.

Source Definition

This municipal solid waste landfill consists of two (2) plants considered one (1) source:

(a) Landfill 1, Sycamore Ridge Landfill is located at 5621 East Cottom Drive, Pimento, Indiana; and

(b) Landfill 2, Victory Environmental Services, Inc. is located at 12247 South Mill Street, Terre Haute, Indiana.

Since the two (2) landfills are located on contiguous or adjacent properties, belong to the same industrial grouping, and are under common control of the same entity, they are considered one (1) source, effective from the date of issuance of Part 70 Operating Permit Renewal T167-18140-00116, on October 3, 2006.

Sycamore Ridge Landfill (source ID 167-00116), located at 5621 East Cotton Drive, Pimento, IN 47866, sells landfill gas to Boral Bricks (source ID 167-00139), located at 5601 Price Road, Terre Haute, IN 47802, via a dedicated pipeline. The two properties are approximately 0.7 miles apart.

IDEM, OAQ has examined whether the brick works and the landfill consisting of Victory Environmental Services Landfill and Sycamore Ridge Landfill will be part of the same major source. The term “major source” is defined at 326 IAC 2-7-1(22). In order for these two sources to be considered one major source, they must meet all three of the following criteria:

(1) the sources must be under common ownership or common control;

(2) the sources must have the same two-digit Standard Industrial Classification (SIC) Code or one must serve as a support facility for the other; and

(3) the sources must be located on contiguous or adjacent properties.

IDEM, OAQ will first look at whether the two plants are under common ownership or common control. The plants are owned by separate corporations that have no common parent company. Therefore no common ownership exists.

In 1996, IDEM adopted a nonrule policy document, Air-005-NPD, titled Guidance on Definition of "Source" for Collocated Activities. The guidance endorses the but/for test for determining whether common control exists when there is no common ownership. The test considers the relationship between the two sources. Common control exists if the test is satisfied.

The but/for test examines whether an auxiliary plant would exist absent the existence of the primary plant. This is an examination of whether the auxiliary plant is so dependent on the primary plant that if the primary plant were to cease operations, then the auxiliary would also have to shut down. Boral Bricks purchases landfill gas from Sycamore Ridge Landfill to fuel its Tunnel Kiln. The kiln can use natural gas as a backup fuel. If the landfill were to cease providing landfill gas, Boral Bricks would continue to operate. If Boral Bricks were to cease operation, the landfill could find another customer for its gas or burn off the gas in a flare. Since neither plant is dependent on the other no common control exists. The two plants do not meet the first element of the definition of a major source.

The second element of the major source definition is whether the sources have the same two-digit Standard Industrial Classification (SIC) Code, or if one serves as a support facility for the other. The SIC Codes can be found at http://www.osha.gov/pls/imis/sicsearch.html on the United States Department of Labor, Occupational Safety and Health Administration website. The proper two-digit code for Boral Bricks, whose main product is bricks, is Major Group 32: Stone, Clay, Glass, and Concrete Products. The landfill's two-digit code is Major Group 49: Electric, Gas, and Sanitary Services. The two sources do not have the same two-digit SIC Code.

A plant is considered a support facility if at least 50% of its output is dedicated to another plant. None of the bricks from Boral Bricks go to the landfill. The landfill's output includes the work it does in accepting and processing sanitary waste as well as the production of landfill gas. The landfill gas sold to Boral Bricks will be less than 50% of the total output of the landfill. Therefore, neither plant provides 50% or more of its output to the other. Since the brick works and the landfill do not have the same two-digit SIC Code and the support relationship is less than 50%, the two plants do not meet the second element of the definition of a major source.

The plants are located on adjacent properties connected by a dedicated pipeline. Therefore, the third element of the definition is met. However, since the plants are not under common control, do not have the same two-digit SIC Code and neither is a support facility, IDEM, OAQ has determined that the plants do not meet all the elements of the definition and are not part of the same major source.

Permitted Emission Units and Pollution Control Equipment

(a) One (1) municipal solid waste landfill. The original landfill (Victory Environmental Services, Inc.) was constructed in 1972 and has a maximum design capacity of 3,601,000 megagrams (Mg). The expanded landfill (Sycamore Ridge Landfill) was constructed in 2003 and has a maximum design capacity of 17,003,782 Mg. [40 CFR 61, Subpart M] [40 CFR 60, Subpart WWW] [40 CFR 63, Subpart AAAA]

(b) One (1) Active Gas Collection and Control System, identified as GCCS-VES, for Victory Environmental Services, Inc., including an open flare with a design capacity of 1,200 standard cubic feet per minute with a maximum heat input capacity of 41.76 MMBtu/hr. The Gas Collection and Control System consists of vertical gas extraction wells connected by a network of header piping that will be used to transport the collected landfill gas to a central point of service. Landfill gas will be collected from the landfill by inducing a vacuum on the well field using an in-line blower system. The GCCS-VES commenced construction in 2004. [40 CFR 60, Subpart WWW] [40 CFR 63, Subpart AAAA]

(c) One (1) Active Gas Collection and Control System, identified as GCCS-SRL, for Sycamore Ridge Landfill, including one (1) candlestick flare, with a maximum capacity of 4,000 scfm of landfill gas with a maximum heat input capacity of 139.20 MMBtu/hr. The Gas Collection and Control System consists of vertical gas extraction wells connected by a network of header piping that will be used to transport the collected landfill gas to a central point of service. Landfill gas will be collected from the landfill by inducing a vacuum on the well field using an in-line blower system. The GCCS-SRL commenced construction in 2008. [40 CFR 60, Subpart WWW] [40 CFR 63, Subpart AAAA]

Specifically Regulated Insignificant Activities

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

(a) Six (6) portable welders, Unit #3, using less than 1,200 pounds of stick per year, total. [326 IAC 6.5]

(b) Four (4) propane-fired space heaters, Unit #13, with a combined maximum heat input capacity of less than 6.0 MMBtu/hr, total. [326 IAC 6.5]

(c) Two (2) portable kerosene heaters, with a combined heat input capacity of less than 2.0 MMBtu/hr, identified as Unit #20. [326 IAC 6.5]

(d) Two (2) 500 gallon used oil tanks and a waste oil-fired furnace (Clean Burn CB-2500), identified as Unit #21, with a maximum heat input capacity of less than 2.0 MMBtu/hr, emissions are uncontrolled. [326 IAC 6.5]

(e) Paved and unpaved roads. [326 IAC 6.5]

(f) One (1) 1,000 gallon gasoline AST with vent, identified as Unit ID #23, with a monthly gasoline throughput of less than ten thousand (10,000) gallons, constructed prior to November 9, 2006. [40 CFR 63, Subpart CCCCCC]

Other Insignificant Activities

(a) One (1) 55 gallon drum of transmission fluid, Unit #5

(b) One (1) 300 gallon above ground storage tank (AST) for antifreeze, Unit #7

(c) One (1) 400 gallon AST for hydraulic oil, Unit #8

(d) One (1) 250 gallon AST for used motor oil tank, Unit #10

(e) One (1) 500 gallon AST for propane, Unit #12

(f) Two (2) 35,000 gallon AST for diesel storage, Unit #14

(g) One (1) 26,000 gallon underground storage tank (UST) for leachate, Unit #15

(h) Two (2) 55 gallon drums of Castrol gear oil, Unit #16

(i) Two (2) 250 gallon AST for hydraulic fluid, Unit #17

(j) One (1) 250 gallon AST for gear oil, Unit #18

(k) One (1) 375 gallon AST for transmission fluid, Unit #19

(l) One (1) 1,000 gallon AST for on-road diesel, Unit #25

(m) One (1) portable 375 gallon tank for motor oil, Unit #29

(n) One (1) 250 gallon storage tank for transmission fluid, Unit #30

(o) One (1) 300 gallon storage tank for kerosene, Unit #32

(p) Two (2) 200 gallon propane tanks, Unit #33

(q) One (1) 55 gallon drum of transmission oil, Unit #34

(r) One (1) 500 gallon AST for used oil storage for the boiler, Unit #35

Existing Approvals

Since the issuance of the Part 70 Operating Permit Renewal (T167-30079-00116) on December 19, 2011, the source has constructed or has been operating under the following additional approvals:

(a) Administrative Amendment No. 167-31434-00116, issued on February 22, 2012;

(b) Administrative Amendment No. 167-32050-00116, issued on June 29, 2012;

(c) Significant Permit Modification No. 167-32729-00116, issued on February 27, 2014;

(d) Significant Source Modification No. 167-34648-00116, issued on October 22, 2014; and

(e) Significant Permit Modification No. 167-34649-00116, issued on November 13, 2014.

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

(a) There are no enforcement actions pending.

(b) In accordance with 326 IAC 2-7-4(a)(1)(D), a timely renewal application is one that is submitted at least nine (9) months prior to the expiration date of the source's existing operating permit. The existing permit expires on December 19, 2016 and a renewal application from this source was due on March 24, 2016. A timely renewal application was received on March 21, 2016.

Emission Calculations

See Appendix A of this document for detailed emission calculations.

County Attainment Status

The source is located in Vigo County, Linton Township

Pollutant	Designation
SO_2	Non-attainment effective October 4, 2013, for the Fayette and Harrison Twp. Better than national standards for the remainder of the county.
CO	Unclassifiable or attainment effective November 15, 1990.
O_3	Unclassifiable or attainment effective July 20, 2012, for the 2008 8-hour ozone standard.[1]
$PM_{2.5}$	Unclassifiable or attainment effective April 5, 2005, for the annual $PM_{2.5}$ standard.
$PM_{2.5}$	Unclassifiable or attainment effective December 13, 2009, for the 24-hour $PM_{2.5}$ standard.
PM_{10}	Unclassifiable effective November 15, 1990.
NO_2	Cannot be classified or better than national standards.
Pb	Unclassifiable or attainment effective December 31, 2011.

[1]Unclassifiable or attainment effective October 18, 2000, for the 1-hour ozone standard which was revoked effective June 15, 2005.

(a) Ozone Standards
Volatile organic compounds (VOC) and Nitrogen Oxides (NO_x) 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 NO_x emissions are considered when evaluating the rule applicability relating to ozone. Vigo County has been designated as attainment or unclassifiable for ozone. Therefore, VOC and NO_x emissions were reviewed pursuant to the requirements for Prevention of Significant Deterioration (PSD), 326 IAC 2-2.

(b) $PM_{2.5}$
Vigo County has been classified as attainment for $PM_{2.5}$. Therefore, direct $PM_{2.5}$, SO_2, and NO_x emissions were reviewed pursuant to the requirements for Prevention of Significant Deterioration (PSD), 326 IAC 2-2.

(c) Other Criteria Pollutants
Vigo County, Linton Township has been classified as attainment or unclassifiable in Indiana for SO_2, CO, PM_{10}, NO_2, and lead. Therefore, these emissions were reviewed pursuant to the requirements for Prevention of Significant Deterioration (PSD), 326 IAC 2-2.

Fugitive Emissions

Since this type of operation is not one of the twenty-eight (28) listed source categories under 326 IAC 2-2, 326 IAC 2-3, or 326 IAC 2-7, and there is no applicable New Source Performance Standard or National Emission Standard for Hazardous Air Pollutants that was in effect on August 7, 1980, that the landfill was subject to at that time, fugitive emissions are not counted toward the determination of PSD, Emission Offset, and Part 70 Permit applicability. The fugitive emissions of hazardous air pollutants are counted toward the determination of Part 70 Permit applicability.

The landfill is subject to 40 CFR 61, Subpart M; however, landfills were not subject to this National Emission Standard for Hazardous Air Pollutants until after August 7, 1980.

Unrestricted Potential Emissions

This table reflects the unrestricted potential emissions of the source.

Unrestricted Potential Emissions	
Pollutant	**Tons/year**
PM	14.12
PM_{10}	13.98
$PM_{2.5}$	13.98
SO_2	19.55
VOC	61.69
CO	307.41
NO_x	60.07
Single HAP-Toluene	13.92
Total HAP	45.01

HAPs	Tons/year
Toluene	13.92
Hydrochloric Acid	5.80
Xylene (Mixed)	4.93
Dichloromethane	4.66
Perchloroethylene	2.38
Hexane	2.23
Ethylbenzene	1.88
Vinyl Chloride	1.76
Trichloroethylene	1.42
Acrylonitrile	1.29
Other Minor (less than 1 TPY)	4.74
Total	**45.01**

Appendix A of this TSD reflects the unrestricted potential emissions of the source.

On June 23, 2014, in the case of Utility Air Regulatory Group v. EPA, cause no. 12-1146, (available at http://www.supremecourt.gov/opinions/13pdf/12-1146_4g18.pdf) the United States Supreme Court ruled that the U.S. EPA does not have the authority to treat greenhouse gases (GHGs) as an air pollutant for the purpose of determining operating permit applicability or PSD Major source status. On July 24, 2014, the U.S. EPA issued a memorandum to the Regional Administrators outlining next steps in permitting decisions in light of the Supreme Court's decision. U.S. EPA's guidance states that U.S. EPA will no longer require PSD or Title V permits for sources "previously classified as 'Major' based solely on greenhouse gas emissions."

The Indiana Environmental Rules Board adopted the GHG regulations required by U.S. EPA at 326 IAC 2-2-1(zz), pursuant to Ind. Code § 13-14-9-8(h) (Section 8 rulemaking). A rule, or part of a rule, adopted under Section 8 is automatically invalidated when the corresponding federal rule, or part of the rule, is invalidated. Due to the United States Supreme Court Ruling, IDEM, OAQ cannot consider GHGs emissions to determine operating permit applicability or PSD applicability to a source or modification.

(a) The potential to emit (as defined in 326 IAC 2-7-1(30)) of CO is equal to or greater than 100 tons per year. Therefore, the source is subject to the provisions of 326 IAC 2-7 and will be issued a Part 70 Operating Permit Renewal.

(b) The potential to emit (as defined in 326 IAC 2-7-1(30)) of any single HAP is equal to or greater than ten (10) tons per year and the potential to emit (as defined in 326 IAC 2-7-1(30)) of a combination of HAPs is equal to or greater than twenty-five (25) tons per year. Therefore, the source is subject to the provisions of 326 IAC 2-7.

Part 70 Permit Conditions

This source is subject to the requirements of 326 IAC 2-7, because the source met 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 new 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.

Potential To Emit of the Entire Source After Issuance of Renewal (tons/year)									
Emission Unit	**PM***	**PM_{10}**	**Direct $PM_{2.5}$**	**SO_2**	**VOC**	**CO**	**NOx**	**Total HAP**	**HCL**
Victory Environmental Services Landfill	0.00	0.00	0.00	0.00	0.10	0.02	0.00	0.05	0.00
Victory Environmental Services Fugitive	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.81	0.00
Sycamore Ridge Landfill	0.00	0.00	0.00	0.00	1.07	0.21	0.00	0.53	0.00
Sycamore Ridge Fugitive	0.00	0.00	0.00	0.00	0.00	0.00	0.00	8.86	0.00
GCCS-VES (1,200 SCFM Flare)	9.45	9.45	9.45	8.82	1.17	246.79	45.36	4.49	4.49
GCCS-SRL (4,000 SCFM Flare)									
Insignificant Activities									
Welding	0.02	0.02	0.02	0.00	0.00	0.00	0.00	0.00	0.00
Propane Heaters	0.06	0.20	0.20	0.03	0.29	2.15	3.73	0.00	0.00
Kerosene Heaters	0.13	0.21	0.21	4.44	0.02	0.31	1.25	3.0E-03	0.00
Used Oil Combustion	2.68	2.32	2.32	4.60	0.06	0.31	1.19	0.87	0.45
Gasoline Dispensing Facility	0.00	0.00	0.00	0.00	1.45	0.00	0.00	0.10	0.00
Potential to Emit After Issuance	**12.34**	**12.20**	**12.20**	**17.89**	**4.17**	**249.80**	**51.53**	**15.72**	**4.95**
Title V Major Source Thresholds	**NA**	**100**	**100**	**100**	**100**	**100**	**100**	**25**	**10**
PSD Major Source Thresholds	**250**	**250**	**250**	**250**	**250**	**250**	**250**	**NA**	**NA**

* Under the Part 70 Permit program (40 CFR 70), PM10 and PM2.5, not particulate matter (PM), are each considered as a "regulated air pollutant".

On June 23, 2014, in the case of Utility Air Regulatory Group v. EPA, cause no. 12-1146, (available at http://www.supremecourt.gov/opinions/13pdf/12-1146_4g18.pdf) the United States Supreme Court ruled that the U.S. EPA does not have the authority to treat greenhouse gases (GHGs) as an air pollutant for the purpose of determining operating permit applicability or PSD Major source status. On July 24, 2014, the U.S. EPA issued a memorandum to the Regional Administrators outlining next steps in permitting decisions in light of the Supreme Court's decision. U.S. EPA's guidance states that U.S. EPA will no longer require PSD or Title V permits for sources "previously classified as 'Major' based solely on greenhouse gas emissions."

The Indiana Environmental Rules Board adopted the GHG regulations required by U.S. EPA at 326 IAC 2-2-1(zz), pursuant to Ind. Code § 13-14-9-8(h) (Section 8 rulemaking). A rule, or part of a rule, adopted under Section 8 is automatically invalidated when the corresponding federal rule, or part of the rule, is invalidated. Due to the United States Supreme Court Ruling, IDEM, OAQ cannot consider GHGs emissions to determine operating permit applicability or PSD applicability to a source or modification.

(a) This existing source is not a major stationary source, under PSD (326 IAC 2-2), because no PSD regulated pollutant is emitted at a rate of two hundred fifty (250) tons per year or more and it is not one of the twenty-eight (28) listed source categories, as specified in 326 IAC 2-2-1(ff)(1).

(b) These emissions are based upon Appendix A to the Technical Support Document.

(c) This existing source is not a major source of HAPs, as defined in 40 CFR 63.2, because HAPs emissions are less than ten (10) tons per year for any single HAP and less than twenty-five (25) tons per year of a combination of HAPs. Therefore, this source is an area source under Section 112 of the Clean Air Act (CAA).

The source wide potential to emit CO is greater than the PSD major source threshold of two hundred and fifty (250) tons per year. Therefore, the Permittee accepted a limit on the annual usage of landfill gas in flares GCCS-VES and GCCS-SRL to remain a minor source for PSD. In order to render the requirements of 326 IAC 2-2 (PSD) not applicable, the Permittee accepted the following limits:

(a) Combined landfill gas usage in the landfill gas-fired flares, identified as GCCS-VES and GCCS-SRL, shall not exceed 2,300 MMCF per twelve (12) consecutive month period with compliance determined at the end of each month.

(b) CO emissions from the landfill gas-fired flares, identified as GCCS-VES and GCCS-SRL shall not exceed 0.370 lb/MMBtu.

(c) The heat content of the landfill gas shall not exceed 580 Btu/Ft^3.

Compliance with these limits, combined with the potential to emit CO from all other emission units at this source, shall limit the source-wide potential to emit of CO to less than two hundred and fifty (250) tons per twelve consecutive month period and will render the requirements of 326 IAC 2-2 (Prevention of Significant Deterioration (PSD)) not applicable to the entire source.

Federal Rule Applicability

CAM

(a) Pursuant to 40 CFR 64.2, Compliance Assurance Monitoring (CAM) is applicable to each existing pollutant-specific emission unit that meets 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 Sycamore Ridge Landfill has two emissions units with a potential to emit before controls equal to or greater than a major source threshold. The landfill consisting of Victory and Sycamore Ridge has the potential to emit a single HAP in excess of 10 TPY and combined HAPs in excess of 25 TPY. Also, the 4,000 SCFM LFG flare identified as GCCS-SRL has the potential to emit CO in excess of 100 TPY. The landfill gas flare GCCS-SRL is not subject to CAM; because, CO emissions are uncontrolled. The landfill is not subject to CAM for HAPs, because the emission limitations and control requirements are pursuant to a post November 15, 1990 New Source Performance Standard. 40 CFR 60, Subpart WWW was promulgated on March 12, 1996. Therefore, the provisions of 40 CFR 64 are not included in the permit for the landfill or the landfill gas flare.

NSPS

(a) **40 CFR 60, Subpart Cc (Emission Guidelines and Compliance Times for Municipal Solid Waste Landfills) (326 IAC 12):** This subpart establishes emission guidelines and compliance times for certain pollutants from certain designated municipal solid waste (MSW) landfills. A municipal solid waste landfill means an entire disposal facility in a contiguous geographical space where household waste is placed in or on land. 40 CFR 60, Subpart Cc applies to each MSW landfill for which construction, reconstruction, or modification was commenced before May 30, 1991. The original landfill (Victory Landfill) began operation in 1972 and was modified in 2003 (Sycamore Ridge Landfill). This source is not subject to the provisions of 40 CFR 60, Subpart Cc because the landfill was modified after May 30, 1991.

(b) **40 CFR 60, Subpart Dc (Standards of Performance for Small Industrial-Commercial-Institutional Steam Generating Units) (326 IAC 12):** The provisions of 40 CFR 60, Subpart Dc are applicable to each steam generating unit for which construction, modification, or reconstruction is commenced after June 9, 1989 and that has a design heat input capacity of 10 MMBtu/hr or greater but less than or equal to 100 MMBtu/hr. This source does not contain any steam generating units. The waste oil-fired furnace is an indirect heating unit using a heat exchanger to transfer heat without generating steam. In addition, the maximum heat input capacity of this unit is less than 2 MMBtu/hr. Therefore, the provisions of 40 CFR 60, Subpart Dc are not included in the permit.

(c) **40 CFR 60, Subpart K (Standards of Performance for Storage Vessels for Petroleum Liquids for which Construction, Reconstruction, or Modification Commenced after June 11, 1973, and Prior to May 19, 1978) (326 IAC 12):** This subpart applies to each petroleum liquid storage vessel with a storage capacity greater than 40,000 gallons (151,412 liters) but not exceeding 65,000 gallons (246,052 liters), which was constructed after March 8, 1974 and prior to May 19, 1978, or has a capacity greater than 65,000 gallons, which commenced construction after June 11, 1973, and prior to May 19, 1978. None of the petroleum liquid storage vessels located at this source has a storage capacity greater than 40,000 gallons. Therefore, the provisions of 40 CFR 60, Subpart K are not included in the permit.

(d) **40 CFR 60, Subpart Ka (Standards of Performance for Storage Vessels for Petroleum Liquids for which Construction, Reconstruction, or Modification Commenced after May 18, 1978, and Prior to July 23, 1984) (326 IAC 12):** The affected facility to which 40 CFR 60, Subpart Ka applies is each petroleum liquid storage vessel with a capacity greater than 40,000 gallons (151,416 liters) for which construction commenced after May 18, 1978 and prior to July 23, 1984. None of the petroleum liquid storage vessels located at this source has a storage capacity greater than 40,000 gallons. Therefore, the provisions of 40 CFR 60, Subpart Ka are not included in the permit.

(e) **40 CFR 60, Subpart Kb (Standards of Performance for Volatile Organic Liquid Storage Vessels (including Petroleum Liquid Storage Vessels) for which Construction, Reconstruction, or Modification Commenced after July 23, 1984) (326 IAC 12):** The affected facility to which 40 CFR 60, Subpart Kb applies is each storage vessel with a capacity greater than or equal to 19,812.90 gallons (75 cubic meters) that is used to store volatile organic liquids (VOL) for which construction, reconstruction, or modification is commenced after July 23, 1984. Storage vessels with a capacity greater than 39,890 gallons (151 cubic meters) storing a liquid with a maximum true vapor pressure less than 0.5076 psi (3.5 kPa), or with a capacity greater than or equal to 19,812.90 gallons but less than 39,890 gallons storing a liquid with a maximum true vapor pressure less than 2.18 psi (15 kPa) are not subject to 40 CFR 60, Subpart Kb. This source contains a 26,000 gallon underground leachate storage tank that qualifies as a volatile organic liquid storage vessel. However, the tank contains a dilute volatile organic liquid with a maximum true vapor pressure of less than 2.18 psi (15 kPa). Therefore, the provisions of 40 CFR 60, Subpart Kb are not included in the permit.

(f) **40 CFR 60, Subpart XX (Standards of Performance for Bulk Gasoline Terminals) (326 IAC 12):** The affected facility to which 40 CFR 60, Subpart XX applies is the total of all the loading racks at a bulk gasoline terminal which deliver liquid product into gasoline tank trucks for which construction, reconstruction, or modification commenced after December 17, 1980. A bulk gasoline terminal is defined in the rule as any gasoline facility which receives gasoline by pipeline, ship or barge, and has a gasoline throughput of 20,000 gallons (75,700 liters) per day. The gasoline dispensing facility located at this source does not meet the definition of a bulk gasoline terminal. Therefore, the provisions of 40 CFR 60, Subpart XX are not included in the permit.

(g) **40 CFR 60, Subpart WWW (Standards of Performance for Municipal Solid Waste Landfills) (326 IAC 12):** The municipal solid waste landfill is subject to the Standards of Performance for Municipal Solid Waste Landfills (40 CFR 60, Subpart WWW), which is incorporated by reference as 326 IAC 12, and included as Attachment A of the permit. The affected facility to which 40 CFR 60, Subpart WWW applies includes each municipal solid waste landfill that commenced construction, reconstruction, or modification on or after May 30, 1991. This landfill was constructed in 1972 and was modified in 2003. Therefore, the provisions of 40 CFR 60, Subpart WWW are included in the permit. The emission units subject to 40 CFR 60, Subpart WWW are shown below:

1) One (1) municipal solid waste landfill. The original landfill (Victory Environmental Services, Inc.) was constructed in 1972 and has a maximum design capacity of 3,601,000 megagrams (Mg). The expanded landfill (Sycamore Ridge Landfill) was constructed in 2003 and has a maximum design capacity of 17,003,782 Mg. [40 CFR 61, Subpart M] [40 CFR 60, Subpart WWW]
[40 CFR 63, Subpart AAAA]

2) One (1) Active Gas Collection and Control System, identified as GCCS-VES, for Victory Environmental Services, Inc., including an open flare with a design capacity of 1,200 standard cubic feet per minute with a maximum heat input capacity of 41.76 MMBtu/hr. The Gas Collection and Control System consists of vertical gas extraction wells connected by a network of header piping that will be

used to transport the collected landfill gas to a central point of service. Landfill gas will be collected from the landfill by inducing a vacuum on the well field using an in-line blower system. The GCCS-VES commenced construction in 2004. [40 CFR 60, Subpart WWW] [40 CFR 63, Subpart AAAA]

3) One (1) Active Gas Collection and Control System, identified as GCCS-SRL, for Sycamore Ridge Landfill, including one (1) candlestick flare, with a maximum capacity of 4,000 scfm of landfill gas with a maximum heat input capacity of 139.20 MMBtu/hr. The Gas Collection and Control System consists of vertical gas extraction wells connected by a network of header piping that will be used to transport the collected landfill gas to a central point of service. Landfill gas will be collected from the landfill by inducing a vacuum on the well field using an in-line blower system. The GCCS-SRL commenced construction in 2008. [40 CFR 60, Subpart WWW] [40 CFR 63, Subpart AAAA]

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)(i), (b)(2)(ii)(A), (b)(2)(iii)(A and C), (b)(2)(iv and v), and (d);
4) 40 CFR 60.753;
5) 40 CFR 60.754(a)(1)(i), (a)(2)(ii), (a)(3)(i and ii), (b), (c), and (e);
6) 40 CFR 60.755(a)(1)(ii and iii), (a)(2), (a)(3), (a)(4), (a)(5), (b), (c), (d), and (e);
7) 40 CFR 60.756(a), (c), and (f);
8) 40 CFR 60.757(a)(1)(ii), (a)(2), (a)(3), (b)(3), (c), (d), (e), (f), and (g);
9) 40 CFR 60.758(a), (b)(1), (b)(4), (c)(2), (d), and (e);
10) 40 CFR 60.759

<u>Operational Standards for Collection and Control Systems</u>
In order to comply with 40 CFR 60.752(b)(2)(ii) and 40 CFR 60.753, the Permittee shall:

1) Operate the collection system such that gas is collected from each area, cell, or group of cells in the municipal solid waste landfill in which solid waste has been in place for five years if active or two (2) years or more if closed or at final grade.

2) Operate the collection system with negative pressure at each wellhead except under the following conditions:

   (i) Fire or increased well temperature. The Permittee 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 40 CFR 60.757(f)(1).

   (ii) Use of a geomembrane or synthetic cover. The Permittee shall develop acceptable pressure limits in the design plan.

   (iii) A decommissioned well. A well may experience a static positive pressure after shut down to accommodate for declining flows. All design changes shall be approved by the Office of Air Quality (OAQ). IDEM, OAQ considers the decommissioning of a well as an operational change rather than a design change and no prior approval from IDEM, OAQ is necessary to decommission a well.

3) 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, except as indicated below:

(i) Pursuant to Administrative Amendment 167-28653-00116, the landfill gas temperature at well G159 shall not exceed 60 °C (140 °F).

(ii) Pursuant to Administrative Amendment 167-31434-00116, the landfill gas temperature at well G104 shall not exceed 60 °C (140 °F).

(iii) Pursuant to Administrative Amendment 167-31434-00116, oxygen levels in the landfill gas at wells VEGW05, VEGW06, VEGW07 and VEGW08 shall not exceed 21%.

(iv) Pursuant to 2nd Administrative Amendment 167-32050-00116, oxygen levels in the landfill gas at well G101 shall not exceed 12%.

(v) Pursuant to Significant Permit Modification No. 167-32729-00116, oxygen levels in the landfill gas well VEGW04 shall not exceed 21%.

(vi) Pursuant to Significant Permit Modification No. 167-32729-00116, the landfill gas temperature at landfill gas wells G102, G108, G111, and G120 shall not exceed 60 °C (140 °F).

(vii) Pursuant to Significant Permit Modification No. 167-34649-00116, oxygen levels in the landfill gas well VEGW02 shall not exceed 21%.

(viii) Pursuant to Significant Permit Modification No. 167-34649-00116, the landfill gas temperature at landfill gas well G121R shall not exceed 60 °C (140 °F).

The Permittee may establish a higher operating temperature, nitrogen or oxygen value at other particular wells. 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.

A) The nitrogen level shall be determined using Method 3C, unless an alternative method is established as allowed by 40 CFR 60.752(b)(2)(i).

B) Unless an alternative test method is established as allowed by 40 CFR 60.752(b)(2)(i), the oxygen shall be determined by an oxygen meter using Method 3A except that; the span shall be set so that the regulatory limit is between 20 and 50 percent of the span; a data recorder is not required; only two calibration gases are required, a zero and span, and ambient air may be used as the span; a calibration error check is not required; the allowable sample bias, zero drift, and calibration drift are +/- 10 percent.

4) Operate the collection system so that the methane concentration is less than 500 parts per million above background at the surface of the landfill. To determine if this level is exceeded, the Permittee shall conduct surface testing around the perimeter of the collection area and along a pattern that traverses the landfill at 30 meter intervals and where visual observations indicate elevated concentrations of landfill gas, such as distressed vegetation and cracks or seeps in the cover. The Permittee may establish an 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.

5) Operate the system such that all collected gases are vented to a control system designed and operated in compliance with 40 CFR 60.752(b)(2)(iii). In the event the collection or control system is inoperable, the gas mover system shall be shut down and all valves in the collection and control system contributing to venting of the gas to the atmosphere shall be closed within one hour.

6) Operate the control system at all times when the collected gas is routed to the system.

7) If monitoring demonstrates that the operational requirements in 40 CFR 60.753(b), (c), or (d) are not met, corrective action shall be taken as specified in 40 CFR 60.755(a)(3) through (5) or 40 CFR 60.755(c). If corrective actions are taken as specified in 40 CFR 60.755, the monitored exceedance is not a violation of the operational requirements in 40 CFR 60.753.

The provisions of 40 CFR 60, Subpart A – General Provisions, which are incorporated by reference in 326 IAC 12-1, apply to the facilities described in this section except when otherwise specified in 40 CFR 60, Subpart WWW.

(h) There are no other New Source Performance Standards (NSPS) (326 IAC 12 and 40 CFR Part 60) included in the permit.

NESHAP:

(a) **40 CFR 61, Subpart M (National Emission Standards for Asbestos) (326 IAC 14-2):** This subpart applies to active waste disposal sites that receive asbestos-containing waste material from asbestos mills, and from activities containing commercial asbestos in manufacturing, fabrication, demolition, renovation, and spraying operations. The municipal solid waste landfill remains subject to the National Emission Standards for Asbestos (40 CFR 61, Subpart M), which is incorporated by reference as 326 IAC 14, and included as Attachment B of this permit. The affected facility is listed below:

1) One (1) municipal solid waste landfill. The original landfill (Victory Environmental Services, Inc.) was constructed in 1972 and has a maximum design capacity of 3,601,000 megagrams (Mg). The expanded landfill (Sycamore Ridge Landfill) was constructed in 2003 and has a maximum design capacity of 17,003,782 Mg. [40 CFR 61, Subpart M] [40 CFR 60, Subpart WWW]
[40 CFR 63, Subpart AAAA]

Nonapplicable portions of the NESHAP will not be included in the permit. The municipal solid waste landfill is subject to the following portions of 40 CFR 61, Subpart M:

1) 40 CFR 61.140;
2) 40 CFR 61.141;
3) 40 CFR 61.154;
4) 40 CFR 61.156, Table 1; and
5) 40 CFR 61.157(a) and (b)(5).

The provisions of 40 CFR 61, Subpart A – General Provisions, which are incorporated by reference in 326 IAC 14-1, apply to the facilities described in this section except when otherwise specified in 40 CFR 61, Subpart M.

(b) **40 CFR 63, Subpart R (National Emission Standards for Gasoline Distribution Facilities (Bulk Gasoline Terminals and Pipeline Breakout Stations) (326 IAC 20-10):** The affected facilities to which 40 CFR 63, Subpart R applies is each bulk gasoline terminal, except bulk gasoline terminals where the owner or operator has documented and recorded an emissions screening factor of less than 1.0. A bulk gasoline terminal is

defined in the rule as a gasoline facility which receives gasoline by pipeline, ship, or barge, and has a gasoline throughput greater than 20,000 gallons (75,700 cubic meters) per day. The gasoline dispensing facility located at this source does not meet the definition of a bulk gasoline terminal. Therefore, the requirements of 40 CFR 63, Subpart R are not included in the permit.

(c) **40 CFR 63, Subpart AAAA (National Emission Standards for Hazardous Air Pollutants: Municipal Solid Waste Landfills) (326 IAC 20-67):** The provisions of this subpart establish national emission standards for hazardous air pollutants from existing and new municipal solid waste landfills. 40 CFR 63, Subpart AAAA applies to municipal solid waste landfills that have accepted waste since November 8, 1987 or have additional capacity for future waste deposition and fit into one of these categories:

(1) The landfill is a major source of HAP.

(2) The landfill is collocated with a major source of HAP.

(3) The landfill is an area source of HAP, has a design capacity equal to or greater than 2.5 million megagrams and 2.5 million cubic meters, and has estimated non-methane organic carbon (NMOC) emissions of 50 megagrams or more.

This is an area source of HAP with estimated NMOC emissions of 50 megagrams (Mg) or more and a design capacity equal to or greater than 2.5 million Mg. Therefore, the municipal solid waste landfill remains subject to the National Emission Standards for Hazardous Air Pollutants: Municipal Solid Waste Landfills (40 CFR 63, Subpart AAAA), which is incorporated by reference as 326 IAC 20-67, and included as Attachment C of this permit. The affected facilities are listed below:

(1) One (1) municipal solid waste landfill. The original landfill (Victory Environmental Services, Inc.) was constructed in 1972 and has a maximum design capacity of 3,601,000 megagrams (Mg). The expanded landfill (Sycamore Ridge Landfill) was constructed in 2003 and has a maximum design capacity of 17,003,782 Mg. [40 CFR 61, Subpart M] [40 CFR 60, Subpart WWW]
[40 CFR 63, Subpart AAAA]

(2) One (1) Active Gas Collection and Control System, identified as GCCS-VES, for Victory Environmental Services, Inc., including an open flare with a design capacity of 1,200 standard cubic feet per minute with a maximum heat input capacity of 41.76 MMBtu/hr. The Gas Collection and Control System consists of vertical gas extraction wells connected by a network of header piping that will be used to transport the collected landfill gas to a central point of service. Landfill gas will be collected from the landfill by inducing a vacuum on the well field using an in-line blower system. The GCCS-VES commenced construction in 2004.
[40 CFR 60, Subpart WWW] [40 CFR 63, Subpart AAAA]

(3) One (1) Active Gas Collection and Control System, identified as GCCS-SRL, for Sycamore Ridge Landfill, including one (1) candlestick flare, with a maximum capacity of 4,000 scfm of landfill gas with a maximum heat input capacity of 139.20 MMBtu/hr. The Gas Collection and Control System consists of vertical gas extraction wells connected by a network of header piping that will be used to transport the collected landfill gas to a central point of service. Landfill gas will be collected from the landfill by inducing a vacuum on the well field using an in-line blower system. The GCCS-SRL commenced construction in 2008.
[40 CFR 60, Subpart WWW] [40 CFR 63, Subpart AAAA]

Nonapplicable portions of the NESHAP will not be included in the permit. The facilities listed above are subject to the following portions of 40 CFR 63, Subpart AAAA:

1) 40 CFR 63.1930;
2) 40 CFR 63.1935(a)(3);
3) 40 CFR 63.1940(a) and (c);
4) 40 CFR 63.1945(b) and (f);
5) 40 CFR 63.1950;
6) 40 CFR 63.1955(a)(1), (b), and (c);
7) 40 CFR 63.1965;
8) 40 CFR 63.1975;
9) 40 CFR 63.1980(a) and (b);
10) 40 CFR 63.1985;
11) 40 CFR 63.1990; and
12) Table 1.

The provisions of 40 CFR 63, Subpart A – General Provisions, which are incorporated by reference in 326 IAC 20-1, apply to the facilities described in this section except when otherwise specified in 40 CFR 63, Subpart AAAA.

(d) **40 CFR 63, Subpart EEEE (National Emission Standards for Hazardous Air Pollutants: Organic Liquids Distribution (Non-Gasoline) (326 IAC 20-83):** This subpart establishes national emission limitations, operating limits, and work practice standards for organic hazardous air pollutants (HAP) emitted from organic liquids distribution (OLD) (non-gasoline) operations at major sources of HAP. This source is an area source of HAP. Therefore, the provisions of 40 CFR 63, Subpart EEEE are not included in the permit.

(e) **40 CFR 63, Subpart DDDDD (National Emission Standards for Hazardous Air Pollutants for Major Sources: Industrial, Commercial, and Institutional Boilers and Process Heaters) (326 IAC 20-95):** The provisions of this subpart are applicable to owners and operators of industrial, commercial, or institutional boilers or process heaters located at a major source of HAP. This source is an area source of HAP. Therefore, the provisions of 40 CFR 63, Subpart DDDDD are not included in the permit.

(f) **40 CFR 63, Subpart BBBBBB (National Emission Standards for Hazardous Air Pollutants for Source Category: Gasoline Distribution Bulk Terminals, Bulk Plants, and Pipeline Facilities):** This subpart establishes national emission standards for hazardous air pollutants emitted from area source gasoline distribution bulk terminals, bulk plants, and pipeline facilities. The subpart defines a bulk terminal as any gasoline storage and distribution facility that receives gasoline by pipeline, ship or barge, or cargo tank and has a gasoline throughput of 20,000 gallons per day or greater. The subpart defines a bulk plant as any gasoline storage and distribution facility that receives gasoline by pipeline, ship or barge, or cargo tank, and subsequently loads gasoline into gasoline cargo tanks for transport to gasoline dispensing facilities and has a gasoline throughput of less than 20,000 gallons per day. Pipeline facilities include pipeline breakout stations and pipeline pumping stations. A pipeline breakout station is a facility along a pipeline containing storage vessels used to relieve surges or receive and store gasoline from the pipeline. A pipeline pumping station contains pumps to maintain the desired pressure in the pipeline. This source does not meet the definition of a gasoline distribution bulk terminal, bulk plant, or a pipeline facility. Therefore, the provisions of 40 CFR 63, Subpart BBBBBB are not included in the permit.

(g) **40 CFR 63, Subpart CCCCCC (National Emission Standards for Hazardous Air Pollutants for Source Category: Gasoline Dispensing Facilities):** This subpart establishes national emission limitations and management practices for hazardous air pollutants (HAP) emitted from the loading and unloading of gasoline storage tanks at a gasoline dispensing facility (GDF). The affected source to which this subpart applies is each GDF that is located at an area source. The affected source includes each gasoline cargo tank during the delivery of product to a GDF, and each storage tank. A GDF is defined in the subpart as any stationary facility which dispenses gasoline into the fuel tank of a motor vehicle, motor vehicle engine, nonroad vehicle, or nonroad engine, including a nonroad vehicle or nonroad engine used solely for competition. These facilities include, pumps, generators, gasoline fueled equipment, and lawn equipment. Sycamore Ridge Landfill is an area source of HAP containing a gasoline dispensing facility. Therefore, the provisions of 40 CFR 63, Subpart CCCCCC are included in the permit.

The gasoline dispensing facility is subject to the National Emission Standards for Hazardous Air Pollutants for Source Category: Gasoline Dispensing Facilities (40 CFR 63, Subpart CCCCCC), which is included as Attachment D of this permit. The facility subject to 40 CFR 63, Subpart CCCCCC is identified below:

(1) One (1) 1,000 gallon gasoline AST with vent, identified as Unit ID #23, with a monthly gasoline throughput of less than ten thousand (10,000) gallons, constructed prior to November 9, 2006. [40 CFR 63, Subpart CCCCCC]

Nonapplicable portions of the NESHAP will not be included in the permit. The gasoline dispensing operation is subject to the following portions of 40 CFR 63, Subpart CCCCCC:

1) 40 CFR 63.11110;
2) 40 CFR 63.11111(a), (b), (e), (f), (h), (i), and (j);
3) 40 CFR 63.11112(a) and (d);
4) 40 CFR 63.11113(b);
5) 40 CFR 63.11115;
6) 40 CFR 63.11116;
7) 40 CFR 63.1125(d);
8) 40 CFR 63.1126(b);
9) 40 CFR 63.11130;
10) 40 CFR 63.11131;
11) 40 CFR 63.11132;
12) Table 3.

The provisions of 40 CFR 63, Subpart A – General Provisions, which are incorporated as 326 IAC 20-1, apply to the facility described in this section except when otherwise specified in 40 CFR 63, Subpart CCCCCC.

(h) There are no other National Emission Standards for Hazardous Air Pollutants (NESHAP) (326 IAC 14, 326 IAC 20 and 40 CFR Part 63) included in the permit.

State Rule Applicability - Entire Source

326 IAC 5-1 (Opacity Limitations)
This source is subject to the opacity limitations specified in 326 IAC 5-1-2(1).

326 IAC 1-6-3 (Preventive Maintenance Plan)
The source is subject to 326 IAC 1-6-3.

326 IAC 1-7 (Stack Height Provisions)
This rule applies to all sources having exhaust gas stacks through which a potential of twenty-five (25) tons per year or more of particulate matter (PM) or sulfur dioxide (SO2) are emitted. This source does not contain exhaust gas stacks through which a potential of twenty-five (25) tons per year or more of particulate matter (PM) or sulfur dioxide (SO2) are emitted. Therefore, the provisions of 326 IAC 1-7 are not included in the permit.

326 IAC 2-4.1 (Major Sources of Hazardous Air Pollutants)
The provisions of 326 IAC 2-4.1 apply to owners or operators who construct or reconstruct a major source of hazardous air pollutants, after July 27, 1997, except as specifically exempted by the rule. On and after June 29, 1998, 326 IAC 2-4.1 is intended to implement the requirements of Section 112(g)(2)(B) of the Clean Air Act (CAA). Sycamore Ridge Landfill is an area source of HAP. Therefore, the provisions of 326 IAC 2-4.1 are not included in the permit.

326 IAC 2-6 (Emission Reporting)
This source, not located in Lake, Porter, or LaPorte County, is subject to 326 IAC 2-6 (Emission Reporting) because it is required to have an operating permit pursuant to 326 IAC 2-7 (Part 70). The potential to emit of VOC and PM10 is less than 250 tons per year; and the potential to emit of CO, NOx, and SO2 is less than 2,500 tons per year. Therefore, pursuant to 326 IAC 2-6-3(a)(2), triennial reporting is required. An emission statement shall be submitted in accordance with the compliance schedule in 326 IAC 2-6-3 by July 1, 2018, and every three (3) years thereafter. The emission statement shall contain, at a minimum, the information specified in 326 IAC 2-6-4.

326 IAC 2-7-6(5) (Annual Compliance Certification)
The U.S. EPA Federal Register 79 FR 54978 notice does not exempt Title V Permittees from the requirements of 40 CFR 70.6(c)(5)(iv) or 326 IAC 2-7-6(5)(D), but the submittal of the Title V annual compliance certification to IDEM satisfies the requirement to submit the Title V annual compliance certifications to EPA. IDEM does not intend to revise any permits since the requirements of 40 CFR 70.6(c)(5)(iv) or 326 IAC 2-7-6(5)(D) still apply, but Permittees can note on their Title V annual compliance certification that submission to IDEM has satisfied reporting to EPA per Federal Register 79 FR 54978. This only applies to Title V Permittees and Title V compliance certifications.

326 IAC 6.5 PM Limitations Except Lake County
This rule applies to sources located in one of the following counties: Clark, Dearborn, Dubois, Howard, Marion, St. Joseph, Vanderburgh, Vigo or Wayne. Sources specifically listed in 326 IAC 6.5-2 through 326 IAC 6.5-10 are subject to the provisions of 326 IAC 6.5. Sources not specifically listed in 326 IAC 6.5-2 through 6.5-10, with the potential to emit one hundred (100) tons per year or more, or with actual emissions of ten (10) tons per year or more of particulate matter are subject to the provisions of 326 IAC 6.5-1-2. If the source has a PTE of particulate matter (PM) equal to or greater than ten tons per year and is not limited below ten tons per year, 326 IAC 6.5 applies. Fugitive PM emissions are counted toward source wide applicability.

The rule does not apply to combustion sources that burn only natural gas at sources or facilities identified in 326 IAC 6.5-2 through 326 IAC 6.5-10, as long as the units continue to burn natural gas. The rule also exempts surface coating, reinforced plastic composites fabricating manufacturing processes, and graphic arts manufacturing processes that use the following:

1) Dip coating
2) Roll coating
3) Flow coating
4) Brush coating
5) less than 5 gallons of coating a day

If any of the provisions or 326 IAC 6.5 conflict with or are inconsistent with limitations established in 326 IAC 12, then the most stringent limitation shall apply.

Sycamore Ridge Landfill has a PTE of PM of greater than 10 tons per year (TPY) and emissions are not limited below 10 TPY. Therefore, the provisions of 326 IAC 6.5 are included in the permit. Pursuant to 326 IAC 6.5-1-2(a), particulate matter (PM) emissions from the following operations shall not exceed 0.03 grain per dry standard cubic foot (dscf):

1) The active gas collection and control system identified as GCCS-VES.
2) The active gas collection and control system identified as GCCS-SRL.
3) Six (6) portable welders, identified as Unit #3.
4) Four (4) propane-fired space heaters, identified as Unit #13.
5) Two (2) portable kerosene heater, identified as Unit #20.
6) Two (2) 500 gallon used oil tanks and the waste oil-fired furnace, identified as Unit #21.
7) Paved and unpaved roads.

326 IAC 6.8 PM Limitations for Lake County
This source is not subject to 326 IAC 6.8, because it is not located in Lake County.

326 IAC 7-1.1 (Sulfur Dioxide Emission Limitations)
The provisions of 326 IAC 7-1.1 apply to all emission units with a potential to emit twenty-five (25) tons per year or ten (10) pounds per hour of sulfur dioxide. No emission unit located at this source has a potential to emit 25 TPY or 10 pounds per hour or more of SO2. Therefore, the provisions of 326 IAC 7-1.1 are not included in the permit.

326 IAC 8-5 (Miscellaneous Operations)
The provisions of 326 IAC 8-5 are applicable to facilities or sources engaged in asphalt paving, synthesized pharmaceutical manufacturing, pneumatic rubber tire manufacturing, graphic arts operations, and fuel grade ethanol production at dry mills. This source is not engaged in any of the activities regulated under the rule. Therefore, the provisions of 326 IAC 8-5 are not included in the permit.

326 IAC 9 (Carbon Monoxide Emission Rules)
This rule is applicable to all stationary sources of carbon monoxide (CO) emissions commencing operation after March 21, 1972, where the CO emissions are from petroleum refining, ferrous metal smelting, refuse incineration and refuse burning equipment. This source is not engaged in any of the activities regulated under the rule. Therefore, the provisions of 326 IAC 9 are not included in the permit.

326 IAC 12 (New Source Performance Standards)
This rule incorporates by reference the requirements of 40 CFR 60. See the Federal Rule Applicability section for the New Source Performance Standards applicable to this facility.

326 IAC 14 (Emission Standards for Hazardous Air Pollutants)
This rule incorporates by reference the requirements of 40 CFR 61. See the Federal Rule Applicability section for the National Emission Standards for Hazardous Air Pollutants (NESHAP) applicable to this facility.

326 IAC 20 (Hazardous Air Pollutants)
This rule incorporates by reference the requirements of 40 CFR 63. See the Federal Rule Applicability section for the National Emission Standards for Hazardous Air Pollutants (NESHAP) applicable to this facility.

State Rule Applicability – Individual Facilities

Municipal Solid Waste Landfill

326 IAC 8-8.1 (Municipal Solid Waste Landfills Not Located in Clark, Floyd, Lake and Porter Counties): This rule applies to any existing municipal solid waste (MSW) landfill located in any county except Clark, Floyd, Lake and Porter. 326 IAC 8-8.1 is intended to require existing landfills to implement the requirements of 40 CFR 60, Subpart WWW (Standards of Performance for Municipal Solid Waste Landfills). An existing landfill is defined in the rule as a MSW landfill that has accepted waste since November 8, 1987, or that has capacity available for future use and for which construction commenced prior to May 30, 1991. To be an existing landfill, a MSW can be open or closed, but must have received waste on or before November 8, 1987. Existing landfills can be open landfills constructed prior to May 30, 1991. 326 IAC 8-8.1 does not address landfills constructed prior to May 30, 1991 that are reconstructed or modified on or after May 30, 1991. Therefore, reconstruction or modification on or after May 30, 1991 does not affect the applicability of 326 IAC 8-8.1. This source was constructed in 1972 (Victory Landfill) and was modified in 2003 (Sycamore Ridge Landfill) and is considered an existing MSW landfill. Therefore, the provisions of 326 IAC 8-8.1 are included in the permit.

326 IAC 8-1-6 (New Facilities, General Reduction Requirements)
The provisions of 326 IAC 8-1-6 are applicable to new facilities as of January 1, 1980, that have potential emissions of twenty-five (25) tons per year or more of VOC, are located anywhere in the state, and are not otherwise regulated by another Article 8 rule, 326 IAC 20-48 (Emission Standards for Hazardous Air Pollutants for Boat Manufacturing), or 326 IAC 20-56 (Reinforced Plastic Composites Production). The municipal solid waste landfill consisting of Victory Landfill and Sycamore Ridge Landfill has potential VOC emissions of 25 tons per year or more. However, the landfill is subject to another Article 8 rule, 326 IAC 8-8.1 and the provisions of 326 IAC 8-1-6 are not included in the permit.

Landfill Gas Flares

326 IAC 8-1-6 (New Facilities, General Reduction Requirements)
The provisions of 326 IAC 8-1-6 are applicable to new facilities as of January 1, 1980, that have potential emissions of twenty-five (25) tons per year or more of VOC, are located anywhere in the state, and are not otherwise regulated by another Article 8 rule, 326 IAC 20-48 (Emission Standards for Hazardous Air Pollutants for Boat Manufacturing), or 326 IAC 20-56 (Reinforced Plastic Composites Production). Each of the landfill gas flares has potential VOC emissions of less than 25 tons per year. Therefore, the provisions of 326 IAC 8-1-6 are not included in the permit.

Welding

326 IAC 6-3 (Particulate Emission Limitations for Manufacturing Processes)
This rule establishes emission limitations for particulate (PM) emissions from manufacturing processes located anywhere in the state. A manufacturing process is defined in 326 IAC 6-3-1.5 as a single or series of actions, operations, or treatments in which a mechanical, physical, or chemical transformation of material occurs that emits, or has the potential to emit, particulate in the production of a product. Manufacturing processes include transference, conveyance, or repair of a product. The welding operations do not emit particulate matter (PM) in the production of a product. In addition, the welding operations are subject to a PM emission limitation under 326 IAC 6.5. Therefore, the PM emission limitation under 326 IAC 6-3 is inconsistent with the emission limitation under 326 IAC 6.5 and is not included in the permit.

Indirect Heating Units - Waste Oil-fired Furnace identified as Unit #21

326 IAC 6-2 (Particulate Emission Limitations for Sources of Indirect Heating)
The provisions of 326 IAC 6-2 apply to combustion units that are indirect heating units. An indirect heating unit is defined in 326 IAC 1-2-19 as "The combustion of fuel to produce usable heat that is transferred through a heat-conducting materials barrier or by a heat storage medium to a material to be heated so that the material being treated is not contacted by, and adds no substance to the products of combustion." The waste oil-fired furnace is a source of indirect heating using a shell and tube heat exchanger with combustion gases from waste oil combustion on one side and ambient air on the other side. However, the waste oil-fired furnace is subject to a PM emission limitation under 326 IAC 6.5. Therefore, the emission limitation under 326 IAC 6-2 are inconsistent with a limit under 326 IAC 6.5 and the provisions of 326 IAC 6-2 are not included in the permit.

Direct Heating Units - Propane and Kerosene Heaters

326 IAC 6-2 (Particulate Emission Limitations for Sources of Indirect Heating)
The propane and kerosene heaters are direct fired units. In direct combustion, the products of combustion mix with the material being heated. Therefore, the provisions of 326 IAC 6-2 are not included in the permit.

Paved and Unpaved Roads

326 IAC 6-4 (Fugitive Dust Emissions)
This rule applies to all sources of fugitive dust. Therefore, the requirements of 326 IAC 6-4 are included in the permit. 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.

326 IAC 6-5 (Fugitive Particulate Matter Emission Limitations)
The provisions of 326 IAC 6-5 apply to any source of fugitive particulate matter (PM) emissions located in nonattainment areas for particulate matter, which has potential fugitive PM emissions of twenty-five (25) tons per year or more, including the areas listed under 326 IAC 6-5(a)(1) and (a)(2). This rule also applies to new sources of fugitive PM emissions, located anywhere in the state, and requiring a permit per 326 IAC 2, which has not received all the necessary preconstruction approvals before December 13, 1985. This source was initially constructed in 1972 and was expanded in 2003. However, the source's first Part 70 Operating Permit was not issued until July 12, 1999. Therefore, the source is subject to the provisions of 326 IAC 6-5 and the fugitive dust control plan is included in the permit.

Gasoline Dispensing Facility - Diesel Storage Tanks

326 IAC 8-1-6 (New Facilities, General Reduction Requirements)
The provisions of 326 IAC 8-1-6 are applicable to new facilities as of January 1, 1980, that have potential emissions of twenty-five (25) tons per year or more of VOC, are located anywhere in the state, and are not otherwise regulated by another Article 8 rule, 326 IAC 20-48 (Emission Standards for Hazardous Air Pollutants for Boat Manufacturing), or 326 IAC 20-56 (Reinforced Plastic Composites Production). The gasoline dispensing facility has potential VOC emissions of less than 25 TPY. Therefore, the provisions of 326 IAC 8-1-6 are not included in the permit.

326 IAC 8-4-3 (Petroleum Liquid Storage Facilities)
The provisions of 326 IAC 8-4-3 apply to all petroleum liquid storage vessels with capacities greater than 39,000 gallons containing a volatile organic compound (VOC) whose true vapor pressure is greater than 1.52 psi. The gasoline, kerosene and diesel storage tanks all have capacities below 39,000 gallons. Therefore, the provisions of 326 IAC 8-4-3 are not included in the permit.

326 IAC 8-4-6 (Gasoline Dispensing Facilities)
The provisions of 326 IAC 8-4-6 apply to any gasoline dispensing facility located anywhere in the state with a monthly gasoline throughput of ten thousand (10,000) gallons per month or greater. The gasoline dispensing facility located at this source has a throughput of less than 10,000 gallons per month. Therefore, the provisions of 326 IAC 8-4-6 are not included in the permit.

326 IAC 8-9 (Volatile Organic Liquid Storage Vessels)
The provisions of 326 IAC 8-9 apply to stationary storage vessels used to store volatile organic liquids (VOL) constructed on and after October 1, 1995, and located in Clark, Floyd, Lake or Porter Counties. This source is located in Vigo County. Therefore, the provisions of 326 IAC 8-9 are not included in the permit.

Leachate Storage Tank

326 IAC 8-1-6 (New Facilities, General Reduction Requirements)
The provisions of 326 IAC 8-1-6 are applicable to new facilities as of January 1, 1980, that have potential emissions of twenty-five (25) tons per year or more of VOC, are located anywhere in the state, and are not otherwise regulated by another Article 8 rule, 326 IAC 20-48 (Emission Standards for Hazardous Air Pollutants for Boat Manufacturing), or 326 IAC 20-56 (Reinforced Plastic Composites Production). The leachate storage tank has potential VOC emissions of less than 25 TPY. Therefore, the provisions of 326 IAC 8-1-6 are not included in the permit.

326 IAC 8-4-3 (Petroleum Liquid Storage Facilities)
The provisions of 326 IAC 8-4-3 apply to all petroleum liquid storage vessels with capacities greater than 39,000 gallons containing a volatile organic compound (VOC) whose true vapor pressure is greater than 1.52 psi. The leachate storage tank does not store petroleum liquid and has a capacity of less than 39,000 gallons. Therefore, the provisions of 326 IAC 8-4-3 are not included in the permit.

326 IAC 8-9 (Volatile Organic Liquid Storage Vessels)
The provisions of 326 IAC 8-9 apply to stationary storage vessels used to store volatile organic liquids (VOL) constructed on and after October 1, 1995, and located in Clark, Floyd, Lake or Porter Counties. This source is located in Vigo County. Therefore, the provisions of 326 IAC 8-9 are not included in the permit.

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.

Compliance Determination

The municipal solid waste landfill and landfill gas flares are subject to compliance determination requirements under 40 CFR 60, Subpart WWW. In addition, IDEM, OAQ is adding the following compliance determination requirements:

Compliance Determination Requirements		
Emission Unit	**Parameter**	**Frequency**
Active Gas Collection and Control System GCCS-VES	Landfill Gas Combusted in Flare Record Keeping	Monthly
	Landfill Gas Heat Content Record Keeping	Annual
Active Gas Collection and Control System GCCS-SRL	Landfill Gas Combusted in Flare Record Keeping	Monthly
	Landfill Gas Heat Content Record Keeping	Annual

The landfill gas flares are subject to PSD minor limits for the amount landfill gas combusted in the flare, a CO emission limit for landfill gas combustion in the flare, and a landfill gas heat content limit of 580 Btu/Ft^3 or less. To document the compliance status with the CO emission limit, the Permittee shall maintain a record of the manufacturer performance guarantee for the CO emission rate of each of the landfill gas flares, identified as GCCS-VES and GCCS-SRL. The Permittee provided information as part of the renewal application indicating that the landfill gas methane content at Sycamore Ridge Landfill is fairly constant with an average methane content of 50% by volume. Based on a net heating value of 896 Btu/Ft^3 for pure methane, pursuant to 40 CFR 63, Subpart CC, Appendix, Table 12, the net heating value of landfill gas with 50% methane by volume would be 448 Btu/Ft^3. IDEM, OAQ reviewed the information and has determined that annual testing of the landfill gas methane content (with calculation of the landfill gas heat content) is sufficient to determine compliance with the PSD landfill gas heat content limit.

Compliance Monitoring

The municipal solid waste landfill and landfill gas flares are subject to compliance monitoring requirements under 40 CFR 60, Subpart WWW. There are no additional compliance monitoring requirements proposed in the permit.

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 March 21, 2016.

Conclusion

The operation of this municipal solid waste landfill shall be subject to the conditions of the attached Part 70 Operating Permit Renewal No. T167-36980-00116.

IDEM Contact

(a) Questions regarding this proposed permit can be directed to David Matousek at the Indiana Department of Environmental Management, Office of Air Quality, Permits Branch, 100 North Senate Avenue, MC 61-53 IGCN 1003, Indianapolis, Indiana 46204-2251 or by telephone at (317) 232-8253 or toll free at 1-800-451-6027 extension (2-8253).

(b) A copy of the findings is available on the Internet at: http://www.in.gov/ai/appfiles/idem-caats/

(c) For additional information about air permits and how the public and interested parties can participate, refer to the IDEM Permit Guide on the Internet at: http://www.in.gov/idem/5881.htm; and the Citizens' Guide to IDEM on the Internet at: http://www.in.gov/idem/6900.htm.

Appendix A to the Technical Support Document (TSD)
Potential to Emit after Issuance

Company Name: Sycamore Ridge Landfill
Address: 5621 East Cottom Drive, Pimento, Indiana 47866
Part 70 Operating Permit Renewal No.: T167-36980-00116
Reviewer: David Matousek
Date: September 28, 2016

Potential to Emit (TPY)									
Emission Unit	**PM**	**PM_{10}**	**Direct $PM_{2.5}$**	**SO_2**	**VOC**	**CO**	**NOx**	**Total HAP**	**Toluene**
Victory Environmental Services Landfill	0.00	0.00	0.00	0.00	4.88	0.95	0.00	2.42	0.87
Victory Environmental Services Fugitive	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.81	0.29
Sycamore Ridge Landfill	0.00	0.00	0.00	0.00	53.59	10.42	0.00	26.59	9.56
Sycamore Ridge Fugitive	0.00	0.00	0.00	0.00	0.00	0.00	0.00	8.86	3.19
GCCS-VES (1,200 SCFM Flare)	2.59	2.59	2.59	2.42	0.32	67.68	12.44	1.23	0.00
GCCS-SRL (4,000 SCFM Flare)	8.64	8.64	8.64	8.06	1.07	225.59	41.46	4.11	0.00
Insignificant Activities									
Welding	0.02	0.02	0.02	0.00	0.00	0.00	0.00	0.00	0.00
Propane Heaters	0.06	0.20	0.20	0.03	0.29	2.15	3.73	0.00	0.00
Kerosene Heaters	0.13	0.21	0.21	4.44	0.02	0.31	1.25	3.00E-03	3.88E-04
Used Oil Combustion	2.68	2.32	2.32	4.60	0.06	0.31	1.19	0.87	0.00
Gasoline Dispensing Facility	0.00	0.00	0.00	0.00	1.45	0.00	0.00	0.10	0.00
Total PTE	**14.12**	**13.98**	**13.98**	**19.55**	**61.69**	**307.41**	**60.07**	**45.01**	**13.92**
Title V Major Source Thresholds	**NA**	**100**	**100**	**100**	**100**	**100**	**100**	**25**	**10**

Limited / Controlled Potential to Emit									
Emission Unit	**PM**	**PM_{10}**	**Direct $PM_{2.5}$**	**SO_2**	**VOC**	**CO**	**NOx**	**Total HAP**	**HCL**
Victory Environmental Services Landfill	0.00	0.00	0.00	0.00	0.10	0.02	0.00	0.05	0.00
Victory Environmental Services Fugitive	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.81	0.00
Sycamore Ridge Landfill	0.00	0.00	0.00	0.00	1.07	0.21	0.00	0.53	0.00
Sycamore Ridge Fugitive	0.00	0.00	0.00	0.00	0.00	0.00	0.00	8.86	0.00
GCCS-VES (1,200 SCFM Flare)	9.45	9.45	9.45	8.82	1.17	246.79	45.36	4.49	4.49
GCCS-SRL (4,000 SCFM Flare)									
Insignificant Activities									
Welding	0.02	0.02	0.02	0.00	0.00	0.00	0.00	0.00	0.00
Propane Heaters	0.06	0.20	0.20	0.03	0.29	2.15	3.73	0.00	0.00
Kerosene Heaters	0.13	0.21	0.21	4.44	0.02	0.31	1.25	3.00E-03	0.00
Used Oil Combustion	2.68	2.32	2.32	4.60	0.06	0.31	1.19	0.87	0.45
Gasoline Dispensing Facility	0.00	0.00	0.00	0.00	1.45	0.00	0.00	0.10	0.00
Potential to Emit After Issuance	**12.34**	**12.20**	**12.20**	**17.89**	**4.17**	**249.80**	**51.53**	**15.72**	**4.95**
PSD Major Source Thresholds	**250**	**250**	**250**	**250**	**250**	**250**	**250**	**---**	**---**

Appendix A to the Technical Support Document (TSD)
Summary of Hazardous Air Pollutants - Uncontrolled Emissions

Company Name: Sycamore Ridge Landfill
Address: 5621 East Cottom Drive, Pimento, Indiana 47866
Part 70 Operating Permit Renewal No.: T167-36980-00116
Reviewer: David Matousek
Date: September 28, 2016

Uncontrolled PTE (TPY)													
CAS #	Hazardous Air Pollutant	Victory Landfill	Victory Landfill Fugitive	Sycamore Ridge Landfill	Sycamore Ridge Landfill Fugitive	GCCS VES Flare	GCCS SRL Flare	Welding	Propane	Kerosene	Used Oil	Gasoline Dispensing Facility	Total HAP
71556	1,1,1-Trichloroethane	0.02	5.14E-03	0.17	0.06					1.48E-05			0.25
79345	1,1,2,2-Tetrachloroethane	0.04	1.49E-02	0.49	0.16								0.72
75343	1,1-Dichloroethane	0.06	0.02	0.61	0.20								0.89
75354	1,1-Dichloroethene	4.67E-03	1.56E-03	0.05	0.02								0.07
107062	1,2-Dichloroethane	9.76E-03	3.25E-03	0.11	0.04								0.16
78875	1,2-Dichloropropane	4.89E-03	1.63E-03	0.05	0.02								0.08
83329	Acenaphthene									1.32E-06			1.32E-06
208968	Acenaphthylene									1.58E-08			1.58E-08
107131	Acrylonitrile	0.08	0.03	0.89	0.30								1.29
7440360	Antimony										2.82E-04		2.82E-04
7440382	Arsenic									3.50E-05	6.88E-03		6.92E-03
71432	Benzene	3.59E-02	1.20E-02	0.39	0.13					1.34E-05		2.05E-02	0.59
56553/218019	Benzo(a)anthracene / Chrysene									4.00E-07	2.50E-04		2.51E-04
205992/207089	Benzo(b&k)fluoranthene									9.26E-08			9.26E-08
191242	Benzo(g,h,i)perylene									1.41E-07			1.41E-07
7440417	Beryllium									2.63E-05	1.13E-04		1.39E-04
117817	Bis(2-ethylhexyl)phthalate										1.38E-04		1.38E-04
7440439	Cadmium									2.63E-05	7.51E-04		7.77E-04
75150	Carbon Disulfide	1.06E-02	3.54E-03	0.12	0.04								0.17
56235	Carbon Tetrachloride	1.48E-04	4.94E-05	1.62E-03	5.41E-04								2.36E-03
463581	Carbonyl Sulfide	7.08E-03	2.36E-03	0.08	0.03								0.11
108907	Chlorobenzene	6.77E-03	2.26E-03	0.07	0.02								0.11
75003	Chloroethane	0.02	6.47E-03	0.21	0.07								0.31
67663	Chloroform	8.62E-04	2.87E-04	0.01	3.15E-03								0.01
7440473	Chromium									2.63E-05	1.19E-02		0.01
7440484	Cobalt										3.57E-04		3.57E-04

(continued on next page)

Appendix A to the Technical Support Document (TSD)
Summary of Hazardous Air Pollutants - Uncontrolled Emissions
(continued from previous page)

Uncontrolled PTE (TPY)													
CAS #	**Hazardous Air Pollutant**	**Victory Landfill**	**Victory Landfill Fugitive**	**Sycamore Ridge Landfill**	**Sycamore Ridge Landfill Fugitive**	**GCCS VES Flare**	**GCCS SRL Flare**	**Welding**	**Propane**	**Kerosene**	**Used Oil**	**Gasoline Dispensing Facility**	**Total HAP**
98828	Cumene (Isopropyl Benzene)											1.45E-04	1.45E-04
53703	Dibenzo(a,h)anthracene									1.04E-07			1.04E-07
84742	Dibutylphthalate										2.13E-06		2.13E-06
106467	Dichlorobenzene	7.43E-03	2.48E-03	0.08	0.03						5.01E-08		0.12
75092	Dichloromethane	0.29	0.10	3.21	1.07								4.66
100414	Ethylbenzene	0.12	0.04	1.29	0.43					3.98E-06		8.71E-04	1.88
106934	Ethylene Dibromide	4.52E-05	1.51E-05	4.96E-04	1.65E-04								7.21E-04
206440	Fluoranthene									3.03E-07			3.03E-07
86737	Fluorene									2.80E-07			2.80E-07
50000	Formaldehyde									**2.06E-03**			2.06E-03
110543	Hexane	0.14	0.05	1.49	0.50							5.45E-02	2.23
7647010	Hydrochloric Acid					**1.23**	**4.11**				**0.45**		5.80
193395	Indeno(1,2,3-cd)pyrene									1.34E-07			1.34E-07
7439921	Lead									7.88E-05	0.38		3.79E-01
7439965	Manganese									5.26E-05	4.25E-03		0.00
7439976	Mercury	1.41E-05	4.70E-06	1.55E-04	5.15E-05					2.63E-05			2.51E-04
108101	Methyl Isobutyl Ketone	0.05	0.02	0.49	0.16								0.72
91203	Naphthalene									7.07E-05	8.13E-04		8.84E-04
7440020	Nickel									2.63E-05	0.01		0.01
3268879	OCDD									1.94E-10			1.94E-10
127184	Perchloroethylene	0.15	0.05	1.63	0.54								2.38
85018/120127	Phenanthrene / Anthracene									7.33E-07	6.88E-04		6.89E-04
108952	Phenol										1.50E-04		1.50E-04
129000	Pyrene									2.66E-07	4.44E-04		4.45E-04
7782492	Selenium									1.31E-04			1.31E-04
108883	Toluene	**0.87**	**0.29**	**9.56**	**3.19**					3.88E-04		1.82E-02	13.92
79016	Trichloroethylene	0.09	0.03	0.98	0.33								1.42
540841	Trimethylpentane, 2,2,4-											6.10E-03	6.10E-03
75014	Vinyl Chloride	0.11	0.04	1.21	0.40								1.76
1330207	Xylene (Mixed)	0.31	0.10	3.39	1.13					6.82E-06		5.81E-04	4.93
	Subtotals	2.42	0.81	26.59	8.86	1.23	4.11	0.00	0.00	3.00E-03	0.87	0.10	45.01

Appendix A to the Technical Support Document (TSD)
Summary of Hazardous Air Pollutants - Uncontrolled Emissions

Company Name: Sycamore Ridge Landfill
Address: 5621 East Cottom Drive, Pimento, Indiana 47866
Part 70 Operating Permit Renewal No.: T167-36980-00116
Reviewer: David Matousek
Date: September 28, 2016

Controlled/Limited PTE (TPY)													
CAS #	Hazardous Air Pollutant	Victory Landfill	Victory Landfill Fugitive	Sycamore Ridge Landfill	Sycamore Ridge Landfill Fugitive	GCCS VES Flare	GCCS SRL Flare	Welding	Propane	Kerosene	Used Oil	Gasoline Dispensing Facility	Total HAP
71556	1,1,1-Trichloroethane	3.08E-04	5.14E-03	3.38E-03	0.06					1.48E-05			0.07
79345	1,1,2,2-Tetrachloroethane	8.97E-04	1.49E-02	0.01	0.16								0.19
75343	1,1-Dichloroethane	1.12E-03	0.02	0.01	0.20								0.24
75354	1,1-Dichloroethene	9.33E-05	1.56E-03	1.02E-03	0.02								0.02
107062	1,2-Dichloroethane	1.95E-04	3.25E-03	2.14E-03	0.04								0.04
78875	1,2-Dichloropropane	9.79E-05	1.63E-03	1.07E-03	0.02								0.02
83329	Acenaphthene									1.32E-06			1.32E-06
208968	Acenaphthylene									1.58E-08			1.58E-08
107131	Acrylonitrile	1.62E-03	0.03	0.02	0.30								0.34
7440360	Antimony										2.82E-04		2.82E-04
7440382	Arsenic									3.50E-05	6.88E-03		6.92E-03
71432	Benzene	7.18E-04	1.20E-02	7.88E-03	0.13					1.34E-05		2.05E-02	0.17
56553/218019	Benzo(a)anthracene / Chrysene									4.00E-07	2.50E-04		2.51E-04
205992/207089	Benzo(b&k)fluoranthene									9.26E-08			9.26E-08
191242	Benzo(g,h,i)perylene									1.41E-07			1.41E-07
7440417	Beryllium									2.63E-05	1.13E-04		1.39E-04
117817	Bis(2-ethylhexyl)phthalate										1.38E-04		1.38E-04
7440439	Cadmium									2.63E-05	7.51E-04		7.77E-04
75150	Carbon Disulfide	2.13E-04	3.54E-03	2.33E-03	0.04								0.04
56235	Carbon Tetrachloride	2.96E-06	4.94E-05	3.25E-05	5.41E-04								6.26E-04
463581	Carbonyl Sulfide	1.42E-04	2.36E-03	1.55E-03	0.03								0.03
108907	Chlorobenzene	1.35E-04	2.26E-03	1.49E-03	0.02								0.03
75003	Chloroethane	3.88E-04	6.47E-03	4.26E-03	0.07								0.08
67663	Chloroform	1.72E-05	2.87E-04	1.89E-04	3.15E-03								0.00
7440473	Chromium									2.63E-05	1.19E-02		0.01
7440484	Cobalt										3.57E-04		3.57E-04

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Appendix A to the Technical Support Document (TSD)
Summary of Hazardous Air Pollutants - Uncontrolled Emissions
(continued from previous page)

Controlled/Limited PTE (TPY)													
CAS #	**Hazardous Air Pollutant**	**Victory Landfill**	**Victory Landfill Fugitive**	**Sycamore Ridge Landfill**	**Sycamore Ridge Landfill Fugitive**	**GCCS VES Flare**	**GCCS SRL Flare**	**Welding**	**Propane**	**Kerosene**	**Used Oil**	**Gasoline Dispensing Facility**	**Total HAP**
98828	Cumene (Isopropyl Benzene)											1.45E-04	1.45E-04
53703	Dibenzo(a,h)anthracene									1.04E-07			1.04E-07
84742	Dibutylphthalate										2.13E-06		2.13E-06
106467	Dichlorobenzene	1.49E-04	2.48E-03	1.63E-03	0.03						5.01E-08		0.03
75092	Dichloromethane	5.85E-03	0.10	0.06	1.07								1.24
100414	Ethylbenzene	2.36E-03	0.04	0.03	0.43					3.98E-06		8.71E-04	0.50
106934	Ethylene Dibromide	9.04E-07	1.51E-05	9.92E-06	1.65E-04								1.91E-04
206440	Fluoranthene									3.03E-07			3.03E-07
86737	Fluorene									2.80E-07			2.80E-07
50000	Formaldehyde									**2.06E-03**			2.06E-03
110543	Hexane	2.72E-03	0.05	0.03	0.50							5.45E-02	0.63
7647010	Hydrochloric Acid					4.49					**0.45**		4.95
193395	Indeno(1,2,3-cd)pyrene									1.34E-07			1.34E-07
7439921	Lead									7.88E-05	0.38		3.79E-01
7439965	Manganese									5.26E-05	4.25E-03		0.00
7439976	Mercury	1.41E-05	4.70E-06	1.55E-04	5.15E-05					2.63E-05			2.51E-04
108101	Methyl Isobutyl Ketone	9.01E-04	0.02	9.89E-03	0.16								0.19
91203	Naphthalene									7.07E-05	8.13E-04		8.84E-04
7440020	Nickel									2.63E-05	0.01		0.01
3268879	OCDD									1.94E-10			1.94E-10
127184	Perchloroethylene	2.98E-03	0.05	0.03	0.54								0.63
85018/120127	Phenanthrene / Anthracene									7.33E-07	6.88E-04		6.89E-04
108952	Phenol										1.50E-04		1.50E-04
129000	Pyrene									2.66E-07	4.44E-04		4.45E-04
7782492	Selenium									1.31E-04			1.31E-04
108883	Toluene	**1.74E-02**	**0.29**	**0.19**	**3.19**					3.88E-04		1.82E-02	3.70
79016	Trichloroethylene	1.78E-03	0.03	0.02	0.33								0.38
540841	Trimethylpentane, 2,2,4-											6.10E-03	6.10E-03
75014	Vinyl Chloride	2.21E-03	0.04	0.02	0.40								0.47
1330207	Xylene (Mixed)	6.18E-03	0.10	0.07	1.13					6.82E-06		5.81E-04	1.31
	Subtotals	0.05	0.81	0.53	8.86	4.49		0.00	0.00	3.00E-03	0.87	0.10	15.72

Appendix A to the Technical Support Document (TSD)
Total Source LandGEM Summary

Company Name: Sycamore Ridge Landfill
Address: 5621 East Cottom Drive, Pimento, Indiana 47866
Part 70 Operating Permit Renewal No.: T167-36980-00116
Reviewer: David Matousek
Date: September 28, 2016

Year	Victory Environmental Services		Sycamore Ridge		Landfill Total	
	LFG (Avg. SCFM)	NMOC (TPY)	LFG (Avg. SCFM)	NMOC (TPY)	LFG (Avg. SCFM)	NMOC (TPY)
1972	0.00	0.00			0.00	0.00
1973	35.18	1.23			35.18	1.23
1974	68.98	2.41			68.98	2.41
1975	101.70	3.55			101.70	3.55
1976	132.70	4.63			132.70	4.63
1977	162.50	5.68			162.50	5.68
1978	191.20	6.68			191.20	6.68
1979	219.20	7.66			219.20	7.66
1980	245.70	8.58			245.70	8.58
1981	271.10	9.47			271.10	9.47
1982	295.50	10.32			295.50	10.32
1983	319.40	11.15			319.40	11.15
1984	341.90	11.94			341.90	11.94
1985	363.60	12.69			363.60	12.69
1986	384.30	13.42			384.30	13.42
1987	406.70	14.20			406.70	14.20
1988	424.40	14.82			424.40	14.82
1989	441.30	15.41			441.30	15.41
1990	462.40	16.15			462.40	16.15
1991	477.90	16.69			477.90	16.69
1992	492.70	17.20			492.70	17.20
1993	502.20	17.54			502.20	17.54
1994	535.30	18.69			535.30	18.69
1995	576.70	20.14			576.70	20.14
1996	616.50	21.53			616.50	21.53
1997	649.90	22.69			649.90	22.69
1998	677.20	23.65			677.20	23.65
1999	703.50	24.56			703.50	24.56
2000	791.10	27.62			791.10	27.62
2001	899.30	31.40			899.30	31.40
2002	1,018.00	35.53			1,018.00	35.53
2003	1,165.00	40.67	0.00	0.00	1,165.00	40.67
2004	1,353.00	47.25	401.90	14.03	1,754.90	61.28
2005	1,300.00	45.40	880.50	30.74	2,180.50	76.14
2006	1,249.00	43.62	1,393.00	48.64	2,642.00	92.26
2007	1,200.00	41.91	1,864.00	65.08	3,064.00	106.99
2008	1,153.00	40.27	2,310.00	80.65	3,463.00	120.92
2009	1,108.00	38.69	2,716.00	94.85	3,824.00	133.54
2010	1,065.00	37.17	3,021.00	105.50	4,086.00	142.67
2011	1,023.00	35.71	3,196.00	111.60	4,219.00	147.31
2012	982.70	34.31	3,346.00	116.80	4,328.70	151.11
2013	944.20	32.97	3,479.00	121.50	4,423.20	154.47
2014	907.20	31.67	3,647.00	127.30	4,554.20	158.97

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Appendix A to the Technical Support Document (TSD)
Total Source LandGEM Summary

(continued from previous page)

Year	Victory Environmental Services		Sycamore Ridge		Landfill Total	
	LFG (Avg. SCFM)	NMOC (TPY)	LFG (Avg. SCFM)	NMOC (TPY)	LFG (Avg. SCFM)	NMOC (TPY)
2015	871.60	30.43	3,742.00	130.60	4,613.60	161.03
2016	837.40	29.24	3,827.00	133.60	4,664.40	162.84
2017	804.60	28.09	3,957.00	138.20	4,761.60	166.29
2018	773.00	26.99	4,082.00	142.50	4,855.00	169.49
2019	742.70	25.93	4,202.00	146.70	4,944.70	172.63
2020	713.60	24.92	4,317.00	150.70	5,030.60	175.62
2021	685.60	23.94	4,427.00	154.60	5,112.60	178.54
2022	658.70	23.00	4,533.00	158.30	5,191.70	181.30
2023	632.90	22.10	4,635.00	161.90	5,267.90	184.00
2024	608.10	21.23	4,734.00	165.30	5,342.10	186.53
2025	584.20	20.40	4,828.00	168.60	5,412.20	189.00
2026	561.30	19.60	4,918.00	171.70	5,479.30	191.30
2027	539.30	18.83	5,005.00	174.80	5,544.30	193.63
2028	518.20	18.09	5,089.00	177.70	5,607.20	195.79
2029	497.90	17.38	5,169.00	180.50	5,666.90	197.88
2030	**478.30**	**16.70**	**5,246.00**	**183.20**	**5,724.30**	**199.90**
2031	459.60	16.05	5,097.00	178.00	5,556.60	194.05
2032	441.60	15.42	4,897.00	171.00	5,338.60	186.42
2033	424.30	14.81	4,705.00	164.30	5,129.30	179.11
2034	407.60	14.23	4,521.00	157.80	4,928.60	172.03
2035	391.60	13.67	4,343.00	151.70	4,734.60	165.37
2036	376.30	13.14	4,173.00	145.70	4,549.30	158.84
2037	361.50	12.62	4,009.00	140.00	4,370.50	152.62
2038	347.30	12.13	3,852.00	134.50	4,199.30	146.63
2039	333.70	11.65	3,701.00	129.20	4,034.70	140.85
2040	320.60	11.20	3,556.00	124.20	3,876.60	135.40
2041	308.10	10.76	3,417.00	119.30	3,725.10	130.06
2042	296.00	10.33	3,283.00	114.60	3,579.00	124.93
2043	284.40	9.93	3,154.00	110.10	3,438.40	120.03
2044	273.20	9.54	3,030.00	105.80	3,303.20	115.34
2045	262.50	9.17	2,911.00	101.70	3,173.50	110.87
2046	252.20	8.81	2,797.00	97.67	3,049.20	106.48
2047	242.30	8.46	2,688.00	93.84	2,930.30	102.30
2048	232.80	8.13	2,582.00	90.16	2,814.80	98.29
2049	223.70	7.81	2,481.00	86.63	2,704.70	94.44
2050	214.90	7.51	2,384.00	83.23	2,598.90	90.74
2051	206.50	7.21	2,290.00	79.97	2,496.50	87.18
2052	198.40	6.93	2,200.00	76.83	2,398.40	83.76
2053	190.60	6.66	2,114.00	73.82	2,304.60	80.48
2054	183.20	6.40	2,031.00	70.92	2,214.20	77.32
2055	176.00	6.14	1,952.00	68.14	2,128.00	74.28
2056	169.10	5.90	1,875.00	65.47	2,044.10	71.37
2057	162.40	5.67	1,802.00	62.90	1,964.40	68.57
2058	156.10	5.45	1,731.00	60.44	1,887.10	65.89
2059	150.00	5.24	1,663.00	58.07	1,813.00	63.31
2060	144.10	5.03	1,598.00	55.79	1,742.10	60.82
2061	138.40	4.83	1,535.00	53.60	1,673.40	58.43
2062	133.00	4.64	1,475.00	51.50	1,608.00	56.14
2063	127.80	4.46	1,417.00	49.48	1,544.80	53.94

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Appendix A to the Technical Support Document (TSD)
Total Source LandGEM Summary

(continued from previous page)

Year	Victory Environmental Services		Sycamore Ridge		Landfill Total	
	LFG (Avg. SCFM)	NMOC (TPY)	LFG (Avg. SCFM)	NMOC (TPY)	LFG (Avg. SCFM)	NMOC (TPY)
2064	122.80	4.29	1,362.00	47.54	1,484.80	51.83
2065	118.00	4.12	1,308.00	45.68	1,426.00	49.80
2066	113.30	3.96	1,257.00	43.89	1,370.30	47.85
2067	108.90	3.80	1,208.00	42.17	1,316.90	45.97
2068	104.60	3.65	1,160.00	40.51	1,264.60	44.16
2069	100.50	3.51	1,115.00	38.92	1,215.50	42.43
2070	96.58	3.37	1,071.00	37.40	1,167.58	40.77
2071	92.79	3.24	1,029.00	35.93	1,121.79	39.17
2072	89.15	3.11	988.70	34.52	1,077.85	37.63
2073	85.65	2.99	949.90	33.17	1,035.55	36.16
2074	82.30	2.87	912.70	31.87	995.00	34.74
2075	79.07	2.76	876.90	30.62	955.97	33.38
2076	75.97	2.65	842.50	29.42	918.47	32.07
2077	72.99	2.55	809.50	28.26	882.49	30.81
2078	70.13	2.45	777.70	27.16	847.83	29.61
2079	67.38	2.35	747.20	26.09	814.58	28.44
2080	64.74	2.26	717.90	25.07	782.64	27.33
2081	62.20	2.17	689.80	24.09	752.00	26.26
2082	59.76	2.09	662.70	23.14	722.46	25.23
2083	57.42	2.01	636.80	22.23	694.22	24.24
2084	55.16	1.93	611.80	21.36	666.96	23.29
2085	53.00	1.85	587.80	20.52	640.80	22.37
2086	50.92	1.78	564.80	19.72	615.72	21.50
2087	48.93	1.71	542.60	18.95	591.53	20.66
2088	47.01	1.64	521.30	18.20	568.31	19.84
2089	45.17	1.58	500.90	17.49	546.07	19.07
2090	43.39	1.52	481.30	16.80	524.69	18.32
2091	41.69	1.46	462.40	16.14	504.09	17.60
2092	40.06	1.40	444.30	15.51	484.36	16.91
2093	38.49	1.34	426.80	14.90	465.29	16.24
2094	36.98	1.29	410.10	14.32	447.08	15.61
2095	35.53	1.24	394.00	13.76	429.53	15.00
2096	34.14	1.19	378.60	13.22	412.74	14.41
2097	32.80	1.15	363.70	12.70	396.50	13.85
2098	31.51	1.10	349.50	12.20	381.01	13.30
2099	30.28	1.06	335.80	11.72	366.08	12.78
2100	29.09	1.02	322.60	11.26	351.69	12.28
2101	27.95	0.98	309.90	10.82	337.85	11.80
2102	26.85	0.94	297.80	10.40	324.65	11.34
2103	25.80	0.90	286.10	9.99	311.90	10.89
2104	24.79	0.87	274.90	9.60	299.69	10.46
2105	23.82	0.83	264.10	9.22	287.92	10.05
2106	22.88	0.80	253.80	8.86	276.68	9.66
2107	21.98	0.77	243.80	8.51	265.78	9.28
2108	21.12	0.74	234.30	8.18	255.42	8.92
2109	20.29	0.71	225.10	7.86	245.39	8.57
2110	19.50	0.68	216.20	7.55	235.70	8.23
2111	18.73	0.65	207.80	7.25	226.53	7.91
2112	18.00	0.63	199.60	6.97	217.60	7.60

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Appendix A to the Technical Support Document (TSD)
Total Source LandGEM Summary

(continued from previous page)

Year	Victory Environmental Services		Sycamore Ridge		Landfill Total	
	LFG (Avg. SCFM)	NMOC (TPY)	LFG (Avg. SCFM)	NMOC (TPY)	LFG (Avg. SCFM)	NMOC (TPY)
2113			191.80	6.70	191.80	6.70
2114			184.30	6.43	184.30	6.43
2115			177.00	6.18	177.00	6.18
2116			170.10	5.94	170.10	5.94
2117			163.40	5.71	163.40	5.71
2118			157.00	5.48	157.00	5.48
2119			150.90	5.27	150.90	5.27
2120			145.00	5.06	145.00	5.06
2121			139.30	4.86	139.30	4.86
2122			133.80	4.67	133.80	4.67
2123			128.60	4.49	128.60	4.49
2124			123.50	4.31	123.50	4.31
2125			118.70	4.14	118.70	4.14
2126			114.00	3.98	114.00	3.98
2127			109.60	3.83	109.60	3.83
2128			105.30	3.68	105.30	3.68
2129			101.10	3.53	101.10	3.53
2130			97.16	3.39	97.16	3.39
2131			93.35	3.26	93.35	3.26
2132			89.69	3.13	89.69	3.13
2133			86.18	3.01	86.18	3.01
2134			82.80	2.89	82.80	2.89
2135			79.55	2.78	79.55	2.78
2136			76.43	2.67	76.43	2.67
2137			73.43	2.56	73.43	2.56
2138			70.56	2.46	70.56	2.46
2139			67.79	2.37	67.79	2.37
2140			65.13	2.27	65.13	2.27
2141			62.58	2.19	62.58	2.19
2142			60.12	2.10	60.12	2.10
2143			57.77	2.02	57.77	2.02

Peak Emissions

Peak Year	**2030**	
Peak LFG Flow	**5,724.30**	**average SCFM**
Peak NMOC	**199.90**	**average TPY**

Appendix A to the Technical Support Document (TSD)
Landfill VOC Emissions - Victory Environmental Services Landfill

Company Name: **Sycamore Ridge Landfill**
Address: **5621 East Cottom Drive, Pimento, Indiana 47866**
Part 70 Operating Permit Renewal No.: **T167-36980-00116**
Reviewer: **David Matousek**
Date: **September 28, 2016**

Landfill NMOC and VOC

NMOC Emissions

IDEM, OAQ completed a computer simulation of the potential emissions from the landfill using U.S. EPA LandGEM. The model indicated peak NMOC emissions from the landfill are as follows:

Peak NMOC Emissions	16.70	TPY
Year of Occurrence - All Sections	2030	

VOC Emissions

VOC emissions can be estimated from the NMOC emission rate using information from AP-42, Chapter 2.4, November 1998. IDEM, OAQ estimated VOC emissions from the landfill as follows:

NMOC in Landfill Gas	595	ppmv	(AP-42, Ch 2.4, 11/1998)
NMOC Emission Rate in 2030	16.70	TPY	
% VOC in NMOC	39%		(AP-42, Ch 2.4, 11/1998)
VOC Generated in Landfill	**6.51**	**TPY**	

Potential to Emit VOC

VOC Emissions

AP-42, Chapter 2.4, Paragraph 2.4.4.2 - Controlled Emissions, indicates 60% to 85% of landfill gas is collected by the collection system, with 75% the most common.

Landfill Collection Efficiency	75%	
Landfill VOC PTE from LandGEM	6.51	TPY
Potential to Emit VOC (Collected by Collection System and Sent to Control Device)	**4.88**	**TPY**
Fugitive VOC from Landfill, Uncollected VOC	1.63	TPY
Control Device Destruction Efficiency (Lowest)	98%	
Controlled VOC Emissions = VOC to Control x (1-Destruction Efficiency)	**0.10**	**TPY**

Appendix A to the Technical Support Document (TSD)
CO and HAP Emissions - Victory Environmental Services Landfill

Company Name: Sycamore Ridge Landfill
Address: 5621 East Cottom Drive, Pimento, Indiana 47866
Part 70 Operating Permit Renewal No.: T167-36980-00116
Reviewer: David Matousek
Date: September 28, 2016

LFG Temperature	**536.67**	**°R**
LFG Pressure	**1.00**	**atm**
Maximum LFG Generation	**478.30**	**SCFM**
Collection Efficiency	**75%**	
Maximum Captured LFG	**358.73**	**SCFM**

PTE of Carbon Monoxide

Pollutant	Molecular Weight	Concentration (ppmv)	Pollutant Flow (SCFM)	Landfill Emission (TPY)	Control Efficiency	Controlled PTE (TPY)
CO	28.01	141	0.05058	0.95	98%	0.02

Hazardous Air Pollutants (HAPs)

CAS #	Pollutant	Molecular Weight	Concentration (ppmv)	Pollutant Flow (SCFM)	Landfill Emission (TPY)	Control Efficiency	Controlled PTE (TPY)
71556	1,1,1-Trichloroethane	133.41	0.48	0.00017	0.01541	98%	3.08E-04
79345	1,1,2,2-Tetrachloroethane	167.85	1.11	0.00040	0.04483	98%	8.97E-04
75343	1,1-Dichloroethane	98.97	2.35	0.00084	0.05597	98%	1.12E-03
75354	1,1-Dichloroethene	96.94	0.20	0.00007	0.00467	98%	9.33E-05
107062	1,2-Dichloroethane	98.96	0.41	0.00015	0.00976	98%	1.95E-04
78875	1,2-Dichloropropane	112.99	0.18	0.00006	0.00489	98%	9.79E-05
107131	Acrylonitrile	53.06	6.33	0.00227	0.08082	98%	1.62E-03
71432	Benzene	78.11	1.91	0.00069	0.03590	98%	7.18E-04
75150	Carbon Disulfide	76.13	0.58	0.00021	0.01063	98%	2.13E-04
56235	Carbon Tetrachloride	153.84	0.004	1.435E-06	0.00015	98%	2.96E-06
463581	Carbonyl Sulfide	60.07	0.49	0.00018	0.00708	98%	1.42E-04
108907	Chlorobenzene	112.56	0.25	0.00009	0.00677	98%	1.35E-04
75003	Chloroethane	64.52	1.25	0.00045	0.01941	98%	3.88E-04
67663	Chloroform	119.39	0.03	0.00001	0.00086	98%	1.72E-05
106467	Dichlorobenzene	147	0.21	0.00008	0.00743	98%	1.49E-04
75092	Dichloromethane	84.94	14.3	0.00513	0.29229	98%	5.85E-03
100414	Ethylbenzene	106.16	4.61	0.00165	0.11777	98%	2.36E-03
106934	Ethylene Dibromide	187.88	0.001	3.587E-07	0.00005	98%	9.04E-07
110543	Hexane	86.18	6.57	0.00236	0.13625	98%	2.72E-03
7439976	Mercury	200.61	2.92E-04	1.047E-07	0.00001	0%	1.41E-05
108101	Methyl Isobutyl Ketone	100.16	1.87	0.00067	0.04507	98%	9.01E-04
127184	Perchloroethylene	165.83	3.73	0.00134	0.14885	98%	2.98E-03
108883	**Toluene**	**92.13**	**39.3**	**0.01410**	**0.87128**	**98%**	**0.02**
79016	Trichloroethylene	131.40	2.82	0.00101	0.08917	98%	1.78E-03
75014	Vinyl Chloride	62.5	7.34	0.00263	0.11039	98%	2.21E-03
1330207	Xylene	106.16	12.1	0.00434	0.30911	98%	6.18E-03
					0.87	**Highest HAP**	**0.02**
					2.42	**Total HAP**	**0.05**

Methodology:
1) Pollutant Flow (SCFM) = Max. Captured LFG (SCFM) x Concentration (ppmv) / 1,000,000
2) PTE (TPY) = 360 x Pollutant Flow (SCFM) x Molecular Weight (lb/lb.mole) x P (atm) / T (°R); AP-42 Ch. 2.4, Eq. 4, Converted to US Units

Appendix A to the Technical Support Document (TSD)
Fugitive HAP Emissions - Victory Environmental Services Landfill

Company Name: Sycamore Ridge Landfill
Address: 5621 East Cottom Drive, Pimento, Indiana 47866
Part 70 Operating Permit Renewal No.: T167-36980-00116
Reviewer: David Matousek
Date: September 28, 2016

LFG Temperature	**536.67**	**°R**
LFG Pressure	**1.00**	**atm**
Maximum LFG Generation	**478.30**	**SCFM**
Collection Efficiency	**75%**	
Captured LFG	**358.73**	**SCFM**
Uncaptured LFG	**119.58**	**SCFM**

Hazardous Air Pollutants (HAPs)					
CAS #	**Pollutant**	**Molecular Weight**	**Concentration (ppmv)**	**Pollutant Flow (SCFM)**	**Fugitive HAP (TPY)**
71556	1,1,1-Trichloroethane	133.41	0.48	5.7396E-05	5.14E-03
79345	1,1,2,2-Tetrachloroethane	167.85	1.11	1.3273E-04	0.01
75343	1,1-Dichloroethane	98.97	2.35	2.8100E-04	0.02
75354	1,1-Dichloroethene	96.94	0.20	2.3915E-05	1.56E-03
107062	1,2-Dichloroethane	98.96	0.41	4.9026E-05	3.25E-03
78875	1,2-Dichloropropane	112.99	0.18	2.1524E-05	1.63E-03
107131	Acrylonitrile	53.06	6.33	7.5691E-04	0.03
71432	Benzene	78.11	1.91	2.2839E-04	0.01
75150	Carbon Disulfide	76.13	0.58	6.9354E-05	3.54E-03
56235	Carbon Tetrachloride	153.84	0.004	4.7830E-07	4.94E-05
463581	Carbonyl Sulfide	60.07	0.49	5.8592E-05	2.36E-03
108907	Chlorobenzene	112.56	0.25	2.9894E-05	2.26E-03
75003	Chloroethane	64.52	1.25	1.4947E-04	6.47E-03
67663	Chloroform	119.39	0.03	3.5873E-06	2.87E-04
106467	Dichlorobenzene	147	0.21	2.5111E-05	2.48E-03
75092	Dichloromethane	84.94	14.3	1.7099E-03	0.10
100414	Ethylbenzene	106.16	4.61	5.5124E-04	0.04
106934	Ethylene Dibromide	187.88	0.001	1.1958E-07	1.51E-05
110543	Hexane	86.18	6.57	7.8561E-04	0.05
7439976	Mercury	200.61	2.92E-04	3.4916E-08	4.70E-06
108101	Methyl Isobutyl Ketone	100.16	1.87	2.2361E-04	0.02
127184	Perchloroethylene	165.83	3.73	4.4601E-04	0.05
108883	**Toluene**	**92.13**	**39.3**	4.6993E-03	**0.29**
79016	Trichloroethylene	131.40	2.82	3.3720E-04	0.03
75014	Vinyl Chloride	62.5	7.34	8.7768E-04	0.04
1330207	Xylene	106.16	12.1	1.4469E-03	0.10
				Worst Case HAP - Toluene	**0.29**
				Combined HAP	**0.81**

Methodology:
1) Pollutant Flow (SCFM) = Max. Captured LFG (SCFM) x Concentration (ppmv) / 1,000,000
2) PTE (TPY) = 360 x Pollutant Flow (SCFM) x Molecular Weight (lb/lb.mole) x P (atm) / T (°R); AP-42 Ch. 2.4, Eq. 4, Converted to US Units

Appendix A to the Technical Support Document (TSD)
Landfill VOC Emissions - Sycamore Ridge Landfill

Company Name: **Sycamore Ridge Landfill**
Address: **5621 East Cottom Drive, Pimento, Indiana 47866**
Part 70 Operating Permit Renewal No.: **T167-36980-00116**
Reviewer: **David Matousek**
Date: **September 28, 2016**

Landfill NMOC and VOC

NMOC Emissions

IDEM, OAQ completed a computer simulation of the potential emissions from the landfill using U.S. EPA LandGEM. The model indicated peak NMOC emissions from the landfill are as follows:

Peak NMOC Emissions	183.20	TPY
Year of Occurrence - All Sections	2030	

VOC Emissions

VOC emissions can be estimated from the NMOC emission rate using information from AP-42, Chapter 2.4, November 1998. IDEM, OAQ estimated VOC emissions from the landfill as follows:

NMOC in Landfill Gas	595	ppmv	(AP-42, Ch 2.4, 11/1998)
NMOC Emission Rate in 2030	183.20	TPY	
% VOC in NMOC	39%		(AP-42, Ch 2.4, 11/1998)
VOC Generated in Landfill	**71.45**	**TPY**	

Potential to Emit VOC

VOC Emissions

AP-42, Chapter 2.4, Paragraph 2.4.4.2 - Controlled Emissions, indicates 60% to 85% of landfill gas is collected by the collection system, with 75% the most common.

Landfill Collection Efficiency	75%	
Landfill VOC PTE from LandGEM	71.45	TPY
Potential to Emit VOC (Collected by Collection System and Sent to Control Device)	**53.59**	**TPY**
Fugitive VOC from Landfill, Uncollected VOC	17.86	TPY
Control Device Destruction Efficiency (Lowest)	98%	
Controlled VOC Emissions = VOC to Control x (1-Destruction Efficiency)	**1.07**	**TPY**

Appendix A to the Technical Support Document (TSD)
CO and HAP Emissions - Sycamore Ridge Landfill

Company Name: Sycamore Ridge Landfill
Address: 5621 East Cottom Drive, Pimento, Indiana 47866
Part 70 Operating Permit Renewal No.: T167-36980-00116
Reviewer: David Matousek
Date: September 28, 2016

LFG Temperature	**536.67**	**°R**
LFG Pressure	**1.00**	**atm**
Maximum LFG Generation	**5,246.00**	**SCFM**
Collection Efficiency	**75%**	
Maximum Captured LFG	**3,934.50**	**SCFM**

PTE of Carbon Monoxide

Pollutant	Molecular Weight	Concentration (ppmv)	Pollutant Flow (SCFM)	Landfill Emission (TPY)	Control Efficiency	Controlled PTE (TPY)
CO	28.01	141	0.55476	10.42	98%	0.21

Hazardous Air Pollutants (HAPs)

CAS #	Pollutant	Molecular Weight	Concentration (ppmv)	Pollutant Flow (SCFM)	Landfill Emission (TPY)	Control Efficiency	Controlled PTE (TPY)
71556	1,1,1-Trichloroethane	133.41	0.48	0.00189	0.16901	98%	3.38E-03
79345	1,1,2,2-Tetrachloroethane	167.85	1.11	0.00437	0.49173	98%	0.01
75343	1,1-Dichloroethane	98.97	2.35	0.00925	0.61384	98%	0.01
75354	1,1-Dichloroethene	96.94	0.20	0.00079	0.05117	98%	1.02E-03
107062	1,2-Dichloroethane	98.96	0.41	0.00161	0.10708	98%	2.14E-03
78875	1,2-Dichloropropane	112.99	0.18	0.00071	0.05368	98%	1.07E-03
107131	Acrylonitrile	53.06	6.33	0.02491	0.88645	98%	0.02
71432	Benzene	78.11	1.91	0.00751	0.39375	98%	7.88E-03
75150	Carbon Disulfide	76.13	0.58	0.00228	0.11654	98%	2.33E-03
56235	Carbon Tetrachloride	153.84	0.004	1.574E-05	0.00162	98%	3.25E-05
463581	Carbonyl Sulfide	60.07	0.49	0.00193	0.07769	98%	1.55E-03
108907	Chlorobenzene	112.56	0.25	0.00098	0.07427	98%	1.49E-03
75003	Chloroethane	64.52	1.25	0.00492	0.21286	98%	4.26E-03
67663	Chloroform	119.39	0.03	0.00012	0.00945	98%	1.89E-04
106467	Dichlorobenzene	147.00	0.21	0.00083	0.08147	98%	1.63E-03
75092	Dichloromethane	84.94	14.3	0.05626	3.20577	98%	0.06
100414	Ethylbenzene	106.16	4.61	0.01814	1.29166	98%	0.03
106934	Ethylene Dibromide	187.88	0.001	3.935E-06	0.00050	98%	9.92E-06
110543	Hexane	86.18	6.57	0.02585	1.49436	98%	0.03
7439976	Mercury	200.61	2.92E-04	1.149E-06	0.00015	0%	1.55E-04
108101	Methyl Isobutyl Ketone	100.16	1.87	0.00736	0.49433	98%	0.01
127184	Perchloroethylene	165.83	3.73	0.01468	1.63251	98%	0.03
108883	**Toluene**	**92.13**	**39.3**	**0.15463**	**9.55605**	**98%**	**0.19**
79016	Trichloroethylene	131.40	2.82	0.01110	0.97798	98%	0.02
75014	Vinyl Chloride	62.5	7.34	0.02888	1.21077	98%	0.02
1330207	Xylene	106.16	12.1	0.04761	3.39024	98%	0.07
					9.56	**Highest HAP**	**0.19**
					26.59	**Total HAP**	**0.53**

Methodology:
1) Pollutant Flow (SCFM) = Max. Captured LFG (SCFM) x Concentration (ppmv) / 1,000,000
2) PTE (TPY) = 360 x Pollutant Flow (SCFM) x Molecular Weight (lb/lb.mole) x P (atm) / T (°R); AP-42 Ch. 2.4, Eq. 4, Converted to US Units

Appendix A to the Technical Support Document (TSD)
Fugitive HAP Emissions - Sycamore Ridge Landfill

Company Name: Sycamore Ridge Landfill
Address: 5621 East Cottom Drive, Pimento, Indiana 47866
Part 70 Operating Permit Renewal No.: T167-36980-00116
Reviewer: David Matousek
Date: September 28, 2016

LFG Temperature	**536.67**	**°R**
LFG Pressure	**1.00**	**atm**
Maximum LFG Generation	**5,246.00**	**SCFM**
Collection Efficiency	**75%**	
Captured LFG	**3,934.50**	**SCFM**
Uncaptured LFG	**1,311.50**	**SCFM**

Hazardous Air Pollutants (HAPs)					
CAS #	**Pollutant**	**Molecular Weight**	**Concentration (ppmv)**	**Pollutant Flow (SCFM)**	**Fugitive HAP (TPY)**
71556	1,1,1-Trichloroethane	133.41	0.48	6.2952E-04	0.06
79345	1,1,2,2-Tetrachloroethane	167.85	1.11	1.4558E-03	0.16
75343	1,1-Dichloroethane	98.97	2.35	3.0820E-03	0.20
75354	1,1-Dichloroethene	96.94	0.20	2.6230E-04	0.02
107062	1,2-Dichloroethane	98.96	0.41	5.3772E-04	0.04
78875	1,2-Dichloropropane	112.99	0.18	2.3607E-04	0.02
107131	Acrylonitrile	53.06	6.33	8.3018E-03	0.30
71432	Benzene	78.11	1.91	2.5050E-03	0.13
75150	Carbon Disulfide	76.13	0.58	7.6067E-04	0.04
56235	Carbon Tetrachloride	153.84	0.004	5.2460E-06	5.41E-04
463581	Carbonyl Sulfide	60.07	0.49	6.4264E-04	0.03
108907	Chlorobenzene	112.56	0.25	3.2788E-04	0.02
75003	Chloroethane	64.52	1.25	1.6394E-03	0.07
67663	Chloroform	119.39	0.03	3.9345E-05	3.15E-03
106467	Dichlorobenzene	147.00	0.21	2.7542E-04	0.03
75092	Dichloromethane	84.94	14.3	1.8754E-02	1.07
100414	Ethylbenzene	106.16	4.61	6.0460E-03	0.43
106934	Ethylene Dibromide	187.88	0.001	1.3115E-06	1.65E-04
110543	Hexane	86.18	6.57	8.6166E-03	0.50
7439976	Mercury	200.61	2.92E-04	3.8296E-07	5.15E-05
108101	Methyl Isobutyl Ketone	100.16	1.87	2.4525E-03	0.16
127184	Perchloroethylene	165.83	3.73	4.8919E-03	0.54
108883	**Toluene**	**92.13**	**39.3**	5.1542E-02	**3.19**
79016	Trichloroethylene	131.40	2.82	3.6984E-03	0.33
75014	Vinyl Chloride	62.5	7.34	9.6264E-03	0.40
1330207	Xylene	106.16	12.1	1.5869E-02	1.13
				Worst Case HAP - Toluene	**3.19**
				Combined HAP	**8.86**

Methodology:
1) Pollutant Flow (SCFM) = Max. Captured LFG (SCFM) x Concentration (ppmv) / 1,000,000
2) PTE (TPY) = 360 x Pollutant Flow (SCFM) x Molecular Weight (lb/lb.mole) x P (atm) / T (°R); AP-42 Ch. 2.4, Eq. 4, Converted to US Units

Appendix A to the Technical Support Document (TSD)
Potential to Emit - Victory Environmental Landfill - GCCS-VES

Company Name: Sycamore Ridge Landfill
Address: 5621 East Cottom Drive, Pimento, Indiana 47866
Part 70 Operating Permit Renewal No.: T167-36980-00116
Reviewer: David Matousek
Date: September 28, 2016

Calculation Basis

Flare Heat Input Capacity	41.76	MMBtu/hr	Molecular Weight (S)	32.065	lb/lb.mole
Heating Value of Landfill Gas	580.00	Btu/CF	Molecular Weight (SO_2)	64.06	lb/lb.mole
Inlet Gas Temperature	536.67	°R	Molecular Weight (HCL)	36.458	lb/lb.mole
Inlet Gas Pressure	1.00	atm	Molecular Weight (CL^-)	35.453	lb/lb.mole
Design Flare Gas Flow	1,200	SCFM	Molecular Weight (Hexane)	86.18	lb/lb.mole
			Volume % Water in Landfill Gas	3.3%	

Methane Flow Rate at PTE

Flare Gas Flow Rate, Wet Basis	Flare Gas Flow Rate, Dry Basis	% Methane	Methane Flow Rate (Dry Basis)				
1,200.00 SCFM	1,160.40 DSCFM	50.00%	580.20	SCFM	or	304.95	MMCF Methane / year, dry

Uncontrolled Potential to Emit Calculation for Flare

Pollutant	Concentration (ppmv)	Pollutant Flow (SCFM)	Throughput		Emission Factor		PTE (TPY)	Emission Factor Sources
PM			304.95	MMCF/yr, CH4 dry	17.0	lb/MMCF, CH4 dry	2.59	AP-42, Ch. 2.4, Table 2.4-5, 11/98
PM10			304.95	MMCF/yr, CH4 dry	17.0	lb/MMCF, CH4 dry	2.59	Assumed the same as PM
Direct PM2.5			304.95	MMCF/yr, CH4 dry	17.0	lb/MMCF, CH4 dry	2.59	Assumed the same as PM
S	46.9	0.0563					1.21	AP-42, Ch. 2.4, page 2.4-8, 11/98
SO2							2.42	= S(TPY) x MW SO2 / MW S
CL^-	42.00	0.0504					1.20	AP-42, Ch. 2.4, 11/98, default value
HCL							1.23	=CL^- (TPY) x MW HCL / MW CL^-
VOC	4.64	0.0056					0.32	39% of NMOC of 595, 98% control, as hexane
CO			41.76	MMBtu/hr	0.37	lb/MMBtu	67.68	Manufacturer Specification
NOx			41.76	MMBtu/hr	0.068	lb/MMBtu	12.44	AP-42, Ch. 13.5, Table 13.5-1, 9/91

Notes:
1) Methane Flow Rate = Flare Gas Flow Rate x (% Methane)
2) DSCFM = SCFM x (1 - % Water)
3) Pollutant Flow (SCFM) = [Total Landfill Gas Flow (SCFM)] x [ppmv pollutant / 1,000,000]
4) PTE (TPY) = Flow (SCFM) x Emission Factor (lb/MMCF) x [MMCF/1,000,000 CF] x [60 min/hr] x [4.38 hr-ton/lb-yr]
5) PTE (TPY) = Heat Input (MMBtu/hr) x Emission Factor (lb/MMBtu) x [4.38 hr-ton/lb-yr]
6) PTE (TPY) = 360 x Pollutant Flow (SCFM) x Molecular Weight (lb/lb.mole) x P (atm) / T (°R); AP-42 Ch. 2.4, Eq. 4, Converted to US Units
7) PTE (TPY) = Throughput (MMCF/yr) x Emission Factor (lb/MMCF) x 1 ton/2,000 lb

Appendix A to the Technical Support Document (TSD)
Potential to Emit - Sycamore Ridge Landfill - GCCS-VES

Company Name: Sycamore Ridge Landfill
Address: 5621 East Cottom Drive, Pimento, Indiana 47866
Part 70 Operating Permit Renewal No.: T167-36980-00116
Reviewer: David Matousek
Date: September 28, 2016

Calculation Basis					
Flare Heat Input Capacity	139.20	MMBtu/hr	Molecular Weight (S)	32.065	lb/lb.mole
Heating Value of Landfill Gas	580.00	Btu/CF	Molecular Weight (SO_2)	64.06	lb/lb.mole
Inlet Gas Temperature	536.67	°R	Molecular Weight (HCL)	36.458	lb/lb.mole
Inlet Gas Pressure	1.00	atm	Molecular Weight (CL^-)	35.453	lb/lb.mole
Design Flare Gas Flow	4,000	SCFM	Molecular Weight (Hexane)	86.18	lb/lb.mole
			Volume % Water in Landfill Gas	3.3%	

Methane Flow Rate at PTE								
Flare Gas Flow Rate, Wet Basis	Flare Gas Flow Rate, Dry Basis		% Methane	Methane Flow Rate (Dry Basis)				
4,000.00 SCFM	3,868.00	DSCFM	50.00%	1,934.00	SCFM	or	1,016.51	MMCF Methane / year, dry

Uncontrolled Potential to Emit Calculation for Flare									
Pollutant	Concentration (ppmv)	Pollutant Flow (SCFM)	Throughput		Emission Factor		PTE (TPY)	Emission Factor Sources
PM			1,016.51	MMCF/yr, CH4 dry	17.0	lb/MMCF, CH4 dry	8.64	AP-42, Ch. 2.4, Table 2.4-5, 11/98
PM10			1,016.51	MMCF/yr, CH4 dry	17.0	lb/MMCF, CH4 dry	8.64	Assumed the same as PM
Direct PM2.5			1,016.51	MMCF/yr, CH4 dry	17.0	lb/MMCF, CH4 dry	8.64	Assumed the same as PM
S	46.9	0.1876					4.04	AP-42, Ch. 2.4 default, page 2.4-8, 11/98
SO2							8.06	= S(TPY) x MW SO2 / MW S
CL^-	42.00	0.1680					4.00	AP-42, Ch. 2.4, 11/98, default value
HCL							4.11	=CL^- (TPY) x MW HCL / MW CL^-
VOC	4.64	0.0186					1.07	39% of NMOC of 595, 98% control, as hexane
CO			139.20	MMBtu/hr	0.37	lb/MMBtu	225.59	Manufacturer Specification
NOx			139.20	MMBtu/hr	0.068	lb/MMBtu	41.46	AP-42, Ch. 13.5, Table 13.5-1, 9/91

Notes:
1) Methane Flow Rate = Flare Gas Flow Rate x (% Methane)
2) DSCFM = SCFM x (1 - % Water)
3) Pollutant Flow (SCFM) = [Total Landfill Gas Flow (SCFM)] x [ppmv pollutant / 1,000,000]
4) PTE (TPY) = Flow (SCFM) x Emission Factor (lb/MMCF) x [MMCF/1,000,000 CF] x [60 min/hr] x [4.38 hr-ton/lb-yr]
5) PTE (TPY) = Heat Input (MMBtu/hr) x Emission Factor (lb/MMBtu) x [4.38 hr-ton/lb-yr]
6) PTE (TPY) = 360 x Pollutant Flow (SCFM) x Molecular Weight (lb/lb.mole) x P (atm) / T (°R); AP-42 Ch. 2.4, Eq. 4, Converted to US Units
7) PTE (TPY) = Throughput (MMCF/yr) x Emission Factor (lb/MMCF) x 1 ton/2,000 lb

Appendix A to the Technical Support Document (TSD)
Welding Emissions

Company Name: Sycamore Ridge Landfill
Address: 5621 East Cottom Drive, Pimento, Indiana 47866
Part 70 Operating Permit Renewal No.: T167-36980-00116
Reviewer: David Matousek
Date: September 28, 2016

Source Wide Stick or Electrode Usage **1,200 lb stick / year maximum usage**

Stick Welding												
	EMISSION FACTORS (lb pollutant/lb stick)				EMISSIONS (lbs/hr)				Emissions (ton/year)			
Type of Stock	PM PM10 PM2.5				PM PM10 PM2.5				PM PM10 PM2.5			
Carbon Steel - Default for Particulate	0.037				5.07E-03				0.02			

Methodology:

1) Emission Factors were estimated by IDEM, OAQ using the highest emission rate for each type of stick welding.
2) Welding stick usage based on maximum daily usage for 326 IAC 6-3-2 not to apply.
3) Welding emissions, lb/hr = Stick Usage (lb stick/hr, total) x emission factor (lb pollutant/lb stick)
4) Emissions, lbs/day = emissions, lbs/hr x 24 hours/day
5) Emissions, tons/yr = emissions, lb/hr x 8,760 hours/year x 1 ton/2,000 lbs.

Appendix A to the Technical Support Document (TSD)
Potential to Emit - Miscellaneous External Propane Combustion

Company Name: Sycamore Ridge Landfill
Address: 5621 East Cottom Drive, Pimento, Indiana 47866
Part 70 Operating Permit Renewal No.: T167-36980-00116
Reviewer: David Matousek
Date: September 28, 2016

Calculation Basis

Source Wide Heat Input	6.000	MMBtu/hr	(4 units combined)	Provided by Permittee
Diesel Fuel Heat Content	91.50	MMBtu/kgallon		AP-42 default value
Hours of Operation	8,760.00	hr/yr		default
Maximum Fuel Usage	574.43	kgallon/year		IDEM estimate

Pollutant	Throughput		Emission Factor		PTE (TPY)	Emission Factor Source
PM	574.43	kgallon/yr	0.20	lb/kgallon	0.06	AP-42, Ch. 1.5, Table 1.5-1, 07/2008
PM10	574.43	kgallon/yr	0.70	lb/kgallon	0.20	AP-42, Ch. 1.5, Table 1.5-1, 07/2008
Direct PM2.5	574.43	kgallon/yr	0.70	lb/kgallon	0.20	AP-42, Ch. 1.5, Table 1.5-1, 07/2008
SO2	574.43	kgallon/yr	0.10	lb/kgallon	0.03	"A National Methodology and Emission Inventory for Residential Fuel Combustion," Bernd H. Haneke, Table 2, Page 5.
VOC	574.43	kgallon/yr	1.00	lb/kgallon	0.29	AP-42, Ch. 1.5, Table 1.5-1, 07/2008
CO	574.43	kgallon/yr	7.50	lb/kgallon	2.15	AP-42, Ch. 1.5, Table 1.5-1, 07/2008
NOx	574.43	kgallon/yr	13.00	lb/kgallon	3.73	AP-42, Ch. 1.5, Table 1.5-1, 07/2008
Hazardous Air Pollutants (HAPs)						
no emission factors are available						

Methodology:
1) PTE (TPY) = Fuel Input (kgallon/yr) x Emission Factor (lb/kgallon) x 1 ton/2,000 lb
2) Fuel Usage (kgallons/yr) = Heat Input (MMBtu/hr) x Operating Hours (hr/yr) / Heat Value of Fuel (MMBtu/kgallon)

Appendix A to the Technical Support Document (TSD)
Emission Calculations - Insignificant Activities - Kerosene (No. 1-K Fuel Oil) Heaters

Company Name: Sycamore Ridge Landfill
Address: 5621 East Cottom Drive, Pimento, Indiana 47866
Part 70 Operating Permit Renewal No.: T167-36980-00116
Reviewer: David Matousek
Date: September 28, 2016

Operating Parameters

Total Heat Input	2.000	MMBtu/hr	(2 units combined)	
Fuel Oil Heat Content	140.00	MMBtu/kgallon		
Sulfur Content	0.5%	(IDEM, OAQ Default)		
Fuel Usage	125.14	kgallons/yr	or	17,520.00 MMBtu/yr

Pollutant		Emission Factor		PTE (TPY)	Emission Factor Source
PM		2.00	lb/kgallon	0.13	AP-42, Ch. 1.3, Table 1.3-1, 5/10
PM_{10}		3.30	lb/kgallon	0.21	AP-42, Ch. 1.3, Table 1.3-1/2, 5/10
$PM_{2.5}$		3.30	lb/kgallon	0.21	AP-42, Ch. 1.3, Table 1.3-1/2, 5/10
SO_2		71.00	lb/kgallon	4.44	142S, AP-42, Ch. 1.3, Table 1.3-1, 5/10
VOC		0.34	lb/kgallon	0.02	AP-42, Ch. 1.3, Table 1.3-3, 5/10
CO		5.00	lb/kgallon	0.31	AP-42, Ch. 1.3, Table 1.3-1, 5/10
NO_x		20	lb/kgallon	1.25	AP-42, Ch. 1.3, Table 1.3-1, 5/10
CAS #	**Pollutant**	**Hazardous Air Pollutants**			
71556	1,1,1-Trichloroethane	2.36E-04	lb/kgallon	1.48E-05	AP-42, Ch. 1.3, Table 1.3-9, 5/10
83329	Acenaphthene	2.11E-05	lb/kgallon	1.32E-06	AP-42, Ch. 1.3, Table 1.3-9, 5/10
208968	Acenaphthylene	2.53E-07	lb/kgallon	1.58E-08	AP-42, Ch. 1.3, Table 1.3-9, 5/10
120127	Anthracene	1.22E-06	lb/kgallon	7.63E-08	AP-42, Ch. 1.3, Table 1.3-9, 5/10
56553	Benz(a)anthracene	4.01E-06	lb/kgallon	2.51E-07	AP-42, Ch. 1.3, Table 1.3-9, 5/10
71432	Benzene	2.14E-04	lb/kgallon	1.34E-05	AP-42, Ch. 1.3, Table 1.3-9, 5/10
205992	Benzo(b)fluoranthene	1.48E-06	lb/kgallon	9.26E-08	AP-42, Ch. 1.3, Table 1.3-9, 5/10
191242	Benzo(g,h,i)perylene	2.26E-06	lb/kgallon	1.41E-07	AP-42, Ch. 1.3, Table 1.3-9, 5/10
218019	Chrysene	2.38E-06	lb/kgallon	1.49E-07	AP-42, Ch. 1.3, Table 1.3-9, 5/10
53703	Dibenzo(a,h)anthracene	1.67E-06	lb/kgallon	1.04E-07	AP-42, Ch. 1.3, Table 1.3-9, 5/10
100414	Ethylbenzene	6.36E-05	lb/kgallon	3.98E-06	AP-42, Ch. 1.3, Table 1.3-9, 5/10
206440	Fluoranthene	4.84E-06	lb/kgallon	3.03E-07	AP-42, Ch. 1.3, Table 1.3-9, 5/10
86737	Fluorene	4.47E-06	lb/kgallon	2.80E-07	AP-42, Ch. 1.3, Table 1.3-9, 5/10
50000	**Formaldehyde**	**3.30E-02**	**lb/kgallon**	**2.06E-03**	**AP-42, Ch. 1.3, Table 1.3-9, 5/10**
193395	Indo(1,2,3-cd)pyrene	2.14E-06	lb/kgallon	1.34E-07	AP-42, Ch. 1.3, Table 1.3-9, 5/10
91203	Naphthalene	1.13E-03	lb/kgallon	7.07E-05	AP-42, Ch. 1.3, Table 1.3-9, 5/10
3268879	OCDD	3.10E-09	lb/kgallon	1.94E-10	AP-42, Ch. 1.3, Table 1.3-9, 5/10
85018	Phenanthrene	1.05E-05	lb/kgallon	6.57E-07	AP-42, Ch. 1.3, Table 1.3-9, 5/10
129000	Pyrene	4.25E-06	lb/kgallon	2.66E-07	AP-42, Ch. 1.3, Table 1.3-9, 5/10
108883	Toluene	6.20E-03	lb/kgallon	3.88E-04	AP-42, Ch. 1.3, Table 1.3-9, 5/10
1330207	Xylene	1.09E-04	lb/kgallon	6.82E-06	AP-42, Ch. 1.3, Table 1.3-9, 5/10
7440382	Arsenic	4.00	lb/10^12 Btu	3.50E-05	AP-42, Ch. 1.3, Table 1.3-10, 5/10
7440417	Beryllium	3.00	lb/10^12 Btu	2.63E-05	AP-42, Ch. 1.3, Table 1.3-10, 5/10
7440439	Cadmium	3.00	lb/10^12 Btu	2.63E-05	AP-42, Ch. 1.3, Table 1.3-10, 5/10
7440473	Chromium	3.00	lb/10^12 Btu	2.63E-05	AP-42, Ch. 1.3, Table 1.3-10, 5/10
7439921	Lead	9.00	lb/10^12 Btu	7.88E-05	AP-42, Ch. 1.3, Table 1.3-10, 5/10
7439976	Mercury	3.00	lb/10^12 Btu	2.63E-05	AP-42, Ch. 1.3, Table 1.3-10, 5/10
7439965	Manganese	6.00	lb/10^12 Btu	5.26E-05	AP-42, Ch. 1.3, Table 1.3-10, 5/10
7440020	Nickel	3.00	lb/10^12 Btu	2.63E-05	AP-42, Ch. 1.3, Table 1.3-10, 5/10
7782492	Selenium	15.00	lb/10^12 Btu	1.31E-04	AP-42, Ch. 1.3, Table 1.3-10, 5/10
			Total HAP	**3.00E-03**	
			Single HAP - Formaldehyde	**2.06E-03**	

Methodology:
1) Emission factors from AP-42 for distillate oil were used. AP-42 does not have emission factors for kerosene.
2) PTE (TPY) = Fuel Usage (kgallon/yr) x Emission Factor (lb/kgallon) x 1 ton/2,000 lb
3) PTE (TPY) = Heat Input (MMBtu/hr) x Emission Factor (lb/ 10^{12} Btu) x 10^6 Btu/MMBtu x 4.38 ton.hr/lb.yr
4) Fuel Heat Content (MMBtu/kgallon) = 140,000 Btu/gallon x 1 MMBtu/10^6 Btu x 1,000 gallon/kgallon. Heat content is from AP-42, Appendix A.

Appendix A to the Technical Support Document (TSD)
Waste Oil-Fired Furnace

Company Name: Sycamore Ridge Landfill
Address: 5621 East Cottom Drive, Pimento, Indiana 47866
Part 70 Operating Permit Renewal No.: T167-36980-00116
Reviewer: David Matousek
Date: September 28, 2016

Operating Parameters

Total Heat Input	2.000	MMBtu/hr			
Fuel Oil Heat Content	140.00	MMBtu/kgallon			
Fuel Usage	125.14	kgallons/yr	or	17,520.00	MMBtu/yr

Fuel Characteristics

Ash Content (A)	0.65%	Background Document for AP-42, Section 1.11, Table 2-1 (6,500 ppmw)
Sulfur Content (S)	0.50%	Background Document for AP-42, Section 1.11, Table 2-1 (5,000 ppmw)
Lead Content (L)	0.11%	Background Document for AP-42, Section 1.11, Table 2-1 (1,100 ppmw)
Chlorine Content (CL)	0.22%	Background Document for AP-42, Section 1.11, Table 2-1 (2,200 ppmw)

Waste Oil Emission Calculations (TPY)

Pollutant	Emission Factor		PTE (TPY)	Emission Factor Source
PM	42.90	lb/kgallon	2.68	AP-42, Ch 1.11, Table 1.11-1, 10/1996
PM_{10}	37.05	lb/kgallon	2.32	AP-42, Ch 1.11, Table 1.11-1, 10/1996
$PM_{2.5}$	37.05	lb/kgallon	2.32	Assumed the same as PM10
SO_2	73.50	lb/kgallon	4.60	AP-42, Ch 1.11, Table 1.11-2, 10/1996
VOC	1.00	lb/kgallon	0.06	AP-42, Ch 1.11, Table 1.11-3, 10/1996
CO	5.00	lb/kgallon	0.31	AP-42, Ch 1.11, Table 1.11-2, 10/1996
NO_x	19	lb/kgallon	1.19	AP-42, Ch 1.11, Table 1.11-2, 10/1996
CAS #	**Pollutant**		**Hazardous Air Pollutants**	
56553 / 218019	Benzo(a)anthracene / Chrysene	4.00E-03	lb/kgallon	2.50E-04	AP-42, Ch 1.11, Table 1.11-4, 10/1996
117817	Bis(2-ethylhexyl)phthalate	2.20E-03	lb/kgallon	1.38E-04	AP-42, Ch 1.11, Table 1.11-4, 10/1996
84742	Dibutylphthalate	3.40E-05	lb/kgallon	2.13E-06	AP-42, Ch 1.11, Table 1.11-4, 10/1996
95501	Dichlorobenzene	8.00E-07	lb/kgallon	5.01E-08	AP-42, Ch 1.11, Table 1.11-4, 10/1996
91203	Naphthalene	1.30E-02	lb/kgallon	8.13E-04	AP-42, Ch 1.11, Table 1.11-4, 10/1996
85018 / 120127	Phenanthrene / Anthracene	1.10E-02	lb/kgallon	6.88E-04	AP-42, Ch 1.11, Table 1.11-4, 10/1996
108952	Phenol	2.40E-03	lb/kgallon	1.50E-04	AP-42, Ch 1.11, Table 1.11-4, 10/1996
129000	Pyrene	7.10E-03	lb/kgallon	4.44E-04	AP-42, Ch 1.11, Table 1.11-4, 10/1996
7440360	Antimony	4.50E-03	lb/kgallon	2.82E-04	AP-42, Ch 1.11, Table 1.11-4, 10/1996
7440382	Arsenic	0.11	lb/kgallon	6.88E-03	AP-42, Ch 1.11, Table 1.11-4, 10/1996
7440417	Beryllium	1.80E-03	lb/kgallon	1.13E-04	AP-42, Ch 1.11, Table 1.11-4, 10/1996
7440439	Cadmium	1.20E-02	lb/kgallon	7.51E-04	AP-42, Ch 1.11, Table 1.11-4, 10/1996
7440473	Chromium	0.19	lb/kgallon	1.19E-02	AP-42, Ch 1.11, Table 1.11-4, 10/1996
7440484	Cobalt	5.70E-03	lb/kgallon	3.57E-04	AP-42, Ch 1.11, Table 1.11-4, 10/1996
7647010	Hydrochloric Acid	7.26	lb/kgallon	0.45	AP-42, Ch 1.11, Table 1.11-3, 10/1996
7439921	Lead	6.05	lb/kgallon	0.38	AP-42, Ch 1.11, Table 1.11-1, 10/1996
7439965	Manganese	6.80E-02	lb/kgallon	4.25E-03	AP-42, Ch 1.11, Table 1.11-4, 10/1996
7440020	Nickel	0.16	lb/kgallon	0.01	AP-42, Ch 1.11, Table 1.11-4, 10/1996
			Total HAP	**0.87**	
			Single HAP - HCL	**0.45**	

Methodology:
1) PTE (TPY) = emission factor (lb/kgallon) x fuel usage (kgallon/yr) x 1 ton/2,000 lb
2) Worst case emission factors used for PM, PM10, Pb, SO2, and HCL.
3) PM Emission Factor (lb/kgallon) = 66 x (ash content in %)
4) PM10 Emission Factor (lb/kgallon) = 57 x (ash content in %)
5) Pb Emission Factor (lb/kgallon) = 55 x (lead content in %)
6) SO2 Emission Factor (lb/kgallon) = 147 x (sulfur content in %)

Appendix A to the Technical Support Document (TSD)
Gasoline Distribution Facility

Company Name: Sycamore Ridge Landfill
Address: 5621 East Cottom Drive, Pimento, Indiana 47866
Part 70 Operating Permit Renewal No.: T167-36980-00116
Reviewer: David Matousek
Date: September 28, 2016

Underground Gasoline Storage Tanks

VOC Emissions				
Process Step	**Throughput (gal/yr)**	**Emission Factor (lb/kgal)**	**PTE VOC (TPY)**	**Emission Factor Source**
Splash Fill Storage	120,000	11.50	0.69	AP-42, Ch. 5.2, Table 5.2-7, June 2008
Tank Breathing / Emptying / Hose Losses		1.00	0.06	
Displacement from Vehicle Filling		11.00	0.66	
Spillage		0.70	0.042	

Total VOC Emissions (TPY) = 1.45

HAP Emissions					
CAS #	**Process Step**	**Total VOC (TPY)**	**Vapor Mass %**	**PTE HAP (TPY)**	**Source of Mass %**
71432	Benzene	1.45	1.41%	2.05E-02	U.S. EPA Speciate 4.4 Profile 2490
98828	Cumene (Isopropyl Benzene)		0.01%	1.45E-04	
100414	Ethyl Benzene		0.06%	8.71E-04	
110543	Hexane		3.75%	5.45E-02	
108883	Toluene		1.25%	1.82E-02	
540841	Trimethylpentane, 2,2,4-		0.42%	6.10E-03	
1330207	Xylene		0.04%	5.81E-04	

Combined HAP Emissions (TPY) = 0.10

Notes:
1) U.S. EPA, Speciate, Profile 2490, Composite of 14 Emission Profiles from Gasoline Storage Tanks, 19932)

Methodology:
1) PTE (VOC) = Throughput (gallon/year) x 1 kgallon/1,000 gallon x Emission Factor (lb/kgal) x 1 ton/2,000 lb
2) PTE (HAP) = Total VOC (TPY) x Vapor Mass %

Appendix A to the Technical Support Document (TSD)
Fugitive Dust Emissions from Paved Roads

Company Name: Sycamore Ridge Landfill
Address: 5621 East Cottom Drive, Pimento, Indiana 47866
Part 70 Operating Permit Renewal No.: T167-36980-00116
Reviewer: David Matousek
Date: September 28, 2016

Paved Roads at Industrial Site
The following calculations determine the amount of emissions created by paved roads, based on 8,760 hours of use and AP-42, Ch 13.2.1 (1/2011).

Vehicle Informtation (provided by source)

Type	Maximum number of vehicles per day	Number of one-way trips per day per vehicle	Maximum trips per day (trip/day)	Maximum Weight Loaded (tons/trip)	Total Weight driven per day (ton/day)	Maximum one-way distance (feet/trip)	Maximum one-way distance (mi/trip)	Maximum one-way miles (miles/day)	Maximum one-way miles (miles/yr)
Transfer Trailers (entering plant) (one-way trip)	120.0	1.0	120.0	40.0	4,800.0	328.0	0.1	7.5	2,720.9
Front End Loaders (entering plant) (one-way trip	48.0	1.0	48.0	33.0	1,584.0	328.0	0.1	3.0	1,088.4
Rear Loaders (entering plant) (one-way trip)	40.0	1.0	40.0	34.0	1,360.0	328.0	0.1	2.5	907.0
Roll-off Trucks (entering plant) (one-way trip)	75.0	1.0	75.0	31.0	2,325.0	328.0	0.1	4.7	1,700.6
Dump Trucks (entering plant) (one-way trip)	30.0	1.0	30.0	30.0	900.0	328.0	0.1	1.9	680.2
Others (entering plant) (one-way trip)	206.0	1.0	206.0	2.5	515.0	328.0	0.1	12.8	4,670.9
Transfer Trailers (leaving plant) (one-way trip)	120.0	1.0	120.0	20.0	2,400.0	328.0	0.1	7.5	2,720.9
Front End Loaders (leaving plant) (one-way trip)	48.0	1.0	48.0	15.0	720.0	328.0	0.1	3.0	1,088.4
Rear Loaders (leaving plant) (one-way trip)	40.0	1.0	40.0	15.0	600.0	328.0	0.1	2.5	907.0
Roll-off Trucks (leaving plant) (one-way trip)	75.0	1.0	75.0	15.0	1,125.0	328.0	0.1	4.7	1,700.6
Dump Trucks (leaving plant) (one-way trip)	30.0	1.0	30.0	15.0	450.0	328.0	0.1	1.9	680.2
Others (leaving plant) (one-way trip)	206.0	1.0	206.0	2.5	515.0	328.0	0.1	12.8	4,670.9
Totals			**1,038.0**		**17,294.0**			**64.5**	**23,535.9**

Average Vehicle Weight Per Trip = 16.7 tons/trip
Average Miles Per Trip = 0.06 miles/trip

Unmitigated Emission Factor, Ef = [k * (sL)^0.91 * (W)^1.02] (Equation 1 from AP-42 13.2.1)

	PM	PM10	PM2.5	
where k =	0.011	0.0022	0.00054	lb/VMT = particle size multiplier (AP-42 Table 13.2.1-1)
W =	16.7	16.7	16.7	tons = average vehicle weight (provided by source)
sL =	9.7	9.7	9.7	g/m^2 = silt loading value for paved roads at iron and steel production facilities - Table 13.2.1-3)

Taking natural mitigation due to precipitation into consideration, Mitigated Emission Factor, Eext = E * [1 - (p/4N)] (Equation 2 from AP-42 13.2.1)
Mitigated Emission Factor, Eext = Ef * [1 - (p/4N)]
where p = 125 days of rain greater than or equal to 0.01 inches (see Fig. 13.2.1-2)
N = 365 days per year

	PM	PM10	PM2.5	
Unmitigated Emission Factor, Ef =	1.533	0.307	0.0752	lb/mile
Mitigated Emission Factor, Eext =	1.402	0.280	0.0688	lb/mile
Dust Control Efficiency =	50%	50%	50%	(pursuant to control measures outlined in fugitive dust control plan)

Process	Unmitigated PTE of PM (tons/yr)	Unmitigated PTE of PM10 (tons/yr)	Unmitigated PTE of PM2.5 (tons/yr)	Mitigated PTE of PM (tons/yr)	Mitigated PTE of PM10 (tons/yr)	Mitigated PTE of PM2.5 (tons/yr)	Controlled PTE of PM (tons/yr)	Controlled PTE of PM10 (tons/yr)	Controlled PTE of PM2.5 (tons/yr)
Transfer Trailers (entering plant) (one-way trip)	2.09	0.42	0.10	1.91	0.38	0.09	0.95	0.19	0.05
Front End Loaders (entering plant) (one-way trip	0.83	0.17	0.04	0.76	0.15	0.04	0.38	0.08	0.02
Rear Loaders (entering plant) (one-way trip)	0.70	0.14	0.03	0.64	0.13	0.03	0.32	0.06	0.02
Roll-off Trucks (entering plant) (one-way trip)	1.30	0.26	0.06	1.19	0.24	0.06	0.60	0.12	0.03
Dump Trucks (entering plant) (one-way trip)	0.52	0.10	0.03	0.48	0.10	0.02	0.24	0.05	0.01
Others (entering plant) (one-way trip)	3.58	0.72	0.18	3.27	0.65	0.16	1.64	0.33	0.08
Transfer Trailers (leaving plant) (one-way trip)	2.09	0.42	0.10	1.91	0.38	0.09	0.95	0.19	0.05
Front End Loaders (leaving plant) (one-way trip)	0.83	0.17	0.04	0.76	0.15	0.04	0.38	0.08	0.02
Rear Loaders (leaving plant) (one-way trip)	0.70	0.14	0.03	0.64	0.13	0.03	0.32	0.06	0.02
Roll-off Trucks (leaving plant) (one-way trip)	1.30	0.26	0.06	1.19	0.24	0.06	0.60	0.12	0.03
Dump Trucks (leaving plant) (one-way trip)	0.52	0.10	0.03	0.48	0.10	0.02	0.24	0.05	0.01
Others (leaving plant) (one-way trip)	3.58	0.72	0.18	3.27	0.65	0.16	1.64	0.33	0.08
Totals	**18.04**	**3.61**	**0.89**	**16.49**	**3.30**	**0.81**	**8.25**	**1.65**	**0.40**

Methodology
Total Weight driven per day (ton/day) = [Maximum Weight Loaded (tons/trip)] * [Maximum trips per day (trip/day)]
Maximum one-way distance (mi/trip) = [Maximum one-way distance (feet/trip) / [5280 ft/mile
Maximum one-way miles (miles/day) = [Maximum trips per year (trip/day)] * [Maximum one-way distance (mi/trip)]
Average Vehicle Weight Per Trip (ton/trip) = SUM[Total Weight driven per day (ton/day)] / SUM[Maximum trips per day (trip/day)]
Average Miles Per Trip (miles/trip) = SUM[Maximum one-way miles (miles/day)] / SUM[Maximum trips per year (trip/day)]
Unmitigated PTE (tons/yr) = [Maximum one-way miles (miles/yr)] * [Unmitigated Emission Factor (lb/mile)] * (ton/2000 lbs)
Mitigated PTE (tons/yr) = [Maximum one-way miles (miles/yr)] * [Mitigated Emission Factor (lb/mile)] * (ton/2000 lbs)
Controlled PTE (tons/yr) = [Mitigated PTE (tons/yr)] * [1 - Dust Control Efficiency]

Abbreviations
PM = Particulate Matter
PM10 = Particulate Matter (<10 um)
PM2.5 = Particle Matter (<2.5 um)
PTE = Potential to Emit

Appendix A to the Technical Support Document (TSD)
Fugitive Dust Emissions from Unpaved Roads

Company Name: Sycamore Ridge Landfill
Address: 5621 East Cottom Drive, Pimento, Indiana 47866
Part 70 Operating Permit Renewal No.: T167-36980-00116
Reviewer: David Matousek
Date: September 28, 2016

Unpaved Roads at Industrial Site
The following calculations determine the amount of emissions created by unpaved roads, based on 8,760 hours of use and AP-42, Ch 13.2.2 (11/2006

Vehicle Information (provided by source)

Type	Maximum number of vehicles	Number of one-way trips per day per vehicle	Maximum trips per day (trip/day)	Maximum Weight Loaded (tons/trip)	Total Weight driven per day (ton/day)	Maximum one-way distance (feet/trip)	Maximum one-way distance (mi/trip)	Maximum one-way miles (miles/day)	Maximum one-way miles (miles/yr)
Transfer Trailers (entering plant) (one-way trip)	120.0	1.0	120.0	40.0	4,800.0	4,490.0	0.9	102.0	37,246.6
Front End Loaders (entering plant) (one-way tr	48.0	1.0	48.0	33.0	1,584.0	4,490.0	0.9	40.8	14,898.6
Rear Loaders (entering plant) (one-way trip)	40.0	1.0	40.0	34.0	1,360.0	4,490.0	0.9	34.0	12,415.5
Roll-off Trucks (entering plant) (one-way trip)	75.0	1.0	75.0	31.0	2,325.0	4,490.0	0.9	63.8	23,279.1
Dump Trucks (entering plant) (one-way trip)	30.0	1.0	30.0	30.0	900.0	4,490.0	0.9	25.5	9,311.6
Others (entering plant) (one-way trip)	206.0	1.0	206.0	2.5	515.0	4,490.0	0.9	175.2	63,940.0
Transfer Trailers (leaving plant) (one-way trip)	120.0	1.0	120.0	20.0	2,400.0	4,490.0	0.9	102.0	37,246.6
Front End Loaders (leaving plant) (one-way trip	48.0	1.0	48.0	15.0	720.0	4,490.0	0.9	40.8	14,898.6
Rear Loaders (leaving plant) (one-way trip)	40.0	1.0	40.0	15.0	600.0	4,490.0	0.9	34.0	12,415.5
Roll-off Trucks (leaving plant) (one-way trip)	75.0	1.0	75.0	15.0	1,125.0	4,490.0	0.9	63.8	23,279.1
Dump Trucks (leaving plant) (one-way trip)	30.0	1.0	30.0	15.0	450.0	4,490.0	0.9	25.5	9,311.6
Others (leaving plant) (one-way trip)	206.0	1.0	206.0	2.5	515.0	4,490.0	0.9	175.2	63,940.0
Totals			**1,038.0**		**17,294.0**			**882.7**	**322,183.0**

Average Vehicle Weight Per Trip = 16.7 tons/trip
Average Miles Per Trip = 0.85 miles/trip

Unmitigated Emission Factor, Ef = k*[(s/12)^a]*[(W/3)^b] (Equation 1a from AP-42 13.2.2)

	PM	PM10	PM2.5	
where k =	4.9	1.5	0.15	lb/mi = particle size multiplier (AP-42 Table 13.2.2-2 for Industrial Roads)
s =	6.0	6.0	6.0	% = mean % silt content of unpaved roads (AP-42 Table 13.2.2-1 Iron and Steel Production
a =	0.7	0.9	0.9	= constant (AP-42 Table 13.2.2-2 for Industrial Roads)
W =	16.7	16.7	16.7	tons = average vehicle weight (provided by source)
b =	0.45	0.45	0.45	= constant (AP-42 Table 13.2.2-2 for Industrial Roads)

Taking natural mitigation due to precipitation into consideration, Mitigated Emission Factor, Eext = E * [(365 - P)/365] (Equation 2 from AP-42 13.2.2
Mitigated Emission Factor, Eext = E * [(365 - P)/365]
where P = 125 days of rain greater than or equal to 0.01 inches (see Fig. 13.2.2-1)

	PM	PM10	PM2.5	
Unmitigated Emission Factor, Ef =	6.52	1.74	0.17	lb/mile
Mitigated Emission Factor, Eext =	4.29	1.14	0.11	lb/mile
Dust Control Efficiency =	50%	50%	50%	(pursuant to control measures outlined in fugitive dust control plan

Process	Unmitigated PTE of PM (tons/yr)	Unmitigated PTE of PM10 (tons/yr)	Unmitigated PTE of PM2.5 (tons/yr)	Mitigated PTE of PM (tons/yr)	Mitigated PTE of PM10 (tons/yr)	Mitigated PTE of PM2.5 (tons/yr)	Controlled PTE of PM (tons/yr)	Controlled PTE of PM10 (tons/yr)	Controlled PTE of PM2.5 (tons/yr)
Transfer Trailers (entering plant) (one-way trip)	121.50	32.38	3.24	79.89	21.29	2.13	39.95	10.65	1.06
Front End Loaders (entering plant) (one-way tr	48.60	12.95	1.30	31.96	8.52	0.85	15.98	4.26	0.43
Rear Loaders (entering plant) (one-way trip)	40.50	10.79	1.08	26.63	7.10	0.71	13.32	3.55	0.35
Roll-off Trucks (entering plant) (one-way trip)	75.94	20.24	2.02	49.93	13.31	1.33	24.97	6.65	0.67
Dump Trucks (entering plant) (one-way trip)	30.38	8.10	0.81	19.97	5.32	0.53	9.99	2.66	0.27
Others (entering plant) (one-way trip)	208.58	55.59	5.56	137.15	36.55	3.65	68.57	18.27	1.83
Transfer Trailers (leaving plant) (one-way trip)	121.50	32.38	3.24	79.89	21.29	2.13	39.95	10.65	1.06
Front End Loaders (leaving plant) (one-way trip	48.60	12.95	1.30	31.96	8.52	0.85	15.98	4.26	0.43
Rear Loaders (leaving plant) (one-way trip)	40.50	10.79	1.08	26.63	7.10	0.71	13.32	3.55	0.35
Roll-off Trucks (leaving plant) (one-way trip)	75.94	20.24	2.02	49.93	13.31	1.33	24.97	6.65	0.67
Dump Trucks (leaving plant) (one-way trip)	30.38	8.10	0.81	19.97	5.32	0.53	9.99	2.66	0.27
Others (leaving plant) (one-way trip)	208.58	55.59	5.56	137.15	36.55	3.65	68.57	18.27	1.83
Totals	**1051.01**	**280.09**	**28.01**	**691.08**	**184.17**	**18.42**	**345.54**	**92.08**	**9.21**

Methodology

Total Weight driven per day (ton/day)	= [Maximum Weight Loaded (tons/trip)] * [Maximum trips per day (trip/day)]
Maximum one-way distance (mi/trip)	= [Maximum one-way distance (feet/trip) / [5280 ft/mile]
Maximum one-way miles (miles/day)	= [Maximum trips per year (trip/day)] * [Maximum one-way distance (mi/trip)]
Average Vehicle Weight Per Trip (ton/trip)	= SUM[Total Weight driven per day (ton/day)] / SUM[Maximum trips per day (trip/day)
Average Miles Per Trip (miles/trip)	= SUM[Maximum one-way miles (miles/day)] / SUM[Maximum trips per year (trip/day)
Unmitigated PTE (tons/yr)	= (Maximum one-way miles (miles/yr)) * (Unmitigated Emission Factor (lb/mile)) * (ton/2000 lbs)
Mitigated PTE (tons/yr)	= (Maximum one-way miles (miles/yr)) * (Mitigated Emission Factor (lb/mile)) * (ton/2000 lbs)
Controlled PTE (tons/yr)	= (Mitigated PTE (tons/yr)) * (1 - Dust Control Efficiency)

Abbreviations
PM = Particulate Matter
PM10 = Particulate Matter (<10 um)
PM2.5 = Particulate Matter (<2.5 um)
PTE = Potential to Emit

Appendix A to the Technical Support Document (TSD)
PSD Minor Limit - Landfill Gas Usage

Company Name: Sycamore Ridge Landfill
Address: 5621 East Cottom Drive, Pimento, Indiana 47866
Part 70 Operating Permit Renewal No.: T167-36980-00116
Reviewer: David Matousek
Date: September 28, 2016

Calculation Basis					
Limited Annual Heat Input	1,334,000.00	MMBtu/yr	Molecular Weight (S)	32.065	lb/lb.mole
Heating Value of Landfill Gas	580.00	MMBtu/MMCF	Molecular Weight (SO_2)	64.06	lb/lb.mole
Inlet Gas Temperature	536.67	°R	Molecular Weight (HCL)	36.458	lb/lb.mole
Inlet Gas Pressure	1.00	atm	Molecular Weight (CL^-)	35.453	lb/lb.mole
PSD Minor Limit	2,300	MMCF/yr	Molecular Weight (Hexane)	86.18	lb/lb.mole
Limit Converted to SCFM	4,375.95	SCFM	% Water in Landfill Gas	3.3%	

Methane Flow Rate at PTE						
Flare Flowrates		% Methane	Methane Flowrates, Dry Basis			
4,375.95 SCFM, wet	4,231.54 SCFM, dry	50.00%	2,115.77 SCFM, dry	or	1,112.05	MMCF Methane/year, dry

Limited Potential to Emit Both Flares									
Pollutant	Concentration (ppmv)	Pollutant Flow (SCFM)	Throughput		Emission Factor		PTE (TPY)	Emission Factor Sources
PM			1,112.05	MMCF/yr, CH4 dry	17.0	lb/MMCF, CH4 dry	9.45	AP-42, Ch. 2.4, Table 2.4-5, 11/98
PM10			1,112.05	MMCF/yr, CH4 dry	17.0	lb/MMCF, CH4 dry	9.45	Assumed the same as PM
Direct PM2.5			1,112.05	MMCF/yr, CH4 dry	17.0	lb/MMCF, CH4 dry	9.45	Assumed the same as PM
S	46.9	0.2052					4.41	AP-42, Ch. 2.4 default, page 2.4-8, 11/98
SO2							8.82	= S(TPY) x MW SO2 / MW S
CL^-	42.00	0.1838					4.37	AP-42, Ch. 2.4, 11/98, default value
HCL							4.49	=CL^- (TPY) x MW HCL / MW CL^-
VOC	4.64	0.0203					1.17	39% of NMOC of 595, 98% control, as hexane
CO			1,334,000	MMBtu/yr	0.37	lb/MMBtu	246.79	PSD Minor Limit
NOx			1,334,000	MMBtu/yr	0.068	lb/MMBtu	45.36	AP-42, Ch. 13.5, Table 13.5-1, 9/91

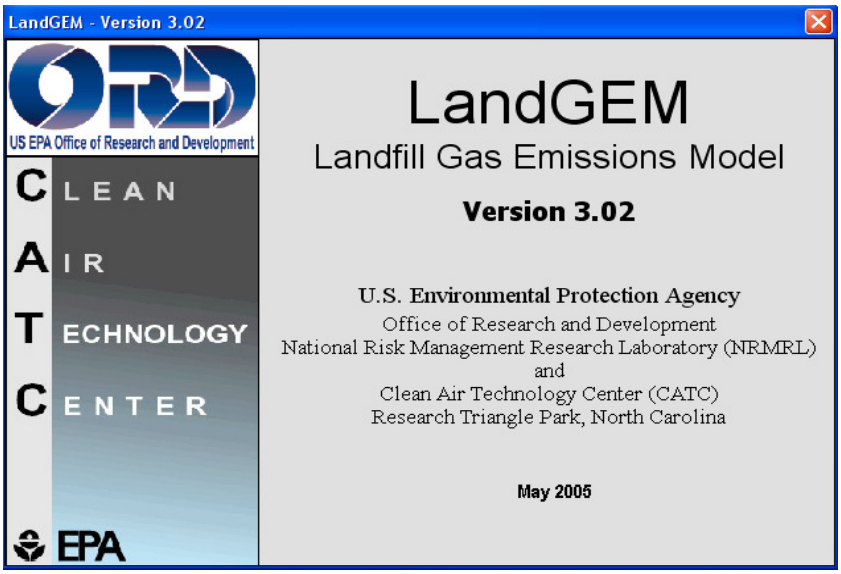
Notes:
1) Methane Flow Rate, dry = Flare Gas Flow Rate, dry basis x (% Methane)
2) DSCFM = SCFM x (1 - % Water)
3) Pollutant Flow (SCFM) = [Total Landfill Gas Flow (SCFM)] x [ppmv pollutant / 1,000,000]
4) PTE (TPY) = Flow (SCFM) x Emission Factor (lb/MMCF) x [MMCF/1,000,000 CF] x [60 min/hr] x [4.38 hr-ton/lb-yr]
5) PTE (TPY) = Heat Input (MMBtu/hr) x Emission Factor (lb/MMBtu) x [4.38 hr-ton/lb-yr]
6) PTE (TPY) = 360 x Pollutant Flow (SCFM) x Molecular Weight (lb/lb.mole) x P (atm) / T (°R); AP-42 Ch. 2.4, Eq. 4, Converted to US Units
7) PTE (TPY) = Throughput (MMCF/yr) x Emission Factor (lb/MMCF) x 1 ton/2,000 lb

INVENTORY

Landfill Name or Identifier: Victory Environmental Services - T167-36980-00116

Enter year of emissions inventory: 2030

Gas / Pollutant	Emission Rate				
	(Mg/year)	*(m^3/year)*	*(av ft^3/min)*	*(ft^3/year)*	*(short tons/year)*
Total landfill gas	8.891E+03	7.119E+06	4.783E+02	2.514E+08	9.780E+03
Methane	2.375E+03	3.560E+06	2.392E+02	1.257E+08	2.612E+03
Carbon dioxide	6.516E+03	3.560E+06	2.392E+02	1.257E+08	7.167E+03
NMOC	1.518E+01	4.236E+03	2.846E-01	1.496E+05	1.670E+01
1,1,1-Trichloroethane (methyl chloroform) - HAP	1.896E-02	3.417E+00	2.296E-04	1.207E+02	2.086E-02
1,1,2,2-Tetrachloroethane - HAP/VOC	5.467E-02	7.831E+00	5.262E-04	2.766E+02	6.014E-02
1,1-Dichloroethane (ethylidene dichloride) - HAP/VOC	7.033E-02	1.709E+01	1.148E-03	6.034E+02	7.737E-02
1,1-Dichloroethene (vinylidene chloride) - HAP/VOC	5.741E-03	1.424E+00	9.567E-05	5.028E+01	6.315E-03
1,2-Dichloroethane (ethylene dichloride) - HAP/VOC	1.201E-02	2.919E+00	1.961E-04	1.031E+02	1.322E-02
1,2-Dichloropropane (propylene dichloride) - HAP/VOC	6.022E-03	1.281E+00	8.610E-05	4.525E+01	6.625E-03
2-Propanol (isopropyl alcohol) - VOC	8.900E-01	3.560E+02	2.392E-02	1.257E+04	9.790E-01
Acetone	1.204E-01	4.983E+01	3.348E-03	1.760E+03	1.324E-01
Acrylonitrile - HAP/VOC	9.898E-02	4.485E+01	3.014E-03	1.584E+03	1.089E-01
Benzene - No or Unknown Co-disposal - HAP/VOC	4.395E-02	1.353E+01	9.088E-04	4.777E+02	4.834E-02
Benzene - Co-disposal - HAP/VOC	2.544E-01	7.831E+01	5.262E-03	2.766E+03	2.799E-01
Bromodichloromethane - VOC	1.504E-01	2.207E+01	1.483E-03	7.794E+02	1.654E-01
Butane - VOC	8.605E-02	3.560E+01	2.392E-03	1.257E+03	9.465E-02
Carbon disulfide - HAP/VOC	1.307E-02	4.129E+00	2.774E-04	1.458E+02	1.438E-02
Carbon monoxide	1.161E+00	9.967E+02	6.697E-02	3.520E+04	1.277E+00
Carbon tetrachloride - HAP/VOC	1.822E-04	2.848E-02	1.913E-06	1.006E+00	2.004E-04
Carbonyl sulfide - HAP/VOC	8.716E-03	3.488E+00	2.344E-04	1.232E+02	9.587E-03
Chlorobenzene - HAP/VOC	8.333E-03	1.780E+00	1.196E-04	6.285E+01	9.166E-03
Chlorodifluoromethane	3.329E-02	9.255E+00	6.218E-04	3.268E+02	3.661E-02
Chloroethane (ethyl chloride) - HAP/VOC	2.484E-02	9.255E+00	6.218E-04	3.268E+02	2.732E-02
Chloroform - HAP/VOC	1.061E-03	2.136E-01	1.435E-05	7.542E+00	1.167E-03
Chloromethane - VOC	1.794E-02	8.543E+00	5.740E-04	3.017E+02	1.973E-02
Dichlorobenzene - (HAP for para isomer/VOC)	9.141E-03	1.495E+00	1.005E-04	5.280E+01	1.005E-02
Dichlorodifluoromethane	5.728E-01	1.139E+02	7.653E-03	4.023E+03	6.301E-01
Dichlorofluoromethane - VOC	7.924E-02	1.851E+01	1.244E-03	6.537E+02	8.716E-02
Dichloromethane (methylene chloride) - HAP	3.521E-01	9.967E+01	6.697E-03	3.520E+03	3.873E-01
Dimethyl sulfide (methyl sulfide) - VOC	1.435E-01	5.553E+01	3.731E-03	1.961E+03	1.578E-01
Ethane	7.925E+00	6.336E+03	4.257E-01	2.238E+05	8.717E+00
Ethanol - VOC	3.684E-01	1.922E+02	1.292E-02	6.788E+03	4.052E-01
Ethyl mercaptan (ethanethiol) - VOC	4.231E-02	1.637E+01	1.100E-03	5.783E+02	4.655E-02
Ethylbenzene - HAP/VOC	1.446E-01	3.275E+01	2.200E-03	1.157E+03	1.591E-01
Ethylene dibromide - HAP/VOC	5.563E-05	7.119E-03	4.783E-07	2.514E-01	6.120E-05
Fluorotrichloromethane - VOC	3.092E-02	5.411E+00	3.635E-04	1.911E+02	3.401E-02
Hexane - HAP/VOC	1.684E-01	4.699E+01	3.157E-03	1.659E+03	1.853E-01
Hydrogen sulfide	3.633E-01	2.563E+02	1.722E-02	9.051E+03	3.996E-01
Mercury (total) - HAP	1.723E-05	2.065E-03	1.387E-07	7.291E-02	1.895E-05
Methyl ethyl ketone - HAP/VOC	1.516E-01	5.055E+01	3.396E-03	1.785E+03	1.668E-01
Methyl isobutyl ketone - HAP/VOC	5.635E-02	1.353E+01	9.088E-04	4.777E+02	6.199E-02
Methyl mercaptan - VOC	3.561E-02	1.780E+01	1.196E-03	6.285E+02	3.918E-02
Pentane - VOC	7.050E-02	2.349E+01	1.579E-03	8.297E+02	7.755E-02
Perchloroethylene (tetrachloroethylene) - HAP	1.817E-01	2.634E+01	1.770E-03	9.302E+02	1.999E-01
Propane - VOC	1.436E-01	7.831E+01	5.262E-03	2.766E+03	1.580E-01
t-1,2-Dichloroethene - VOC	8.037E-02	1.993E+01	1.339E-03	7.040E+02	8.841E-02
Toluene - No or Unknown Co-disposal - HAP/VOC	1.064E+00	2.777E+02	1.866E-02	9.805E+03	1.170E+00
Toluene - Co-disposal - HAP/VOC	4.638E+00	1.210E+03	8.132E-02	4.274E+04	5.101E+00
Trichloroethylene (trichloroethene) - HAP/VOC	1.089E-01	1.993E+01	1.339E-03	7.040E+02	1.198E-01
Vinyl chloride - HAP/VOC	1.351E-01	5.197E+01	3.492E-03	1.835E+03	1.486E-01
Xylenes - HAP/VOC	3.772E-01	8.543E+01	5.740E-03	3.017E+03	4.149E-01



Summary Report

Landfill Name or Identifier: Victory Environmental Services - T167-36980-00116

Date: Wednesday, September 28, 2016

Description/Comments:

About LandGEM:

First-Order Decomposition Rate Equation:

$$Q_{CH_4} = \sum_{i=1}^{n} \sum_{j=0.1}^{1} k L_o \left(\frac{M_i}{10} \right) e^{-k t_{ij}}$$

Where,

Q_{CH4} = annual methane generation in the year of the calculation *(m^3/year)*
i = 1-year time increment
n = (year of the calculation) - (initial year of waste acceptance)
j = 0.1-year time increment
k = methane generation rate (*$year^{-1}$*)
L_o = potential methane generation capacity (*m^3/Mg*)

M_i = mass of waste accepted in the ith year (*Mg*)
t_{ij} = age of the jth section of waste mass M_i accepted in the ith year (*decimal years*, e.g., 3.2 years)

LandGEM is based on a first-order decomposition rate equation for quantifying emissions from the decomposition of landfilled waste in municipal solid waste (MSW) landfills. The software provides a relatively simple approach to estimating landfill gas emissions. Model defaults are based on empirical data from U.S. landfills. Field test data can also be used in place of model defaults when available. Further guidance on EPA test methods, Clean Air Act (CAA) regulations, and other guidance regarding landfill gas emissions and control technology requirements can be found at http://www.epa.gov/ttnatw01/landfill/landflpg.html.

LandGEM is considered a screening tool — the better the input data, the better the estimates. Often, there are limitations with the available data regarding waste quantity and composition, variation in design and operating practices over time, and changes occurring over time that impact the emissions potential. Changes to landfill operation, such as operating under wet conditions through leachate recirculation or other liquid additions, will result in generating more gas at a faster rate. Defaults for estimating emissions for this type of operation are being developed to include in LandGEM along with defaults for convential landfills (no leachate or liquid additions) for developing emission inventories and determining CAA applicability. Refer to the Web site identified above for future updates.

Input Review

LANDFILL CHARACTERISTICS

Landfill Open Year	**1972**	
Landfill Closure Year (with 80-year limit)	**2003**	
Actual Closure Year (without limit)	***2003***	
Have Model Calculate Closure Year?	**Yes**	
Waste Design Capacity	**3,601,000**	*megagrams*

MODEL PARAMETERS

Methane Generation Rate, k	**0.040**	*$year^{-1}$*
Potential Methane Generation Capacity, L_o	**100**	*m^3/Mg*
NMOC Concentration	**595**	*ppmv as hexane*
Methane Content	**50**	*% by volume*

GASES / POLLUTANTS SELECTED

Gas / Pollutant #1:	**Total landfill gas**
Gas / Pollutant #2:	**Methane**
Gas / Pollutant #3:	**Carbon dioxide**
Gas / Pollutant #4:	**NMOC**

WASTE ACCEPTANCE RATES

Year	Waste Accepted		Waste-In-Place	
	(Mg/year)	*(short tons/year)*	*(Mg)*	*(short tons)*
1972	66,636	73,300	0	0
1973	66,636	73,300	66,636	73,300
1974	67,000	73,700	133,272	146,599
1975	66,364	73,000	200,272	220,299
1976	66,364	73,000	266,636	293,300
1977	66,364	73,000	333,000	366,300
1978	67,273	74,000	399,364	439,300
1979	66,364	73,000	466,637	513,301
1980	66,364	73,000	533,001	586,301
1981	66,364	73,000	599,365	659,302
1982	67,273	74,000	665,729	732,302
1983	66,364	73,000	733,002	806,302
1984	66,364	73,000	799,366	879,303
1985	66,364	73,000	865,730	952,303
1986	70,909	78,000	932,094	1,025,303
1987	63,636	70,000	1,003,003	1,103,303
1988	63,636	70,000	1,066,639	1,173,303
1989	72,727	80,000	1,130,275	1,243,303
1990	63,636	70,000	1,203,002	1,323,302
1991	63,636	70,000	1,266,638	1,393,302
1992	54,545	60,000	1,330,274	1,463,301
1993	100,000	110,000	1,384,819	1,523,301
1994	118,182	130,000	1,484,819	1,633,301
1995	118,182	130,000	1,603,001	1,763,301
1996	109,091	120,000	1,721,183	1,893,301
1997	100,000	110,000	1,830,274	2,013,301
1998	100,000	110,000	1,930,274	2,123,301
1999	218,182	240,000	2,030,274	2,233,301
2000	263,636	290,000	2,248,456	2,473,302
2001	290,909	320,000	2,512,092	2,763,301
2002	354,545	390,000	2,803,001	3,083,301
2003	443,454	487,799	3,157,546	3,473,301
2004	0	0	3,601,000	3,961,100
2005	0	0	3,601,000	3,961,100
2006	0	0	3,601,000	3,961,100
2007	0	0	3,601,000	3,961,100
2008	0	0	3,601,000	3,961,100
2009	0	0	3,601,000	3,961,100
2010	0	0	3,601,000	3,961,100
2011	0	0	3,601,000	3,961,100

WASTE ACCEPTANCE RATES (Continued)

Year	Waste Accepted		Waste-In-Place	
	(Mg/year)	*(short tons/year)*	*(Mg)*	*(short tons)*
2012	0	0	3,601,000	3,961,100
2013	0	0	3,601,000	3,961,100
2014	0	0	3,601,000	3,961,100
2015	0	0	3,601,000	3,961,100
2016	0	0	3,601,000	3,961,100
2017	0	0	3,601,000	3,961,100
2018	0	0	3,601,000	3,961,100
2019	0	0	3,601,000	3,961,100
2020	0	0	3,601,000	3,961,100
2021	0	0	3,601,000	3,961,100
2022	0	0	3,601,000	3,961,100
2023	0	0	3,601,000	3,961,100
2024	0	0	3,601,000	3,961,100
2025	0	0	3,601,000	3,961,100
2026	0	0	3,601,000	3,961,100
2027	0	0	3,601,000	3,961,100
2028	0	0	3,601,000	3,961,100
2029	0	0	3,601,000	3,961,100
2030	0	0	3,601,000	3,961,100
2031	0	0	3,601,000	3,961,100
2032	0	0	3,601,000	3,961,100
2033	0	0	3,601,000	3,961,100
2034	0	0	3,601,000	3,961,100
2035	0	0	3,601,000	3,961,100
2036	0	0	3,601,000	3,961,100
2037	0	0	3,601,000	3,961,100
2038	0	0	3,601,000	3,961,100
2039	0	0	3,601,000	3,961,100
2040	0	0	3,601,000	3,961,100
2041	0	0	3,601,000	3,961,100
2042	0	0	3,601,000	3,961,100
2043	0	0	3,601,000	3,961,100
2044	0	0	3,601,000	3,961,100
2045	0	0	3,601,000	3,961,100
2046	0	0	3,601,000	3,961,100
2047	0	0	3,601,000	3,961,100
2048	0	0	3,601,000	3,961,100
2049	0	0	3,601,000	3,961,100
2050	0	0	3,601,000	3,961,100
2051	0	0	3,601,000	3,961,100

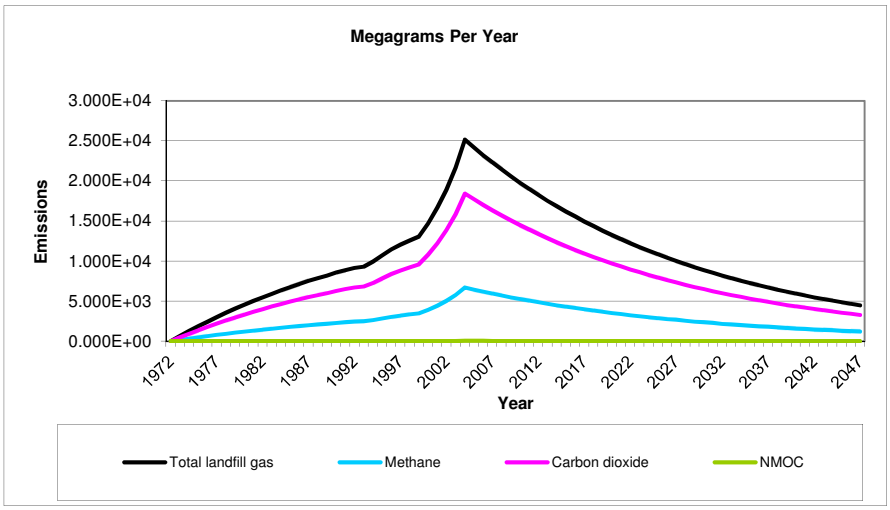
Pollutant Parameters

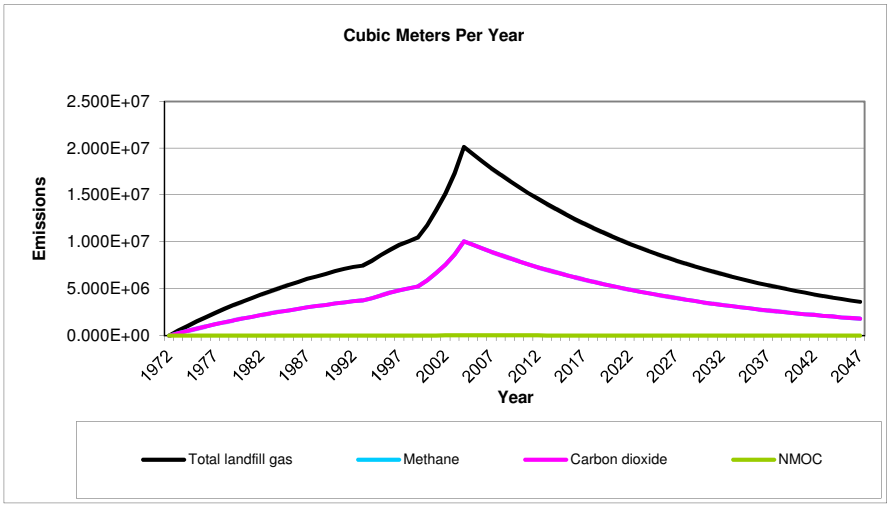
		Gas / Pollutant Default Parameters:		User-specified Pollutant Parameters:	
	Compound	Concentration (*ppmv*)	Molecular Weight	Concentration (*ppmv*)	Molecular Weight
Gases	Total landfill gas		0.00		
	Methane		16.04		
	Carbon dioxide		44.01		
	NMOC	4,000	86.18		
Pollutants	1,1,1-Trichloroethane (methyl chloroform) - HAP	0.48	133.41		
	1,1,2,2-Tetrachloroethane - HAP/VOC	1.1	167.85		
	1,1-Dichloroethane (ethylidene dichloride) - HAP/VOC	2.4	98.97		
	1,1-Dichloroethene (vinylidene chloride) - HAP/VOC	0.20	96.94		
	1,2-Dichloroethane (ethylene dichloride) - HAP/VOC	0.41	98.96		
	1,2-Dichloropropane (propylene dichloride) - HAP/VOC	0.18	112.99		
	2-Propanol (isopropyl alcohol) - VOC	50	60.11		
	Acetone	7.0	58.08		
	Acrylonitrile - HAP/VOC	6.3	53.06		
	Benzene - No or Unknown Co-disposal - HAP/VOC	1.9	78.11		
	Benzene - Co-disposal - HAP/VOC	11	78.11		
	Bromodichloromethane - VOC	3.1	163.83		
	Butane - VOC	5.0	58.12		
	Carbon disulfide - HAP/VOC	0.58	76.13		
	Carbon monoxide	140	28.01		
	Carbon tetrachloride - HAP/VOC	4.0E-03	153.84		
	Carbonyl sulfide - HAP/VOC	0.49	60.07		
	Chlorobenzene - HAP/VOC	0.25	112.56		
	Chlorodifluoromethane	1.3	86.47		
	Chloroethane (ethyl chloride) - HAP/VOC	1.3	64.52		
	Chloroform - HAP/VOC	0.03	119.39		
	Chloromethane - VOC	1.2	50.49		
	Dichlorobenzene - (HAP for para isomer/VOC)	0.21	147		
	Dichlorodifluoromethane	16	120.91		
	Dichlorofluoromethane - VOC	2.6	102.92		
	Dichloromethane (methylene chloride) - HAP	14	84.94		
	Dimethyl sulfide (methyl sulfide) - VOC	7.8	62.13		
	Ethane	890	30.07		
	Ethanol - VOC	27	46.08		

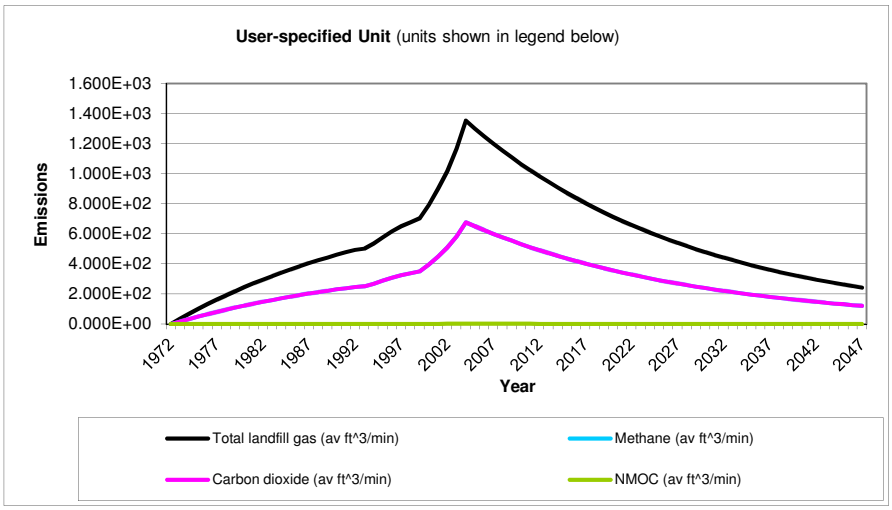
Pollutant Parameters (Continued)

	Gas / Pollutant Default Parameters:			User-specified Pollutant Parameters:	
	Compound	Concentration (*ppmv*)	Molecular Weight	Concentration (*ppmv*)	Molecular Weight
Pollutants	Ethyl mercaptan (ethanethiol) - VOC	2.3	62.13		
	Ethylbenzene - HAP/VOC	4.6	106.16		
	Ethylene dibromide - HAP/VOC	1.0E-03	187.88		
	Fluorotrichloromethane - VOC	0.76	137.38		
	Hexane - HAP/VOC	6.6	86.18		
	Hydrogen sulfide	36	34.08		
	Mercury (total) - HAP	2.9E-04	200.61		
	Methyl ethyl ketone - HAP/VOC	7.1	72.11		
	Methyl isobutyl ketone - HAP/VOC	1.9	100.16		
	Methyl mercaptan - VOC	2.5	48.11		
	Pentane - VOC	3.3	72.15		
	Perchloroethylene (tetrachloroethylene) - HAP	3.7	165.83		
	Propane - VOC	11	44.09		
	t-1,2-Dichloroethene - VOC	2.8	96.94		
	Toluene - No or Unknown Co-disposal - HAP/VOC	39	92.13		
	Toluene - Co-disposal - HAP/VOC	170	92.13		
	Trichloroethylene (trichloroethene) - HAP/VOC	2.8	131.40		
	Vinyl chloride - HAP/VOC	7.3	62.50		
	Xylenes - HAP/VOC	12	106.16		

Graphs


Megagrams Per Year
Emissions
3.000E+04
2.500E+04
2.000E+04
1.500E+04
1.000E+04
5.000E+03
0.000E+00
1972 1977 1982 1987 1992 1997 2002 2007 2012 2017 2022 2027 2032 2037 2042 2047
Year
Total landfill gas
Methane
Carbon dioxide
NMOC


Cubic Meters Per Year
Emissions
2.500E+07
2.000E+07
1.500E+07
1.000E+07
5.000E+06
0.000E+00
1972 1977 1982 1987 1992 1997 2002 2007 2012 2017 2022 2027 2032 2037 2042 2047
Year
Total landfill gas
Methane
Carbon dioxide
NMOC


User-specified Unit (units shown in legend below)
Emissions
1.600E+03
1.400E+03
1.200E+03
1.000E+03
8.000E+02
6.000E+02
4.000E+02
2.000E+02
0.000E+00
1972 1977 1982 1987 1992 1997 2002 2007 2012 2017 2022 2027 2032 2037 2042 2047
Year
Total landfill gas (av ft^3/min)
Methane (av ft^3/min)
Carbon dioxide (av ft^3/min)
NMOC (av ft^3/min)

Results

Year	Total landfill gas			Methane		
	(Mg/year)	*(m^3/year)*	*(av ft^3/min)*	*(Mg/year)*	*(m^3/year)*	*(av ft^3/min)*
1972	0	0	0	0	0	0
1973	6.539E+02	5.236E+05	3.518E+01	1.747E+02	2.618E+05	1.759E+01
1974	1.282E+03	1.027E+06	6.898E+01	3.425E+02	5.133E+05	3.449E+01
1975	1.889E+03	1.513E+06	1.017E+02	5.047E+02	7.565E+05	5.083E+01
1976	2.467E+03	1.975E+06	1.327E+02	6.588E+02	9.875E+05	6.635E+01
1977	3.021E+03	2.419E+06	1.625E+02	8.069E+02	1.210E+06	8.127E+01
1978	3.554E+03	2.846E+06	1.912E+02	9.493E+02	1.423E+06	9.560E+01
1979	4.075E+03	3.263E+06	2.192E+02	1.088E+03	1.631E+06	1.096E+02
1980	4.566E+03	3.656E+06	2.457E+02	1.220E+03	1.828E+06	1.228E+02
1981	5.038E+03	4.034E+06	2.711E+02	1.346E+03	2.017E+06	1.355E+02
1982	5.492E+03	4.398E+06	2.955E+02	1.467E+03	2.199E+06	1.477E+02
1983	5.937E+03	4.754E+06	3.194E+02	1.586E+03	2.377E+06	1.597E+02
1984	6.355E+03	5.089E+06	3.419E+02	1.698E+03	2.544E+06	1.710E+02
1985	6.757E+03	5.411E+06	3.636E+02	1.805E+03	2.705E+06	1.818E+02
1986	7.144E+03	5.720E+06	3.843E+02	1.908E+03	2.860E+06	1.922E+02
1987	7.559E+03	6.053E+06	4.067E+02	2.019E+03	3.027E+06	2.034E+02
1988	7.887E+03	6.316E+06	4.244E+02	2.107E+03	3.158E+06	2.122E+02
1989	8.202E+03	6.568E+06	4.413E+02	2.191E+03	3.284E+06	2.207E+02
1990	8.595E+03	6.882E+06	4.624E+02	2.296E+03	3.441E+06	2.312E+02
1991	8.882E+03	7.112E+06	4.779E+02	2.372E+03	3.556E+06	2.389E+02
1992	9.158E+03	7.333E+06	4.927E+02	2.446E+03	3.667E+06	2.464E+02
1993	9.334E+03	7.475E+06	5.022E+02	2.493E+03	3.737E+06	2.511E+02
1994	9.950E+03	7.967E+06	5.353E+02	2.658E+03	3.984E+06	2.677E+02
1995	1.072E+04	8.583E+06	5.767E+02	2.863E+03	4.292E+06	2.884E+02
1996	1.146E+04	9.176E+06	6.165E+02	3.061E+03	4.588E+06	3.083E+02
1997	1.208E+04	9.673E+06	6.499E+02	3.227E+03	4.836E+06	3.250E+02
1998	1.259E+04	1.008E+07	6.772E+02	3.362E+03	5.040E+06	3.386E+02
1999	1.308E+04	1.047E+07	7.035E+02	3.493E+03	5.235E+06	3.517E+02
2000	1.470E+04	1.177E+07	7.911E+02	3.927E+03	5.887E+06	3.955E+02
2001	1.671E+04	1.338E+07	8.993E+02	4.465E+03	6.692E+06	4.496E+02
2002	1.891E+04	1.515E+07	1.018E+03	5.052E+03	7.573E+06	5.088E+02
2003	2.165E+04	1.734E+07	1.165E+03	5.783E+03	8.669E+06	5.824E+02
2004	2.515E+04	2.014E+07	1.353E+03	6.719E+03	1.007E+07	6.767E+02
2005	2.417E+04	1.935E+07	1.300E+03	6.455E+03	9.676E+06	6.501E+02
2006	2.322E+04	1.859E+07	1.249E+03	6.202E+03	9.297E+06	6.246E+02
2007	2.231E+04	1.786E+07	1.200E+03	5.959E+03	8.932E+06	6.001E+02
2008	2.143E+04	1.716E+07	1.153E+03	5.725E+03	8.582E+06	5.766E+02
2009	2.059E+04	1.649E+07	1.108E+03	5.501E+03	8.245E+06	5.540E+02
2010	1.979E+04	1.584E+07	1.065E+03	5.285E+03	7.922E+06	5.323E+02
2011	1.901E+04	1.522E+07	1.023E+03	5.078E+03	7.611E+06	5.114E+02
2012	1.827E+04	1.463E+07	9.827E+02	4.879E+03	7.313E+06	4.914E+02
2013	1.755E+04	1.405E+07	9.442E+02	4.688E+03	7.026E+06	4.721E+02
2014	1.686E+04	1.350E+07	9.072E+02	4.504E+03	6.751E+06	4.536E+02
2015	1.620E+04	1.297E+07	8.716E+02	4.327E+03	6.486E+06	4.358E+02
2016	1.556E+04	1.246E+07	8.374E+02	4.157E+03	6.232E+06	4.187E+02
2017	1.495E+04	1.197E+07	8.046E+02	3.994E+03	5.987E+06	4.023E+02
2018	1.437E+04	1.151E+07	7.730E+02	3.838E+03	5.753E+06	3.865E+02
2019	1.380E+04	1.105E+07	7.427E+02	3.687E+03	5.527E+06	3.714E+02
2020	1.326E+04	1.062E+07	7.136E+02	3.543E+03	5.310E+06	3.568E+02
2021	1.274E+04	1.020E+07	6.856E+02	3.404E+03	5.102E+06	3.428E+02

Results (Continued)

Year	Total landfill gas			Methane		
	(Mg/year)	*(m^3/year)*	*(av ft^3/min)*	*(Mg/year)*	*(m^3/year)*	*(av ft^3/min)*
2022	1.224E+04	9.804E+06	6.587E+02	3.270E+03	4.902E+06	3.294E+02
2023	1.176E+04	9.420E+06	6.329E+02	3.142E+03	4.710E+06	3.165E+02
2024	1.130E+04	9.050E+06	6.081E+02	3.019E+03	4.525E+06	3.040E+02
2025	1.086E+04	8.695E+06	5.842E+02	2.901E+03	4.348E+06	2.921E+02
2026	1.043E+04	8.355E+06	5.613E+02	2.787E+03	4.177E+06	2.807E+02
2027	1.002E+04	8.027E+06	5.393E+02	2.678E+03	4.013E+06	2.697E+02
2028	9.631E+03	7.712E+06	5.182E+02	2.573E+03	3.856E+06	2.591E+02
2029	9.254E+03	7.410E+06	4.979E+02	2.472E+03	3.705E+06	2.489E+02
2030	8.891E+03	7.119E+06	4.783E+02	2.375E+03	3.560E+06	2.392E+02
2031	8.542E+03	6.840E+06	4.596E+02	2.282E+03	3.420E+06	2.298E+02
2032	8.207E+03	6.572E+06	4.416E+02	2.192E+03	3.286E+06	2.208E+02
2033	7.885E+03	6.314E+06	4.243E+02	2.106E+03	3.157E+06	2.121E+02
2034	7.576E+03	6.067E+06	4.076E+02	2.024E+03	3.033E+06	2.038E+02
2035	7.279E+03	5.829E+06	3.916E+02	1.944E+03	2.914E+06	1.958E+02
2036	6.994E+03	5.600E+06	3.763E+02	1.868E+03	2.800E+06	1.881E+02
2037	6.719E+03	5.381E+06	3.615E+02	1.795E+03	2.690E+06	1.808E+02
2038	6.456E+03	5.170E+06	3.473E+02	1.724E+03	2.585E+06	1.737E+02
2039	6.203E+03	4.967E+06	3.337E+02	1.657E+03	2.483E+06	1.669E+02
2040	5.960E+03	4.772E+06	3.206E+02	1.592E+03	2.386E+06	1.603E+02
2041	5.726E+03	4.585E+06	3.081E+02	1.529E+03	2.293E+06	1.540E+02
2042	5.501E+03	4.405E+06	2.960E+02	1.469E+03	2.203E+06	1.480E+02
2043	5.286E+03	4.233E+06	2.844E+02	1.412E+03	2.116E+06	1.422E+02
2044	5.078E+03	4.067E+06	2.732E+02	1.357E+03	2.033E+06	1.366E+02
2045	4.879E+03	3.907E+06	2.625E+02	1.303E+03	1.954E+06	1.313E+02
2046	4.688E+03	3.754E+06	2.522E+02	1.252E+03	1.877E+06	1.261E+02
2047	4.504E+03	3.607E+06	2.423E+02	1.203E+03	1.803E+06	1.212E+02
2048	4.328E+03	3.465E+06	2.328E+02	1.156E+03	1.733E+06	1.164E+02
2049	4.158E+03	3.329E+06	2.237E+02	1.111E+03	1.665E+06	1.119E+02
2050	3.995E+03	3.199E+06	2.149E+02	1.067E+03	1.599E+06	1.075E+02
2051	3.838E+03	3.073E+06	2.065E+02	1.025E+03	1.537E+06	1.033E+02
2052	3.688E+03	2.953E+06	1.984E+02	9.850E+02	1.476E+06	9.920E+01
2053	3.543E+03	2.837E+06	1.906E+02	9.464E+02	1.419E+06	9.531E+01
2054	3.404E+03	2.726E+06	1.832E+02	9.093E+02	1.363E+06	9.158E+01
2055	3.271E+03	2.619E+06	1.760E+02	8.736E+02	1.310E+06	8.799E+01
2056	3.142E+03	2.516E+06	1.691E+02	8.394E+02	1.258E+06	8.454E+01
2057	3.019E+03	2.418E+06	1.624E+02	8.065E+02	1.209E+06	8.122E+01
2058	2.901E+03	2.323E+06	1.561E+02	7.748E+02	1.161E+06	7.804E+01
2059	2.787E+03	2.232E+06	1.500E+02	7.445E+02	1.116E+06	7.498E+01
2060	2.678E+03	2.144E+06	1.441E+02	7.153E+02	1.072E+06	7.204E+01
2061	2.573E+03	2.060E+06	1.384E+02	6.872E+02	1.030E+06	6.921E+01
2062	2.472E+03	1.979E+06	1.330E+02	6.603E+02	9.897E+05	6.650E+01
2063	2.375E+03	1.902E+06	1.278E+02	6.344E+02	9.509E+05	6.389E+01
2064	2.282E+03	1.827E+06	1.228E+02	6.095E+02	9.136E+05	6.139E+01
2065	2.192E+03	1.756E+06	1.180E+02	5.856E+02	8.778E+05	5.898E+01
2066	2.106E+03	1.687E+06	1.133E+02	5.627E+02	8.434E+05	5.667E+01
2067	2.024E+03	1.621E+06	1.089E+02	5.406E+02	8.103E+05	5.444E+01
2068	1.944E+03	1.557E+06	1.046E+02	5.194E+02	7.785E+05	5.231E+01
2069	1.868E+03	1.496E+06	1.005E+02	4.990E+02	7.480E+05	5.026E+01
2070	1.795E+03	1.437E+06	9.658E+01	4.795E+02	7.187E+05	4.829E+01
2071	1.725E+03	1.381E+06	9.279E+01	4.607E+02	6.905E+05	4.639E+01
2072	1.657E+03	1.327E+06	8.915E+01	4.426E+02	6.634E+05	4.458E+01

Results (Continued)

Year	Total landfill gas			Methane		
	(Mg/year)	*(m^3/year)*	*(av ft^3/min)*	*(Mg/year)*	*(m^3/year)*	*(av ft^3/min)*
2073	1.592E+03	1.275E+06	8.565E+01	4.252E+02	6.374E+05	4.283E+01
2074	1.530E+03	1.225E+06	8.230E+01	4.086E+02	6.124E+05	4.115E+01
2075	1.470E+03	1.177E+06	7.907E+01	3.926E+02	5.884E+05	3.953E+01
2076	1.412E+03	1.131E+06	7.597E+01	3.772E+02	5.653E+05	3.798E+01
2077	1.357E+03	1.086E+06	7.299E+01	3.624E+02	5.432E+05	3.650E+01
2078	1.303E+03	1.044E+06	7.013E+01	3.482E+02	5.219E+05	3.506E+01
2079	1.252E+03	1.003E+06	6.738E+01	3.345E+02	5.014E+05	3.369E+01
2080	1.203E+03	9.635E+05	6.474E+01	3.214E+02	4.817E+05	3.237E+01
2081	1.156E+03	9.257E+05	6.220E+01	3.088E+02	4.629E+05	3.110E+01
2082	1.111E+03	8.894E+05	5.976E+01	2.967E+02	4.447E+05	2.988E+01
2083	1.067E+03	8.545E+05	5.742E+01	2.851E+02	4.273E+05	2.871E+01
2084	1.025E+03	8.210E+05	5.516E+01	2.739E+02	4.105E+05	2.758E+01
2085	9.851E+02	7.888E+05	5.300E+01	2.631E+02	3.944E+05	2.650E+01
2086	9.465E+02	7.579E+05	5.092E+01	2.528E+02	3.790E+05	2.546E+01
2087	9.094E+02	7.282E+05	4.893E+01	2.429E+02	3.641E+05	2.446E+01
2088	8.737E+02	6.996E+05	4.701E+01	2.334E+02	3.498E+05	2.350E+01
2089	8.395E+02	6.722E+05	4.517E+01	2.242E+02	3.361E+05	2.258E+01
2090	8.065E+02	6.458E+05	4.339E+01	2.154E+02	3.229E+05	2.170E+01
2091	7.749E+02	6.205E+05	4.169E+01	2.070E+02	3.103E+05	2.085E+01
2092	7.445E+02	5.962E+05	4.006E+01	1.989E+02	2.981E+05	2.003E+01
2093	7.153E+02	5.728E+05	3.849E+01	1.911E+02	2.864E+05	1.924E+01
2094	6.873E+02	5.504E+05	3.698E+01	1.836E+02	2.752E+05	1.849E+01
2095	6.603E+02	5.288E+05	3.553E+01	1.764E+02	2.644E+05	1.776E+01
2096	6.345E+02	5.080E+05	3.414E+01	1.695E+02	2.540E+05	1.707E+01
2097	6.096E+02	4.881E+05	3.280E+01	1.628E+02	2.441E+05	1.640E+01
2098	5.857E+02	4.690E+05	3.151E+01	1.564E+02	2.345E+05	1.576E+01
2099	5.627E+02	4.506E+05	3.028E+01	1.503E+02	2.253E+05	1.514E+01
2100	5.406E+02	4.329E+05	2.909E+01	1.444E+02	2.165E+05	1.454E+01
2101	5.194E+02	4.159E+05	2.795E+01	1.387E+02	2.080E+05	1.397E+01
2102	4.991E+02	3.996E+05	2.685E+01	1.333E+02	1.998E+05	1.343E+01
2103	4.795E+02	3.840E+05	2.580E+01	1.281E+02	1.920E+05	1.290E+01
2104	4.607E+02	3.689E+05	2.479E+01	1.231E+02	1.845E+05	1.239E+01
2105	4.426E+02	3.544E+05	2.382E+01	1.182E+02	1.772E+05	1.191E+01
2106	4.253E+02	3.405E+05	2.288E+01	1.136E+02	1.703E+05	1.144E+01
2107	4.086E+02	3.272E+05	2.198E+01	1.091E+02	1.636E+05	1.099E+01
2108	3.926E+02	3.144E+05	2.112E+01	1.049E+02	1.572E+05	1.056E+01
2109	3.772E+02	3.020E+05	2.029E+01	1.008E+02	1.510E+05	1.015E+01
2110	3.624E+02	2.902E+05	1.950E+01	9.680E+01	1.451E+05	9.749E+00
2111	3.482E+02	2.788E+05	1.873E+01	9.301E+01	1.394E+05	9.367E+00
2112	3.345E+02	2.679E+05	1.800E+01	8.936E+01	1.339E+05	9.000E+00

Results (Continued)

Year	Carbon dioxide			NMOC		
	(Mg/year)	*(m^3/year)*	*(av ft^3/min)*	*(Mg/year)*	*(m^3/year)*	*(av ft^3/min)*
1972	0	0	0	0	0	0
1973	4.792E+02	2.618E+05	1.759E+01	1.117E+00	3.115E+02	2.093E-02
1974	9.397E+02	5.133E+05	3.449E+01	2.190E+00	6.109E+02	4.105E-02
1975	1.385E+03	7.565E+05	5.083E+01	3.227E+00	9.002E+02	6.048E-02
1976	1.808E+03	9.875E+05	6.635E+01	4.212E+00	1.175E+03	7.896E-02
1977	2.214E+03	1.210E+06	8.127E+01	5.159E+00	1.439E+03	9.671E-02
1978	2.605E+03	1.423E+06	9.560E+01	6.069E+00	1.693E+03	1.138E-01
1979	2.986E+03	1.631E+06	1.096E+02	6.959E+00	1.941E+03	1.304E-01
1980	3.346E+03	1.828E+06	1.228E+02	7.798E+00	2.175E+03	1.462E-01
1981	3.692E+03	2.017E+06	1.355E+02	8.604E+00	2.400E+03	1.613E-01
1982	4.025E+03	2.199E+06	1.477E+02	9.379E+00	2.617E+03	1.758E-01
1983	4.351E+03	2.377E+06	1.597E+02	1.014E+01	2.829E+03	1.901E-01
1984	4.658E+03	2.544E+06	1.710E+02	1.085E+01	3.028E+03	2.034E-01
1985	4.952E+03	2.705E+06	1.818E+02	1.154E+01	3.219E+03	2.163E-01
1986	5.235E+03	2.860E+06	1.922E+02	1.220E+01	3.404E+03	2.287E-01
1987	5.540E+03	3.027E+06	2.034E+02	1.291E+01	3.602E+03	2.420E-01
1988	5.781E+03	3.158E+06	2.122E+02	1.347E+01	3.758E+03	2.525E-01
1989	6.012E+03	3.284E+06	2.207E+02	1.401E+01	3.908E+03	2.626E-01
1990	6.299E+03	3.441E+06	2.312E+02	1.468E+01	4.095E+03	2.751E-01
1991	6.510E+03	3.556E+06	2.389E+02	1.517E+01	4.232E+03	2.843E-01
1992	6.712E+03	3.667E+06	2.464E+02	1.564E+01	4.363E+03	2.932E-01
1993	6.841E+03	3.737E+06	2.511E+02	1.594E+01	4.447E+03	2.988E-01
1994	7.292E+03	3.984E+06	2.677E+02	1.699E+01	4.740E+03	3.185E-01
1995	7.856E+03	4.292E+06	2.884E+02	1.831E+01	5.107E+03	3.431E-01
1996	8.398E+03	4.588E+06	3.083E+02	1.957E+01	5.459E+03	3.668E-01
1997	8.853E+03	4.836E+06	3.250E+02	2.063E+01	5.755E+03	3.867E-01
1998	9.225E+03	5.040E+06	3.386E+02	2.150E+01	5.997E+03	4.030E-01
1999	9.583E+03	5.235E+06	3.517E+02	2.233E+01	6.230E+03	4.186E-01
2000	1.078E+04	5.887E+06	3.955E+02	2.511E+01	7.005E+03	4.707E-01
2001	1.225E+04	6.692E+06	4.496E+02	2.854E+01	7.963E+03	5.351E-01
2002	1.386E+04	7.573E+06	5.088E+02	3.230E+01	9.011E+03	6.055E-01
2003	1.587E+04	8.669E+06	5.824E+02	3.698E+01	1.032E+04	6.931E-01
2004	1.843E+04	1.007E+07	6.767E+02	4.296E+01	1.198E+04	8.052E-01
2005	1.771E+04	9.676E+06	6.501E+02	4.127E+01	1.151E+04	7.737E-01
2006	1.702E+04	9.297E+06	6.246E+02	3.966E+01	1.106E+04	7.433E-01
2007	1.635E+04	8.932E+06	6.001E+02	3.810E+01	1.063E+04	7.142E-01
2008	1.571E+04	8.582E+06	5.766E+02	3.661E+01	1.021E+04	6.862E-01
2009	1.509E+04	8.245E+06	5.540E+02	3.517E+01	9.812E+03	6.593E-01
2010	1.450E+04	7.922E+06	5.323E+02	3.379E+01	9.427E+03	6.334E-01
2011	1.393E+04	7.611E+06	5.114E+02	3.247E+01	9.058E+03	6.086E-01
2012	1.339E+04	7.313E+06	4.914E+02	3.119E+01	8.702E+03	5.847E-01
2013	1.286E+04	7.026E+06	4.721E+02	2.997E+01	8.361E+03	5.618E-01
2014	1.236E+04	6.751E+06	4.536E+02	2.880E+01	8.033E+03	5.398E-01
2015	1.187E+04	6.486E+06	4.358E+02	2.767E+01	7.718E+03	5.186E-01
2016	1.141E+04	6.232E+06	4.187E+02	2.658E+01	7.416E+03	4.983E-01
2017	1.096E+04	5.987E+06	4.023E+02	2.554E+01	7.125E+03	4.787E-01
2018	1.053E+04	5.753E+06	3.865E+02	2.454E+01	6.846E+03	4.600E-01
2019	1.012E+04	5.527E+06	3.714E+02	2.358E+01	6.577E+03	4.419E-01
2020	9.721E+03	5.310E+06	3.568E+02	2.265E+01	6.319E+03	4.246E-01
2021	9.339E+03	5.102E+06	3.428E+02	2.176E+01	6.072E+03	4.079E-01

Results (Continued)

Year	Carbon dioxide			NMOC		
	(Mg/year)	*(m^3/year)*	*(av ft^3/min)*	*(Mg/year)*	*(m^3/year)*	*(av ft^3/min)*
2022	8.973E+03	4.902E+06	3.294E+02	2.091E+01	5.833E+03	3.919E-01
2023	8.621E+03	4.710E+06	3.165E+02	2.009E+01	5.605E+03	3.766E-01
2024	8.283E+03	4.525E+06	3.040E+02	1.930E+01	5.385E+03	3.618E-01
2025	7.959E+03	4.348E+06	2.921E+02	1.855E+01	5.174E+03	3.476E-01
2026	7.646E+03	4.177E+06	2.807E+02	1.782E+01	4.971E+03	3.340E-01
2027	7.347E+03	4.013E+06	2.697E+02	1.712E+01	4.776E+03	3.209E-01
2028	7.059E+03	3.856E+06	2.591E+02	1.645E+01	4.589E+03	3.083E-01
2029	6.782E+03	3.705E+06	2.489E+02	1.580E+01	4.409E+03	2.962E-01
2030	6.516E+03	3.560E+06	2.392E+02	1.518E+01	4.236E+03	2.846E-01
2031	6.260E+03	3.420E+06	2.298E+02	1.459E+01	4.070E+03	2.735E-01
2032	6.015E+03	3.286E+06	2.208E+02	1.402E+01	3.910E+03	2.627E-01
2033	5.779E+03	3.157E+06	2.121E+02	1.347E+01	3.757E+03	2.524E-01
2034	5.552E+03	3.033E+06	2.038E+02	1.294E+01	3.610E+03	2.425E-01
2035	5.335E+03	2.914E+06	1.958E+02	1.243E+01	3.468E+03	2.330E-01
2036	5.126E+03	2.800E+06	1.881E+02	1.194E+01	3.332E+03	2.239E-01
2037	4.925E+03	2.690E+06	1.808E+02	1.148E+01	3.201E+03	2.151E-01
2038	4.732E+03	2.585E+06	1.737E+02	1.103E+01	3.076E+03	2.067E-01
2039	4.546E+03	2.483E+06	1.669E+02	1.059E+01	2.955E+03	1.986E-01
2040	4.368E+03	2.386E+06	1.603E+02	1.018E+01	2.839E+03	1.908E-01
2041	4.196E+03	2.293E+06	1.540E+02	9.779E+00	2.728E+03	1.833E-01
2042	4.032E+03	2.203E+06	1.480E+02	9.395E+00	2.621E+03	1.761E-01
2043	3.874E+03	2.116E+06	1.422E+02	9.027E+00	2.518E+03	1.692E-01
2044	3.722E+03	2.033E+06	1.366E+02	8.673E+00	2.420E+03	1.626E-01
2045	3.576E+03	1.954E+06	1.313E+02	8.333E+00	2.325E+03	1.562E-01
2046	3.436E+03	1.877E+06	1.261E+02	8.006E+00	2.234E+03	1.501E-01
2047	3.301E+03	1.803E+06	1.212E+02	7.692E+00	2.146E+03	1.442E-01
2048	3.172E+03	1.733E+06	1.164E+02	7.391E+00	2.062E+03	1.385E-01
2049	3.047E+03	1.665E+06	1.119E+02	7.101E+00	1.981E+03	1.331E-01
2050	2.928E+03	1.599E+06	1.075E+02	6.822E+00	1.903E+03	1.279E-01
2051	2.813E+03	1.537E+06	1.033E+02	6.555E+00	1.829E+03	1.229E-01
2052	2.703E+03	1.476E+06	9.920E+01	6.298E+00	1.757E+03	1.181E-01
2053	2.597E+03	1.419E+06	9.531E+01	6.051E+00	1.688E+03	1.134E-01
2054	2.495E+03	1.363E+06	9.158E+01	5.814E+00	1.622E+03	1.090E-01
2055	2.397E+03	1.310E+06	8.799E+01	5.586E+00	1.558E+03	1.047E-01
2056	2.303E+03	1.258E+06	8.454E+01	5.367E+00	1.497E+03	1.006E-01
2057	2.213E+03	1.209E+06	8.122E+01	5.156E+00	1.439E+03	9.665E-02
2058	2.126E+03	1.161E+06	7.804E+01	4.954E+00	1.382E+03	9.286E-02
2059	2.043E+03	1.116E+06	7.498E+01	4.760E+00	1.328E+03	8.922E-02
2060	1.963E+03	1.072E+06	7.204E+01	4.573E+00	1.276E+03	8.572E-02
2061	1.886E+03	1.030E+06	6.921E+01	4.394E+00	1.226E+03	8.236E-02
2062	1.812E+03	9.897E+05	6.650E+01	4.222E+00	1.178E+03	7.913E-02
2063	1.741E+03	9.509E+05	6.389E+01	4.056E+00	1.132E+03	7.603E-02
2064	1.672E+03	9.136E+05	6.139E+01	3.897E+00	1.087E+03	7.305E-02
2065	1.607E+03	8.778E+05	5.898E+01	3.744E+00	1.045E+03	7.018E-02
2066	1.544E+03	8.434E+05	5.667E+01	3.597E+00	1.004E+03	6.743E-02
2067	1.483E+03	8.103E+05	5.444E+01	3.456E+00	9.643E+02	6.479E-02
2068	1.425E+03	7.785E+05	5.231E+01	3.321E+00	9.265E+02	6.225E-02
2069	1.369E+03	7.480E+05	5.026E+01	3.191E+00	8.901E+02	5.981E-02
2070	1.316E+03	7.187E+05	4.829E+01	3.066E+00	8.552E+02	5.746E-02
2071	1.264E+03	6.905E+05	4.639E+01	2.945E+00	8.217E+02	5.521E-02
2072	1.214E+03	6.634E+05	4.458E+01	2.830E+00	7.895E+02	5.304E-02

Results (Continued)

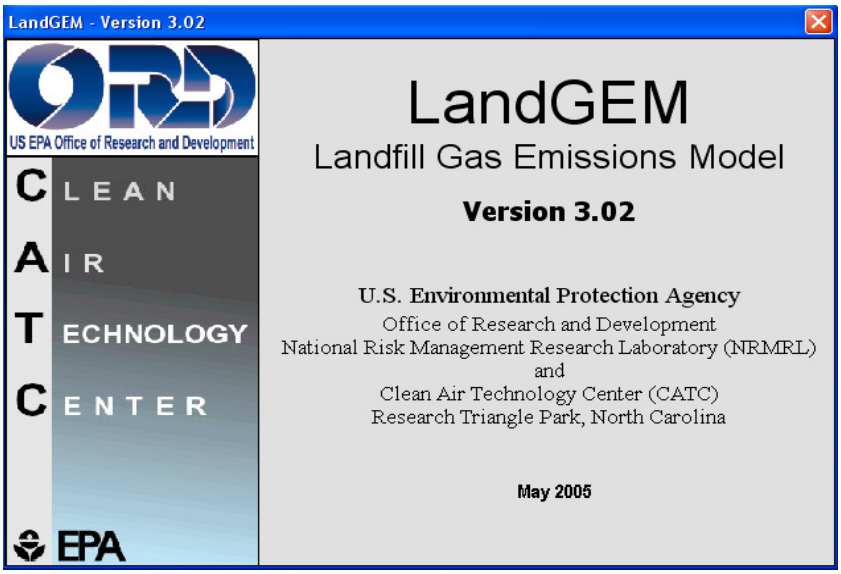
Year	Carbon dioxide			NMOC		
	(Mg/year)	*(m^3/year)*	*(av ft^3/min)*	*(Mg/year)*	*(m^3/year)*	*(av ft^3/min)*
2073	1.167E+03	6.374E+05	4.283E+01	2.719E+00	7.585E+02	5.096E-02
2074	1.121E+03	6.124E+05	4.115E+01	2.612E+00	7.288E+02	4.897E-02
2075	1.077E+03	5.884E+05	3.953E+01	2.510E+00	7.002E+02	4.705E-02
2076	1.035E+03	5.653E+05	3.798E+01	2.411E+00	6.727E+02	4.520E-02
2077	9.943E+02	5.432E+05	3.650E+01	2.317E+00	6.464E+02	4.343E-02
2078	9.553E+02	5.219E+05	3.506E+01	2.226E+00	6.210E+02	4.173E-02
2079	9.178E+02	5.014E+05	3.369E+01	2.139E+00	5.967E+02	4.009E-02
2080	8.818E+02	4.817E+05	3.237E+01	2.055E+00	5.733E+02	3.852E-02
2081	8.473E+02	4.629E+05	3.110E+01	1.974E+00	5.508E+02	3.701E-02
2082	8.140E+02	4.447E+05	2.988E+01	1.897E+00	5.292E+02	3.556E-02
2083	7.821E+02	4.273E+05	2.871E+01	1.823E+00	5.084E+02	3.416E-02
2084	7.514E+02	4.105E+05	2.758E+01	1.751E+00	4.885E+02	3.282E-02
2085	7.220E+02	3.944E+05	2.650E+01	1.682E+00	4.694E+02	3.154E-02
2086	6.937E+02	3.790E+05	2.546E+01	1.616E+00	4.510E+02	3.030E-02
2087	6.665E+02	3.641E+05	2.446E+01	1.553E+00	4.333E+02	2.911E-02
2088	6.403E+02	3.498E+05	2.350E+01	1.492E+00	4.163E+02	2.797E-02
2089	6.152E+02	3.361E+05	2.258E+01	1.434E+00	4.000E+02	2.687E-02
2090	5.911E+02	3.229E+05	2.170E+01	1.377E+00	3.843E+02	2.582E-02
2091	5.679E+02	3.103E+05	2.085E+01	1.323E+00	3.692E+02	2.481E-02
2092	5.457E+02	2.981E+05	2.003E+01	1.272E+00	3.547E+02	2.383E-02
2093	5.243E+02	2.864E+05	1.924E+01	1.222E+00	3.408E+02	2.290E-02
2094	5.037E+02	2.752E+05	1.849E+01	1.174E+00	3.275E+02	2.200E-02
2095	4.840E+02	2.644E+05	1.776E+01	1.128E+00	3.146E+02	2.114E-02
2096	4.650E+02	2.540E+05	1.707E+01	1.084E+00	3.023E+02	2.031E-02
2097	4.467E+02	2.441E+05	1.640E+01	1.041E+00	2.904E+02	1.951E-02
2098	4.292E+02	2.345E+05	1.576E+01	1.000E+00	2.790E+02	1.875E-02
2099	4.124E+02	2.253E+05	1.514E+01	9.610E-01	2.681E+02	1.801E-02
2100	3.962E+02	2.165E+05	1.454E+01	9.233E-01	2.576E+02	1.731E-02
2101	3.807E+02	2.080E+05	1.397E+01	8.871E-01	2.475E+02	1.663E-02
2102	3.658E+02	1.998E+05	1.343E+01	8.523E-01	2.378E+02	1.598E-02
2103	3.514E+02	1.920E+05	1.290E+01	8.189E-01	2.285E+02	1.535E-02
2104	3.376E+02	1.845E+05	1.239E+01	7.868E-01	2.195E+02	1.475E-02
2105	3.244E+02	1.772E+05	1.191E+01	7.559E-01	2.109E+02	1.417E-02
2106	3.117E+02	1.703E+05	1.144E+01	7.263E-01	2.026E+02	1.361E-02
2107	2.995E+02	1.636E+05	1.099E+01	6.978E-01	1.947E+02	1.308E-02
2108	2.877E+02	1.572E+05	1.056E+01	6.705E-01	1.870E+02	1.257E-02
2109	2.764E+02	1.510E+05	1.015E+01	6.442E-01	1.797E+02	1.207E-02
2110	2.656E+02	1.451E+05	9.749E+00	6.189E-01	1.727E+02	1.160E-02
2111	2.552E+02	1.394E+05	9.367E+00	5.946E-01	1.659E+02	1.115E-02
2112	2.452E+02	1.339E+05	9.000E+00	5.713E-01	1.594E+02	1.071E-02

INVENTORY

Landfill Name or Identifier: Sycamore Ridge Landfill

Enter year of emissions inventory: 2030

Gas / Pollutant	Emission Rate				
	(Mg/year)	*(m^3/year)*	*(av ft^3/min)*	*(ft^3/year)*	*(short tons/year)*
Total landfill gas	9.751E+04	7.808E+07	5.246E+03	2.757E+09	1.073E+05
Methane	2.605E+04	3.904E+07	2.623E+03	1.379E+09	2.865E+04
Carbon dioxide	7.146E+04	3.904E+07	2.623E+03	1.379E+09	7.861E+04
NMOC	1.665E+02	4.646E+04	3.122E+00	1.641E+06	1.832E+02
1,1,1-Trichloroethane (methyl chloroform) - HAP	2.080E-01	3.748E+01	2.518E-03	1.324E+03	2.288E-01
1,1,2,2-Tetrachloroethane - HAP/VOC	5.996E-01	8.589E+01	5.771E-03	3.033E+03	6.596E-01
1,1-Dichloroethane (ethylidene dichloride) - HAP/VOC	7.714E-01	1.874E+02	1.259E-02	6.618E+03	8.485E-01
1,1-Dichloroethene (vinylidene chloride) - HAP/VOC	6.296E-02	1.562E+01	1.049E-03	5.515E+02	6.926E-02
1,2-Dichloroethane (ethylene dichloride) - HAP/VOC	1.318E-01	3.201E+01	2.151E-03	1.131E+03	1.449E-01
1,2-Dichloropropane (propylene dichloride) - HAP/VOC	6.605E-02	1.405E+01	9.443E-04	4.963E+02	7.266E-02
2-Propanol (isopropyl alcohol) - VOC	9.761E+00	3.904E+03	2.623E-01	1.379E+05	1.074E+01
Acetone	1.320E+00	5.466E+02	3.672E-02	1.930E+04	1.452E+00
Acrylonitrile - HAP/VOC	1.086E+00	4.919E+02	3.305E-02	1.737E+04	1.194E+00
Benzene - No or Unknown Co-disposal - HAP/VOC	4.820E-01	1.484E+02	9.968E-03	5.239E+03	5.302E-01
Benzene - Co-disposal - HAP/VOC	2.790E+00	8.589E+02	5.771E-02	3.033E+04	3.069E+00
Bromodichloromethane - VOC	1.649E+00	2.420E+02	1.626E-02	8.548E+03	1.814E+00
Butane - VOC	9.437E-01	3.904E+02	2.623E-02	1.379E+04	1.038E+00
Carbon disulfide - HAP/VOC	1.434E-01	4.529E+01	3.043E-03	1.599E+03	1.577E-01
Carbon monoxide	1.274E+01	1.093E+04	7.345E-01	3.860E+05	1.401E+01
Carbon tetrachloride - HAP/VOC	1.998E-03	3.123E-01	2.098E-05	1.103E+01	2.198E-03
Carbonyl sulfide - HAP/VOC	9.559E-02	3.826E+01	2.571E-03	1.351E+03	1.051E-01
Chlorobenzene - HAP/VOC	9.139E-02	1.952E+01	1.312E-03	6.894E+02	1.005E-01
Chlorodifluoromethane	3.651E-01	1.015E+02	6.820E-03	3.585E+03	4.016E-01
Chloroethane (ethyl chloride) - HAP/VOC	2.724E-01	1.015E+02	6.820E-03	3.585E+03	2.996E-01
Chloroform - HAP/VOC	1.163E-02	2.342E+00	1.574E-04	8.272E+01	1.280E-02
Chloromethane - VOC	1.968E-01	9.370E+01	6.295E-03	3.309E+03	2.164E-01
Dichlorobenzene - (HAP for para isomer/VOC)	1.003E-01	1.640E+01	1.102E-03	5.791E+02	1.103E-01
Dichlorodifluoromethane	6.283E+00	1.249E+03	8.394E-02	4.412E+04	6.911E+00
Dichlorofluoromethane - VOC	8.690E-01	2.030E+02	1.364E-02	7.169E+03	9.559E-01
Dichloromethane (methylene chloride) - HAP	3.862E+00	1.093E+03	7.345E-02	3.860E+04	4.248E+00
Dimethyl sulfide (methyl sulfide) - VOC	1.574E+00	6.090E+02	4.092E-02	2.151E+04	1.731E+00
Ethane	8.691E+01	6.949E+04	4.669E+00	2.454E+06	9.560E+01
Ethanol - VOC	4.041E+00	2.108E+03	1.416E-01	7.445E+04	4.445E+00
Ethyl mercaptan (ethanethiol) - VOC	4.641E-01	1.796E+02	1.207E-02	6.342E+03	5.105E-01
Ethylbenzene - HAP/VOC	1.586E+00	3.592E+02	2.413E-02	1.268E+04	1.745E+00
Ethylene dibromide - HAP/VOC	6.102E-04	7.808E-02	5.246E-06	2.757E+00	6.712E-04
Fluorotrichloromethane - VOC	3.391E-01	5.934E+01	3.987E-03	2.096E+03	3.730E-01
Hexane - HAP/VOC	1.847E+00	5.153E+02	3.463E-02	1.820E+04	2.032E+00
Hydrogen sulfide	3.984E+00	2.811E+03	1.889E-01	9.927E+04	4.383E+00
Mercury (total) - HAP	1.889E-04	2.264E-02	1.521E-06	7.996E-01	2.078E-04
Methyl ethyl ketone - HAP/VOC	1.663E+00	5.544E+02	3.725E-02	1.958E+04	1.829E+00
Methyl isobutyl ketone - HAP/VOC	6.180E-01	1.484E+02	9.968E-03	5.239E+03	6.798E-01
Methyl mercaptan - VOC	3.906E-01	1.952E+02	1.312E-02	6.894E+03	4.297E-01
Pentane - VOC	7.732E-01	2.577E+02	1.731E-02	9.099E+03	8.506E-01
Perchloroethylene (tetrachloroethylene) - HAP	1.993E+00	2.889E+02	1.941E-02	1.020E+04	2.192E+00
Propane - VOC	1.575E+00	8.589E+02	5.771E-02	3.033E+04	1.733E+00
t-1,2-Dichloroethene - VOC	8.815E-01	2.186E+02	1.469E-02	7.721E+03	9.696E-01
Toluene - No or Unknown Co-disposal - HAP/VOC	1.167E+01	3.045E+03	2.046E-01	1.075E+05	1.284E+01
Toluene - Co-disposal - HAP/VOC	5.086E+01	1.327E+04	8.919E-01	4.688E+05	5.595E+01
Trichloroethylene (trichloroethene) - HAP/VOC	1.195E+00	2.186E+02	1.469E-02	7.721E+03	1.314E+00
Vinyl chloride - HAP/VOC	1.482E+00	5.700E+02	3.830E-02	2.013E+04	1.630E+00
Xylenes - HAP/VOC	4.137E+00	9.370E+02	6.295E-02	3.309E+04	4.551E+00



Summary Report

Landfill Name or Identifier: Sycamore Ridge Landfill

Date: Wednesday, September 28, 2016

Description/Comments:

About LandGEM:

First-Order Decomposition Rate Equation:

$$Q_{CH_4} = \sum_{i=1}^{n} \sum_{j=0.1}^{1} k L_o \left(\frac{M_i}{10} \right) e^{-k t_{ij}}$$

Where,

Q_{CH4} = annual methane generation in the year of the calculation *(m^3/year)*
i = 1-year time increment
n = (year of the calculation) - (initial year of waste acceptance)
j = 0.1-year time increment
k = methane generation rate (*$year^{-1}$*)
L_o = potential methane generation capacity (*m^3/Mg*)

M_i = mass of waste accepted in the ith year (*Mg*)
t_{ij} = age of the jth section of waste mass M_i accepted in the ith year (*decimal years*, e.g., 3.2 years)

LandGEM is based on a first-order decomposition rate equation for quantifying emissions from the decomposition of landfilled waste in municipal solid waste (MSW) landfills. The software provides a relatively simple approach to estimating landfill gas emissions. Model defaults are based on empirical data from U.S. landfills. Field test data can also be used in place of model defaults when available. Further guidance on EPA test methods, Clean Air Act (CAA) regulations, and other guidance regarding landfill gas emissions and control technology requirements can be found at http://www.epa.gov/ttnatw01/landfill/landflpg.html.

LandGEM is considered a screening tool — the better the input data, the better the estimates. Often, there are limitations with the available data regarding waste quantity and composition, variation in design and operating practices over time, and changes occurring over time that impact the emissions potential. Changes to landfill operation, such as operating under wet conditions through leachate recirculation or other liquid additions, will result in generating more gas at a faster rate. Defaults for estimating emissions for this type of operation are being developed to include in LandGEM along with defaults for convential landfills (no leachate or liquid additions) for developing emission inventories and determining CAA applicability. Refer to the Web site identified above for future updates.

Input Review

LANDFILL CHARACTERISTICS

Landfill Open Year	**2003**	
Landfill Closure Year (with 80-year limit)	**2030**	
Actual Closure Year (without limit)	***2030***	
Have Model Calculate Closure Year?	**Yes**	
Waste Design Capacity	**17,003,782**	*megagrams*

MODEL PARAMETERS

Methane Generation Rate, k	**0.040**	*$year^{-1}$*
Potential Methane Generation Capacity, L_o	**100**	*m^3/Mg*
NMOC Concentration	**595**	*ppmv as hexane*
Methane Content	**50**	*% by volume*

GASES / POLLUTANTS SELECTED

Gas / Pollutant #1:	**Total landfill gas**
Gas / Pollutant #2:	**Methane**
Gas / Pollutant #3:	**Carbon dioxide**
Gas / Pollutant #4:	**NMOC**

WASTE ACCEPTANCE RATES

Year	Waste Accepted		Waste-In-Place	
	(Mg/year)	*(short tons/year)*	*(Mg)*	*(short tons)*
2003	761,262	837,388	0	0
2004	936,318	1,029,950	761,262	837,388
2005	1,035,973	1,139,570	1,697,580	1,867,338
2006	995,433	1,094,976	2,733,553	3,006,908
2007	983,135	1,081,449	3,728,986	4,101,885
2008	941,644	1,035,808	4,712,121	5,183,333
2009	779,123	857,035	5,653,765	6,219,142
2010	555,169	610,686	6,432,888	7,076,177
2011	521,642	573,806	6,988,057	7,686,863
2012	500,305	550,336	7,509,699	8,260,669
2013	576,188	633,807	8,010,004	8,811,004
2014	450,358	495,394	8,586,192	9,444,811
2015	440,378	484,416	9,036,550	9,940,205
2016	530,000	583,000	9,476,928	10,424,621
2017	530,000	583,000	10,006,928	11,007,621
2018	530,000	583,000	10,536,928	11,590,621
2019	530,000	583,000	11,066,928	12,173,621
2020	530,000	583,000	11,596,928	12,756,621
2021	530,000	583,000	12,126,928	13,339,621
2022	530,000	583,000	12,656,928	13,922,621
2023	530,000	583,000	13,186,928	14,505,621
2024	530,000	583,000	13,716,928	15,088,621
2025	530,000	583,000	14,246,928	15,671,621
2026	530,000	583,000	14,776,928	16,254,621
2027	530,000	583,000	15,306,928	16,837,621
2028	530,000	583,000	15,836,928	17,420,621
2029	530,000	583,000	16,366,928	18,003,621
2030	106,854	117,539	16,896,928	18,586,621
2031	0	0	17,003,782	18,704,160
2032	0	0	17,003,782	18,704,160
2033	0	0	17,003,782	18,704,160
2034	0	0	17,003,782	18,704,160
2035	0	0	17,003,782	18,704,160
2036	0	0	17,003,782	18,704,160
2037	0	0	17,003,782	18,704,160
2038	0	0	17,003,782	18,704,160
2039	0	0	17,003,782	18,704,160
2040	0	0	17,003,782	18,704,160
2041	0	0	17,003,782	18,704,160
2042	0	0	17,003,782	18,704,160

WASTE ACCEPTANCE RATES (Continued)

Year	Waste Accepted		Waste-In-Place	
	(Mg/year)	*(short tons/year)*	*(Mg)*	*(short tons)*
2043	0	0	17,003,782	18,704,160
2044	0	0	17,003,782	18,704,160
2045	0	0	17,003,782	18,704,160
2046	0	0	17,003,782	18,704,160
2047	0	0	17,003,782	18,704,160
2048	0	0	17,003,782	18,704,160
2049	0	0	17,003,782	18,704,160
2050	0	0	17,003,782	18,704,160
2051	0	0	17,003,782	18,704,160
2052	0	0	17,003,782	18,704,160
2053	0	0	17,003,782	18,704,160
2054	0	0	17,003,782	18,704,160
2055	0	0	17,003,782	18,704,160
2056	0	0	17,003,782	18,704,160
2057	0	0	17,003,782	18,704,160
2058	0	0	17,003,782	18,704,160
2059	0	0	17,003,782	18,704,160
2060	0	0	17,003,782	18,704,160
2061	0	0	17,003,782	18,704,160
2062	0	0	17,003,782	18,704,160
2063	0	0	17,003,782	18,704,160
2064	0	0	17,003,782	18,704,160
2065	0	0	17,003,782	18,704,160
2066	0	0	17,003,782	18,704,160
2067	0	0	17,003,782	18,704,160
2068	0	0	17,003,782	18,704,160
2069	0	0	17,003,782	18,704,160
2070	0	0	17,003,782	18,704,160
2071	0	0	17,003,782	18,704,160
2072	0	0	17,003,782	18,704,160
2073	0	0	17,003,782	18,704,160
2074	0	0	17,003,782	18,704,160
2075	0	0	17,003,782	18,704,160
2076	0	0	17,003,782	18,704,160
2077	0	0	17,003,782	18,704,160
2078	0	0	17,003,782	18,704,160
2079	0	0	17,003,782	18,704,160
2080	0	0	17,003,782	18,704,160
2081	0	0	17,003,782	18,704,160
2082	0	0	17,003,782	18,704,160

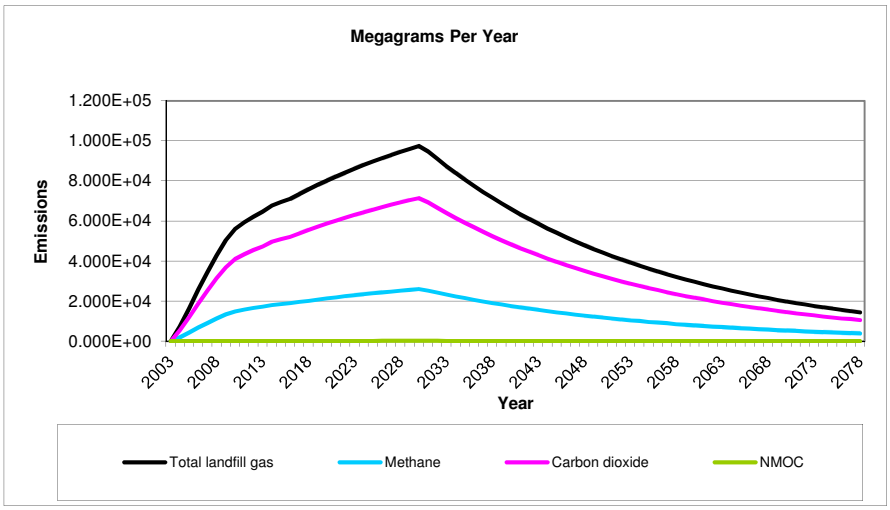
Pollutant Parameters

		Gas / Pollutant Default Parameters:		User-specified Pollutant Parameters:	
	Compound	Concentration (*ppmv*)	Molecular Weight	Concentration (*ppmv*)	Molecular Weight
Gases	Total landfill gas		0.00		
	Methane		16.04		
	Carbon dioxide		44.01		
	NMOC	4,000	86.18		
Pollutants	1,1,1-Trichloroethane (methyl chloroform) - HAP	0.48	133.41		
	1,1,2,2-Tetrachloroethane - HAP/VOC	1.1	167.85		
	1,1-Dichloroethane (ethylidene dichloride) - HAP/VOC	2.4	98.97		
	1,1-Dichloroethene (vinylidene chloride) - HAP/VOC	0.20	96.94		
	1,2-Dichloroethane (ethylene dichloride) - HAP/VOC	0.41	98.96		
	1,2-Dichloropropane (propylene dichloride) - HAP/VOC	0.18	112.99		
	2-Propanol (isopropyl alcohol) - VOC	50	60.11		
	Acetone	7.0	58.08		
	Acrylonitrile - HAP/VOC	6.3	53.06		
	Benzene - No or Unknown Co-disposal - HAP/VOC	1.9	78.11		
	Benzene - Co-disposal - HAP/VOC	11	78.11		
	Bromodichloromethane - VOC	3.1	163.83		
	Butane - VOC	5.0	58.12		
	Carbon disulfide - HAP/VOC	0.58	76.13		
	Carbon monoxide	140	28.01		
	Carbon tetrachloride - HAP/VOC	4.0E-03	153.84		
	Carbonyl sulfide - HAP/VOC	0.49	60.07		
	Chlorobenzene - HAP/VOC	0.25	112.56		
	Chlorodifluoromethane	1.3	86.47		
	Chloroethane (ethyl chloride) - HAP/VOC	1.3	64.52		
	Chloroform - HAP/VOC	0.03	119.39		
	Chloromethane - VOC	1.2	50.49		
	Dichlorobenzene - (HAP for para isomer/VOC)	0.21	147		
	Dichlorodifluoromethane	16	120.91		
	Dichlorofluoromethane - VOC	2.6	102.92		
	Dichloromethane (methylene chloride) - HAP	14	84.94		
	Dimethyl sulfide (methyl sulfide) - VOC	7.8	62.13		
	Ethane	890	30.07		
	Ethanol - VOC	27	46.08		

Pollutant Parameters (Continued)

	Gas / Pollutant Default Parameters:			User-specified Pollutant Parameters:	
	Compound	Concentration (*ppmv*)	Molecular Weight	Concentration (*ppmv*)	Molecular Weight
Pollutants	Ethyl mercaptan (ethanethiol) - VOC	2.3	62.13		
	Ethylbenzene - HAP/VOC	4.6	106.16		
	Ethylene dibromide - HAP/VOC	1.0E-03	187.88		
	Fluorotrichloromethane - VOC	0.76	137.38		
	Hexane - HAP/VOC	6.6	86.18		
	Hydrogen sulfide	36	34.08		
	Mercury (total) - HAP	2.9E-04	200.61		
	Methyl ethyl ketone - HAP/VOC	7.1	72.11		
	Methyl isobutyl ketone - HAP/VOC	1.9	100.16		
	Methyl mercaptan - VOC	2.5	48.11		
	Pentane - VOC	3.3	72.15		
	Perchloroethylene (tetrachloroethylene) - HAP	3.7	165.83		
	Propane - VOC	11	44.09		
	t-1,2-Dichloroethene - VOC	2.8	96.94		
	Toluene - No or Unknown Co-disposal - HAP/VOC	39	92.13		
	Toluene - Co-disposal - HAP/VOC	170	92.13		
	Trichloroethylene (trichloroethene) - HAP/VOC	2.8	131.40		
	Vinyl chloride - HAP/VOC	7.3	62.50		
	Xylenes - HAP/VOC	12	106.16		

Graphs


Megagrams Per Year
Emissions
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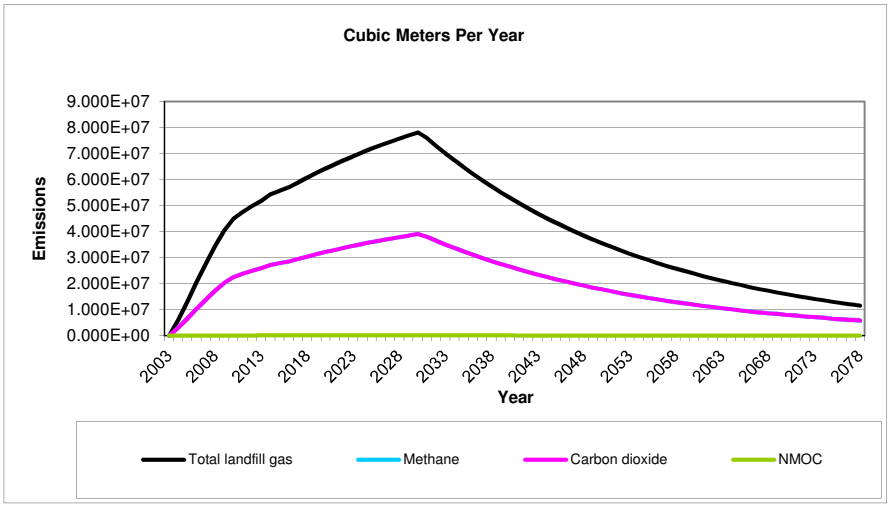
1.000E+05
8.000E+04
6.000E+04
4.000E+04
2.000E+04
0.000E+00
2003 2008 2013 2018 2023 2028 2033 2038 2043 2048 2053 2058 2063 2068 2073 2078
Year
Total landfill gas
Methane
Carbon dioxide
NMOC


Cubic Meters Per Year
Emissions
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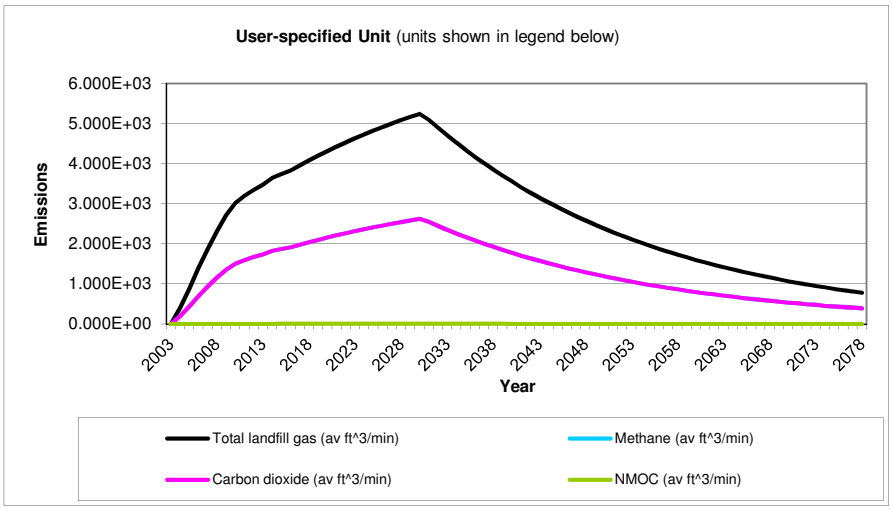
8.000E+07
7.000E+07
6.000E+07
5.000E+07
4.000E+07
3.000E+07
2.000E+07
1.000E+07
0.000E+00
2003 2008 2013 2018 2023 2028 2033 2038 2043 2048 2053 2058 2063 2068 2073 2078
Year
Total landfill gas
Methane
Carbon dioxide
NMOC


User-specified Unit (units shown in legend below)
Emissions
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5.000E+03
4.000E+03
3.000E+03
2.000E+03
1.000E+03
0.000E+00
2003 2008 2013 2018 2023 2028 2033 2038 2043 2048 2053 2058 2063 2068 2073 2078
Year
Total landfill gas (av ft^3/min)
Methane (av ft^3/min)
Carbon dioxide (av ft^3/min)
NMOC (av ft^3/min)

Results

Year	Total landfill gas			Methane		
	(Mg/year)	*(m^3/year)*	*(av ft^3/min)*	*(Mg/year)*	*(m^3/year)*	*(av ft^3/min)*
2003	0	0	0	0	0	0
2004	7.470E+03	5.982E+06	4.019E+02	1.995E+03	2.991E+06	2.010E+02
2005	1.637E+04	1.310E+07	8.805E+02	4.371E+03	6.552E+06	4.403E+02
2006	2.589E+04	2.073E+07	1.393E+03	6.915E+03	1.037E+07	6.965E+02
2007	3.464E+04	2.774E+07	1.864E+03	9.253E+03	1.387E+07	9.319E+02
2008	4.293E+04	3.438E+07	2.310E+03	1.147E+04	1.719E+07	1.155E+03
2009	5.049E+04	4.043E+07	2.716E+03	1.349E+04	2.021E+07	1.358E+03
2010	5.615E+04	4.497E+07	3.021E+03	1.500E+04	2.248E+07	1.511E+03
2011	5.940E+04	4.757E+07	3.196E+03	1.587E+04	2.378E+07	1.598E+03
2012	6.219E+04	4.980E+07	3.346E+03	1.661E+04	2.490E+07	1.673E+03
2013	6.466E+04	5.178E+07	3.479E+03	1.727E+04	2.589E+07	1.739E+03
2014	6.778E+04	5.428E+07	3.647E+03	1.810E+04	2.714E+07	1.823E+03
2015	6.954E+04	5.569E+07	3.742E+03	1.858E+04	2.784E+07	1.871E+03
2016	7.114E+04	5.696E+07	3.827E+03	1.900E+04	2.848E+07	1.914E+03
2017	7.355E+04	5.889E+07	3.957E+03	1.965E+04	2.945E+07	1.979E+03
2018	7.587E+04	6.075E+07	4.082E+03	2.026E+04	3.037E+07	2.041E+03
2019	7.809E+04	6.253E+07	4.202E+03	2.086E+04	3.127E+07	2.101E+03
2020	8.023E+04	6.424E+07	4.317E+03	2.143E+04	3.212E+07	2.158E+03
2021	8.229E+04	6.589E+07	4.427E+03	2.198E+04	3.295E+07	2.214E+03
2022	8.426E+04	6.747E+07	4.533E+03	2.251E+04	3.374E+07	2.267E+03
2023	8.616E+04	6.899E+07	4.635E+03	2.301E+04	3.450E+07	2.318E+03
2024	8.798E+04	7.045E+07	4.734E+03	2.350E+04	3.522E+07	2.367E+03
2025	8.973E+04	7.185E+07	4.828E+03	2.397E+04	3.593E+07	2.414E+03
2026	9.141E+04	7.320E+07	4.918E+03	2.442E+04	3.660E+07	2.459E+03
2027	9.303E+04	7.449E+07	5.005E+03	2.485E+04	3.725E+07	2.503E+03
2028	9.458E+04	7.574E+07	5.089E+03	2.526E+04	3.787E+07	2.544E+03
2029	9.608E+04	7.693E+07	5.169E+03	2.566E+04	3.847E+07	2.585E+03
2030	9.751E+04	7.808E+07	5.246E+03	2.605E+04	3.904E+07	2.623E+03
2031	9.473E+04	7.586E+07	5.097E+03	2.530E+04	3.793E+07	2.548E+03
2032	9.102E+04	7.288E+07	4.897E+03	2.431E+04	3.644E+07	2.449E+03
2033	8.745E+04	7.003E+07	4.705E+03	2.336E+04	3.501E+07	2.353E+03
2034	8.402E+04	6.728E+07	4.521E+03	2.244E+04	3.364E+07	2.260E+03
2035	8.073E+04	6.464E+07	4.343E+03	2.156E+04	3.232E+07	2.172E+03
2036	7.756E+04	6.211E+07	4.173E+03	2.072E+04	3.105E+07	2.087E+03
2037	7.452E+04	5.967E+07	4.009E+03	1.991E+04	2.984E+07	2.005E+03
2038	7.160E+04	5.733E+07	3.852E+03	1.912E+04	2.867E+07	1.926E+03
2039	6.879E+04	5.508E+07	3.701E+03	1.837E+04	2.754E+07	1.851E+03
2040	6.609E+04	5.292E+07	3.556E+03	1.765E+04	2.646E+07	1.778E+03
2041	6.350E+04	5.085E+07	3.417E+03	1.696E+04	2.542E+07	1.708E+03
2042	6.101E+04	4.886E+07	3.283E+03	1.630E+04	2.443E+07	1.641E+03
2043	5.862E+04	4.694E+07	3.154E+03	1.566E+04	2.347E+07	1.577E+03
2044	5.632E+04	4.510E+07	3.030E+03	1.504E+04	2.255E+07	1.515E+03
2045	5.411E+04	4.333E+07	2.911E+03	1.445E+04	2.167E+07	1.456E+03
2046	5.199E+04	4.163E+07	2.797E+03	1.389E+04	2.082E+07	1.399E+03
2047	4.995E+04	4.000E+07	2.688E+03	1.334E+04	2.000E+07	1.344E+03
2048	4.799E+04	3.843E+07	2.582E+03	1.282E+04	1.922E+07	1.291E+03
2049	4.611E+04	3.692E+07	2.481E+03	1.232E+04	1.846E+07	1.240E+03
2050	4.430E+04	3.548E+07	2.384E+03	1.183E+04	1.774E+07	1.192E+03
2051	4.257E+04	3.409E+07	2.290E+03	1.137E+04	1.704E+07	1.145E+03
2052	4.090E+04	3.275E+07	2.200E+03	1.092E+04	1.637E+07	1.100E+03

Results (Continued)

Year	Total landfill gas			Methane		
	(Mg/year)	*(m^3/year)*	*(av ft^3/min)*	*(Mg/year)*	*(m^3/year)*	*(av ft^3/min)*
2053	3.929E+04	3.146E+07	2.114E+03	1.050E+04	1.573E+07	1.057E+03
2054	3.775E+04	3.023E+07	2.031E+03	1.008E+04	1.512E+07	1.016E+03
2055	3.627E+04	2.905E+07	1.952E+03	9.689E+03	1.452E+07	9.758E+02
2056	3.485E+04	2.791E+07	1.875E+03	9.309E+03	1.395E+07	9.375E+02
2057	3.348E+04	2.681E+07	1.802E+03	8.944E+03	1.341E+07	9.008E+02
2058	3.217E+04	2.576E+07	1.731E+03	8.593E+03	1.288E+07	8.654E+02
2059	3.091E+04	2.475E+07	1.663E+03	8.256E+03	1.238E+07	8.315E+02
2060	2.970E+04	2.378E+07	1.598E+03	7.933E+03	1.189E+07	7.989E+02
2061	2.853E+04	2.285E+07	1.535E+03	7.622E+03	1.142E+07	7.676E+02
2062	2.741E+04	2.195E+07	1.475E+03	7.323E+03	1.098E+07	7.375E+02
2063	2.634E+04	2.109E+07	1.417E+03	7.036E+03	1.055E+07	7.086E+02
2064	2.531E+04	2.026E+07	1.362E+03	6.760E+03	1.013E+07	6.808E+02
2065	2.431E+04	1.947E+07	1.308E+03	6.495E+03	9.735E+06	6.541E+02
2066	2.336E+04	1.871E+07	1.257E+03	6.240E+03	9.353E+06	6.284E+02
2067	2.245E+04	1.797E+07	1.208E+03	5.995E+03	8.987E+06	6.038E+02
2068	2.157E+04	1.727E+07	1.160E+03	5.760E+03	8.634E+06	5.801E+02
2069	2.072E+04	1.659E+07	1.115E+03	5.534E+03	8.296E+06	5.574E+02
2070	1.991E+04	1.594E+07	1.071E+03	5.317E+03	7.970E+06	5.355E+02
2071	1.913E+04	1.532E+07	1.029E+03	5.109E+03	7.658E+06	5.145E+02
2072	1.838E+04	1.472E+07	9.887E+02	4.909E+03	7.358E+06	4.944E+02
2073	1.766E+04	1.414E+07	9.499E+02	4.716E+03	7.069E+06	4.750E+02
2074	1.696E+04	1.358E+07	9.127E+02	4.531E+03	6.792E+06	4.563E+02
2075	1.630E+04	1.305E+07	8.769E+02	4.354E+03	6.526E+06	4.385E+02
2076	1.566E+04	1.254E+07	8.425E+02	4.183E+03	6.270E+06	4.213E+02
2077	1.505E+04	1.205E+07	8.095E+02	4.019E+03	6.024E+06	4.047E+02
2078	1.446E+04	1.158E+07	7.777E+02	3.861E+03	5.788E+06	3.889E+02
2079	1.389E+04	1.112E+07	7.472E+02	3.710E+03	5.561E+06	3.736E+02
2080	1.334E+04	1.069E+07	7.179E+02	3.564E+03	5.343E+06	3.590E+02
2081	1.282E+04	1.027E+07	6.898E+02	3.425E+03	5.133E+06	3.449E+02
2082	1.232E+04	9.864E+06	6.627E+02	3.290E+03	4.932E+06	3.314E+02
2083	1.184E+04	9.477E+06	6.368E+02	3.161E+03	4.739E+06	3.184E+02
2084	1.137E+04	9.105E+06	6.118E+02	3.037E+03	4.553E+06	3.059E+02
2085	1.093E+04	8.748E+06	5.878E+02	2.918E+03	4.374E+06	2.939E+02
2086	1.050E+04	8.405E+06	5.648E+02	2.804E+03	4.203E+06	2.824E+02
2087	1.009E+04	8.076E+06	5.426E+02	2.694E+03	4.038E+06	2.713E+02
2088	9.690E+03	7.759E+06	5.213E+02	2.588E+03	3.880E+06	2.607E+02
2089	9.310E+03	7.455E+06	5.009E+02	2.487E+03	3.727E+06	2.504E+02
2090	8.945E+03	7.163E+06	4.813E+02	2.389E+03	3.581E+06	2.406E+02
2091	8.594E+03	6.882E+06	4.624E+02	2.296E+03	3.441E+06	2.312E+02
2092	8.257E+03	6.612E+06	4.443E+02	2.206E+03	3.306E+06	2.221E+02
2093	7.933E+03	6.353E+06	4.268E+02	2.119E+03	3.176E+06	2.134E+02
2094	7.622E+03	6.104E+06	4.101E+02	2.036E+03	3.052E+06	2.050E+02
2095	7.323E+03	5.864E+06	3.940E+02	1.956E+03	2.932E+06	1.970E+02
2096	7.036E+03	5.634E+06	3.786E+02	1.879E+03	2.817E+06	1.893E+02
2097	6.760E+03	5.413E+06	3.637E+02	1.806E+03	2.707E+06	1.819E+02
2098	6.495E+03	5.201E+06	3.495E+02	1.735E+03	2.601E+06	1.747E+02
2099	6.241E+03	4.997E+06	3.358E+02	1.667E+03	2.499E+06	1.679E+02
2100	5.996E+03	4.801E+06	3.226E+02	1.602E+03	2.401E+06	1.613E+02
2101	5.761E+03	4.613E+06	3.099E+02	1.539E+03	2.306E+06	1.550E+02
2102	5.535E+03	4.432E+06	2.978E+02	1.478E+03	2.216E+06	1.489E+02
2103	5.318E+03	4.258E+06	2.861E+02	1.420E+03	2.129E+06	1.431E+02

Results (Continued)

Year	Total landfill gas			Methane		
	(Mg/year)	*(m^3/year)*	*(av ft^3/min)*	*(Mg/year)*	*(m^3/year)*	*(av ft^3/min)*
2104	5.109E+03	4.091E+06	2.749E+02	1.365E+03	2.046E+06	1.374E+02
2105	4.909E+03	3.931E+06	2.641E+02	1.311E+03	1.965E+06	1.321E+02
2106	4.717E+03	3.777E+06	2.538E+02	1.260E+03	1.888E+06	1.269E+02
2107	4.532E+03	3.629E+06	2.438E+02	1.210E+03	1.814E+06	1.219E+02
2108	4.354E+03	3.486E+06	2.343E+02	1.163E+03	1.743E+06	1.171E+02
2109	4.183E+03	3.350E+06	2.251E+02	1.117E+03	1.675E+06	1.125E+02
2110	4.019E+03	3.218E+06	2.162E+02	1.074E+03	1.609E+06	1.081E+02
2111	3.862E+03	3.092E+06	2.078E+02	1.031E+03	1.546E+06	1.039E+02
2112	3.710E+03	2.971E+06	1.996E+02	9.910E+02	1.485E+06	9.981E+01
2113	3.565E+03	2.854E+06	1.918E+02	9.522E+02	1.427E+06	9.589E+01
2114	3.425E+03	2.743E+06	1.843E+02	9.148E+02	1.371E+06	9.213E+01
2115	3.291E+03	2.635E+06	1.770E+02	8.790E+02	1.317E+06	8.852E+01
2116	3.162E+03	2.532E+06	1.701E+02	8.445E+02	1.266E+06	8.505E+01
2117	3.038E+03	2.432E+06	1.634E+02	8.114E+02	1.216E+06	8.172E+01
2118	2.919E+03	2.337E+06	1.570E+02	7.796E+02	1.169E+06	7.851E+01
2119	2.804E+03	2.245E+06	1.509E+02	7.490E+02	1.123E+06	7.543E+01
2120	2.694E+03	2.157E+06	1.450E+02	7.196E+02	1.079E+06	7.248E+01
2121	2.588E+03	2.073E+06	1.393E+02	6.914E+02	1.036E+06	6.963E+01
2122	2.487E+03	1.991E+06	1.338E+02	6.643E+02	9.957E+05	6.690E+01
2123	2.389E+03	1.913E+06	1.286E+02	6.383E+02	9.567E+05	6.428E+01
2124	2.296E+03	1.838E+06	1.235E+02	6.132E+02	9.192E+05	6.176E+01
2125	2.206E+03	1.766E+06	1.187E+02	5.892E+02	8.831E+05	5.934E+01
2126	2.119E+03	1.697E+06	1.140E+02	5.661E+02	8.485E+05	5.701E+01
2127	2.036E+03	1.630E+06	1.096E+02	5.439E+02	8.152E+05	5.478E+01
2128	1.956E+03	1.567E+06	1.053E+02	5.226E+02	7.833E+05	5.263E+01
2129	1.880E+03	1.505E+06	1.011E+02	5.021E+02	7.526E+05	5.056E+01
2130	1.806E+03	1.446E+06	9.716E+01	4.824E+02	7.231E+05	4.858E+01
2131	1.735E+03	1.389E+06	9.335E+01	4.635E+02	6.947E+05	4.668E+01
2132	1.667E+03	1.335E+06	8.969E+01	4.453E+02	6.675E+05	4.485E+01
2133	1.602E+03	1.283E+06	8.618E+01	4.278E+02	6.413E+05	4.309E+01
2134	1.539E+03	1.232E+06	8.280E+01	4.111E+02	6.161E+05	4.140E+01
2135	1.479E+03	1.184E+06	7.955E+01	3.949E+02	5.920E+05	3.978E+01
2136	1.421E+03	1.138E+06	7.643E+01	3.795E+02	5.688E+05	3.822E+01
2137	1.365E+03	1.093E+06	7.343E+01	3.646E+02	5.465E+05	3.672E+01
2138	1.311E+03	1.050E+06	7.056E+01	3.503E+02	5.250E+05	3.528E+01
2139	1.260E+03	1.009E+06	6.779E+01	3.365E+02	5.045E+05	3.389E+01
2140	1.211E+03	9.694E+05	6.513E+01	3.234E+02	4.847E+05	3.257E+01
2141	1.163E+03	9.313E+05	6.258E+01	3.107E+02	4.657E+05	3.129E+01
2142	1.117E+03	8.948E+05	6.012E+01	2.985E+02	4.474E+05	3.006E+01
2143	1.074E+03	8.597E+05	5.777E+01	2.868E+02	4.299E+05	2.888E+01

Results (Continued)

Year	Carbon dioxide			NMOC		
	(Mg/year)	*(m^3/year)*	*(av ft^3/min)*	*(Mg/year)*	*(m^3/year)*	*(av ft^3/min)*
2003	0	0	0	0	0	0
2004	5.475E+03	2.991E+06	2.010E+02	1.276E+01	3.559E+03	2.391E-01
2005	1.199E+04	6.552E+06	4.403E+02	2.795E+01	7.797E+03	5.239E-01
2006	1.897E+04	1.037E+07	6.965E+02	4.421E+01	1.234E+04	8.288E-01
2007	2.539E+04	1.387E+07	9.319E+02	5.916E+01	1.651E+04	1.109E+00
2008	3.146E+04	1.719E+07	1.155E+03	7.332E+01	2.045E+04	1.374E+00
2009	3.700E+04	2.021E+07	1.358E+03	8.623E+01	2.406E+04	1.616E+00
2010	4.116E+04	2.248E+07	1.511E+03	9.590E+01	2.675E+04	1.798E+00
2011	4.353E+04	2.378E+07	1.598E+03	1.014E+02	2.830E+04	1.902E+00
2012	4.558E+04	2.490E+07	1.673E+03	1.062E+02	2.963E+04	1.991E+00
2013	4.739E+04	2.589E+07	1.739E+03	1.104E+02	3.081E+04	2.070E+00
2014	4.968E+04	2.714E+07	1.823E+03	1.158E+02	3.229E+04	2.170E+00
2015	5.097E+04	2.784E+07	1.871E+03	1.188E+02	3.313E+04	2.226E+00
2016	5.214E+04	2.848E+07	1.914E+03	1.215E+02	3.389E+04	2.277E+00
2017	5.390E+04	2.945E+07	1.979E+03	1.256E+02	3.504E+04	2.354E+00
2018	5.560E+04	3.037E+07	2.041E+03	1.296E+02	3.615E+04	2.429E+00
2019	5.723E+04	3.127E+07	2.101E+03	1.334E+02	3.721E+04	2.500E+00
2020	5.880E+04	3.212E+07	2.158E+03	1.370E+02	3.823E+04	2.568E+00
2021	6.031E+04	3.295E+07	2.214E+03	1.405E+02	3.920E+04	2.634E+00
2022	6.175E+04	3.374E+07	2.267E+03	1.439E+02	4.015E+04	2.697E+00
2023	6.314E+04	3.450E+07	2.318E+03	1.471E+02	4.105E+04	2.758E+00
2024	6.448E+04	3.522E+07	2.367E+03	1.503E+02	4.192E+04	2.816E+00
2025	6.576E+04	3.593E+07	2.414E+03	1.532E+02	4.275E+04	2.873E+00
2026	6.700E+04	3.660E+07	2.459E+03	1.561E+02	4.355E+04	2.926E+00
2027	6.818E+04	3.725E+07	2.503E+03	1.589E+02	4.432E+04	2.978E+00
2028	6.932E+04	3.787E+07	2.544E+03	1.615E+02	4.506E+04	3.028E+00
2029	7.041E+04	3.847E+07	2.585E+03	1.641E+02	4.577E+04	3.076E+00
2030	7.146E+04	3.904E+07	2.623E+03	1.665E+02	4.646E+04	3.122E+00
2031	6.943E+04	3.793E+07	2.548E+03	1.618E+02	4.514E+04	3.033E+00
2032	6.671E+04	3.644E+07	2.449E+03	1.554E+02	4.337E+04	2.914E+00
2033	6.409E+04	3.501E+07	2.353E+03	1.493E+02	4.167E+04	2.800E+00
2034	6.158E+04	3.364E+07	2.260E+03	1.435E+02	4.003E+04	2.690E+00
2035	5.916E+04	3.232E+07	2.172E+03	1.379E+02	3.846E+04	2.584E+00
2036	5.684E+04	3.105E+07	2.087E+03	1.325E+02	3.695E+04	2.483E+00
2037	5.462E+04	2.984E+07	2.005E+03	1.273E+02	3.551E+04	2.386E+00
2038	5.247E+04	2.867E+07	1.926E+03	1.223E+02	3.411E+04	2.292E+00
2039	5.042E+04	2.754E+07	1.851E+03	1.175E+02	3.278E+04	2.202E+00
2040	4.844E+04	2.646E+07	1.778E+03	1.129E+02	3.149E+04	2.116E+00
2041	4.654E+04	2.542E+07	1.708E+03	1.084E+02	3.026E+04	2.033E+00
2042	4.472E+04	2.443E+07	1.641E+03	1.042E+02	2.907E+04	1.953E+00
2043	4.296E+04	2.347E+07	1.577E+03	1.001E+02	2.793E+04	1.877E+00
2044	4.128E+04	2.255E+07	1.515E+03	9.619E+01	2.683E+04	1.803E+00
2045	3.966E+04	2.167E+07	1.456E+03	9.241E+01	2.578E+04	1.732E+00
2046	3.810E+04	2.082E+07	1.399E+03	8.879E+01	2.477E+04	1.664E+00
2047	3.661E+04	2.000E+07	1.344E+03	8.531E+01	2.380E+04	1.599E+00
2048	3.517E+04	1.922E+07	1.291E+03	8.196E+01	2.287E+04	1.536E+00
2049	3.379E+04	1.846E+07	1.240E+03	7.875E+01	2.197E+04	1.476E+00
2050	3.247E+04	1.774E+07	1.192E+03	7.566E+01	2.111E+04	1.418E+00
2051	3.120E+04	1.704E+07	1.145E+03	7.270E+01	2.028E+04	1.363E+00
2052	2.997E+04	1.637E+07	1.100E+03	6.985E+01	1.949E+04	1.309E+00

Results (Continued)

Year	Carbon dioxide			NMOC		
	(Mg/year)	*(m^3/year)*	*(av ft^3/min)*	*(Mg/year)*	*(m^3/year)*	*(av ft^3/min)*
2053	2.880E+04	1.573E+07	1.057E+03	6.711E+01	1.872E+04	1.258E+00
2054	2.767E+04	1.512E+07	1.016E+03	6.448E+01	1.799E+04	1.209E+00
2055	2.658E+04	1.452E+07	9.758E+02	6.195E+01	1.728E+04	1.161E+00
2056	2.554E+04	1.395E+07	9.375E+02	5.952E+01	1.660E+04	1.116E+00
2057	2.454E+04	1.341E+07	9.008E+02	5.718E+01	1.595E+04	1.072E+00
2058	2.358E+04	1.288E+07	8.654E+02	5.494E+01	1.533E+04	1.030E+00
2059	2.265E+04	1.238E+07	8.315E+02	5.279E+01	1.473E+04	9.895E-01
2060	2.177E+04	1.189E+07	7.989E+02	5.072E+01	1.415E+04	9.507E-01
2061	2.091E+04	1.142E+07	7.676E+02	4.873E+01	1.359E+04	9.134E-01
2062	2.009E+04	1.098E+07	7.375E+02	4.682E+01	1.306E+04	8.776E-01
2063	1.930E+04	1.055E+07	7.086E+02	4.498E+01	1.255E+04	8.432E-01
2064	1.855E+04	1.013E+07	6.808E+02	4.322E+01	1.206E+04	8.101E-01
2065	1.782E+04	9.735E+06	6.541E+02	4.152E+01	1.158E+04	7.784E-01
2066	1.712E+04	9.353E+06	6.284E+02	3.990E+01	1.113E+04	7.478E-01
2067	1.645E+04	8.987E+06	6.038E+02	3.833E+01	1.069E+04	7.185E-01
2068	1.580E+04	8.634E+06	5.801E+02	3.683E+01	1.027E+04	6.904E-01
2069	1.519E+04	8.296E+06	5.574E+02	3.538E+01	9.872E+03	6.633E-01
2070	1.459E+04	7.970E+06	5.355E+02	3.400E+01	9.485E+03	6.373E-01
2071	1.402E+04	7.658E+06	5.145E+02	3.266E+01	9.113E+03	6.123E-01
2072	1.347E+04	7.358E+06	4.944E+02	3.138E+01	8.755E+03	5.883E-01
2073	1.294E+04	7.069E+06	4.750E+02	3.015E+01	8.412E+03	5.652E-01
2074	1.243E+04	6.792E+06	4.563E+02	2.897E+01	8.082E+03	5.430E-01
2075	1.194E+04	6.526E+06	4.385E+02	2.783E+01	7.765E+03	5.218E-01
2076	1.148E+04	6.270E+06	4.213E+02	2.674E+01	7.461E+03	5.013E-01
2077	1.103E+04	6.024E+06	4.047E+02	2.569E+01	7.168E+03	4.816E-01
2078	1.059E+04	5.788E+06	3.889E+02	2.469E+01	6.887E+03	4.628E-01
2079	1.018E+04	5.561E+06	3.736E+02	2.372E+01	6.617E+03	4.446E-01
2080	9.780E+03	5.343E+06	3.590E+02	2.279E+01	6.358E+03	4.272E-01
2081	9.396E+03	5.133E+06	3.449E+02	2.190E+01	6.108E+03	4.104E-01
2082	9.028E+03	4.932E+06	3.314E+02	2.104E+01	5.869E+03	3.943E-01
2083	8.674E+03	4.739E+06	3.184E+02	2.021E+01	5.639E+03	3.789E-01
2084	8.334E+03	4.553E+06	3.059E+02	1.942E+01	5.418E+03	3.640E-01
2085	8.007E+03	4.374E+06	2.939E+02	1.866E+01	5.205E+03	3.497E-01
2086	7.693E+03	4.203E+06	2.824E+02	1.793E+01	5.001E+03	3.360E-01
2087	7.391E+03	4.038E+06	2.713E+02	1.722E+01	4.805E+03	3.229E-01
2088	7.102E+03	3.880E+06	2.607E+02	1.655E+01	4.617E+03	3.102E-01
2089	6.823E+03	3.727E+06	2.504E+02	1.590E+01	4.436E+03	2.980E-01
2090	6.556E+03	3.581E+06	2.406E+02	1.528E+01	4.262E+03	2.863E-01
2091	6.299E+03	3.441E+06	2.312E+02	1.468E+01	4.095E+03	2.751E-01
2092	6.052E+03	3.306E+06	2.221E+02	1.410E+01	3.934E+03	2.643E-01
2093	5.814E+03	3.176E+06	2.134E+02	1.355E+01	3.780E+03	2.540E-01
2094	5.586E+03	3.052E+06	2.050E+02	1.302E+01	3.632E+03	2.440E-01
2095	5.367E+03	2.932E+06	1.970E+02	1.251E+01	3.489E+03	2.344E-01
2096	5.157E+03	2.817E+06	1.893E+02	1.202E+01	3.352E+03	2.252E-01
2097	4.955E+03	2.707E+06	1.819E+02	1.155E+01	3.221E+03	2.164E-01
2098	4.760E+03	2.601E+06	1.747E+02	1.109E+01	3.095E+03	2.079E-01
2099	4.574E+03	2.499E+06	1.679E+02	1.066E+01	2.973E+03	1.998E-01
2100	4.394E+03	2.401E+06	1.613E+02	1.024E+01	2.857E+03	1.919E-01
2101	4.222E+03	2.306E+06	1.550E+02	9.838E+00	2.745E+03	1.844E-01
2102	4.056E+03	2.216E+06	1.489E+02	9.453E+00	2.637E+03	1.772E-01
2103	3.897E+03	2.129E+06	1.431E+02	9.082E+00	2.534E+03	1.702E-01

Results (Continued)

Year	Carbon dioxide			NMOC		
	(Mg/year)	*(m^3/year)*	*(av ft^3/min)*	*(Mg/year)*	*(m^3/year)*	*(av ft^3/min)*
2104	3.745E+03	2.046E+06	1.374E+02	8.726E+00	2.434E+03	1.636E-01
2105	3.598E+03	1.965E+06	1.321E+02	8.384E+00	2.339E+03	1.571E-01
2106	3.457E+03	1.888E+06	1.269E+02	8.055E+00	2.247E+03	1.510E-01
2107	3.321E+03	1.814E+06	1.219E+02	7.739E+00	2.159E+03	1.451E-01
2108	3.191E+03	1.743E+06	1.171E+02	7.436E+00	2.074E+03	1.394E-01
2109	3.066E+03	1.675E+06	1.125E+02	7.144E+00	1.993E+03	1.339E-01
2110	2.946E+03	1.609E+06	1.081E+02	6.864E+00	1.915E+03	1.287E-01
2111	2.830E+03	1.546E+06	1.039E+02	6.595E+00	1.840E+03	1.236E-01
2112	2.719E+03	1.485E+06	9.981E+01	6.336E+00	1.768E+03	1.188E-01
2113	2.613E+03	1.427E+06	9.589E+01	6.088E+00	1.698E+03	1.141E-01
2114	2.510E+03	1.371E+06	9.213E+01	5.849E+00	1.632E+03	1.096E-01
2115	2.412E+03	1.317E+06	8.852E+01	5.620E+00	1.568E+03	1.053E-01
2116	2.317E+03	1.266E+06	8.505E+01	5.399E+00	1.506E+03	1.012E-01
2117	2.226E+03	1.216E+06	8.172E+01	5.188E+00	1.447E+03	9.724E-02
2118	2.139E+03	1.169E+06	7.851E+01	4.984E+00	1.391E+03	9.343E-02
2119	2.055E+03	1.123E+06	7.543E+01	4.789E+00	1.336E+03	8.977E-02
2120	1.974E+03	1.079E+06	7.248E+01	4.601E+00	1.284E+03	8.625E-02
2121	1.897E+03	1.036E+06	6.963E+01	4.421E+00	1.233E+03	8.286E-02
2122	1.823E+03	9.957E+05	6.690E+01	4.247E+00	1.185E+03	7.961E-02
2123	1.751E+03	9.567E+05	6.428E+01	4.081E+00	1.138E+03	7.649E-02
2124	1.683E+03	9.192E+05	6.176E+01	3.921E+00	1.094E+03	7.349E-02
2125	1.617E+03	8.831E+05	5.934E+01	3.767E+00	1.051E+03	7.061E-02
2126	1.553E+03	8.485E+05	5.701E+01	3.619E+00	1.010E+03	6.784E-02
2127	1.492E+03	8.152E+05	5.478E+01	3.477E+00	9.701E+02	6.518E-02
2128	1.434E+03	7.833E+05	5.263E+01	3.341E+00	9.321E+02	6.263E-02
2129	1.378E+03	7.526E+05	5.056E+01	3.210E+00	8.955E+02	6.017E-02
2130	1.324E+03	7.231E+05	4.858E+01	3.084E+00	8.604E+02	5.781E-02
2131	1.272E+03	6.947E+05	4.668E+01	2.963E+00	8.267E+02	5.555E-02
2132	1.222E+03	6.675E+05	4.485E+01	2.847E+00	7.943E+02	5.337E-02
2133	1.174E+03	6.413E+05	4.309E+01	2.735E+00	7.631E+02	5.127E-02
2134	1.128E+03	6.161E+05	4.140E+01	2.628E+00	7.332E+02	4.926E-02
2135	1.084E+03	5.920E+05	3.978E+01	2.525E+00	7.045E+02	4.733E-02
2136	1.041E+03	5.688E+05	3.822E+01	2.426E+00	6.768E+02	4.548E-02
2137	1.000E+03	5.465E+05	3.672E+01	2.331E+00	6.503E+02	4.369E-02
2138	9.611E+02	5.250E+05	3.528E+01	2.240E+00	6.248E+02	4.198E-02
2139	9.234E+02	5.045E+05	3.389E+01	2.152E+00	6.003E+02	4.033E-02
2140	8.872E+02	4.847E+05	3.257E+01	2.067E+00	5.768E+02	3.875E-02
2141	8.524E+02	4.657E+05	3.129E+01	1.986E+00	5.541E+02	3.723E-02
2142	8.190E+02	4.474E+05	3.006E+01	1.908E+00	5.324E+02	3.577E-02
2143	7.869E+02	4.299E+05	2.888E+01	1.834E+00	5.115E+02	3.437E-02

Indiana Department of Environmental Management
We Protect Hoosiers and Our Environment.
100 N. Senate Avenue • Indianapolis, IN 46204
(800) 451-6027 • (317) 232-8603 • www.idem.IN.gov

Michael R. Pence
Governor

Carol S. Comer
Commissioner

Notice of Public Comment

November 9, 2016
Sycamore Ridge Landfill
167-36980-00116

Dear Concerned Citizen(s):

You have been identified as someone who could potentially be affected by this proposed air permit. The Indiana Department of Environmental Management, in our ongoing efforts to better communicate with concerned citizens, invites your comment on the draft permit.

Enclosed is a Notice of Public Comment, which has been placed in the Legal Advertising section of your local newspaper. The application and supporting documentation for this proposed permit have been placed at the library indicated in the Notice. These documents more fully describe the project, the applicable air pollution control requirements and how the applicant will comply with these requirements.

If you would like to comment on this draft permit, please contact the person named in the enclosed Public Notice. Thank you for your interest in the Indiana's Air Permitting Program.

Please Note: *If you feel you have received this Notice in error, or would like to be removed from the Air Permits mailing list, please contact Patricia Pear with the Air Permits Administration Section at 1-800-451-6027, ext. 3-6875 or via e-mail at PPEAR@IDEM.IN.GOV. If you have recently moved and this Notice has been forwarded to you, please notify us of your new address and if you wish to remain on the mailing list. Mail that is returned to IDEM by the Post Office with a forwarding address in a different county will be removed from our list unless otherwise requested.*

Enclosure
PN AAA Cover.dot 2/17/2016

Indiana Department of Environmental Management
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Michael R. Pence
Governor

Carol S. Comer
Commissioner

November 9, 2016

Mr. Todd Hamilton
Sycamore Ridge Landfill
832 Langsdale Drive
Indianapolis, IN 46202

Re: Public Notice
Sycamore Ridge Landfill
Permit Level: Part 70 Operating Permit Renewal
Permit Number: 167-36980-00116

Dear Mr. Hamilton:

Enclosed is a copy of your draft Part 70 Operating Permit Renewal, Technical Support Document, emission calculations, and the Public Notice which will be printed in your local newspaper.

The Office of Air Quality (OAQ) has prepared two versions of the Public Notice Document. The abbreviated version will be published in the newspaper, and the more detailed version will be made available on the IDEM's website and provided to interested parties. Both versions are included for your reference. The OAQ has requested that the Tribune Star in Terre Haute, Indiana publish the abbreviated version of the public notice no later than November 12, 2016. You will not be responsible for collecting any comments, nor are you responsible for having the notice published in the newspaper.

OAQ has submitted the draft permit package to the Vigo County Public Library, One Library Square in Terre haute, Indiana. As a reminder, you are obligated by 326 IAC 2-1.1-6(c) to place a copy of the complete permit application at this library no later than ten (10) days after submittal of the application or additional information to our department. We highly recommend that even if you have already placed these materials at the library, that you confirm with the library that these materials are available for review and request that the library keep the materials available for review during the entire permitting process.

Please review the enclosed documents carefully. This is your opportunity to comment on the draft permit and notify the OAQ of any corrections that are needed before the final decision. Questions or comments about the enclosed documents should be directed to David Matousek, Indiana Department of Environmental Management, Office of Air Quality, 100 N. Senate Avenue, Indianapolis, Indiana, 46204 or call (800) 451-6027, and ask for extension 2-8253 or dial (317) 232-8253.

Sincerely,

Greg Hotopp

Greg Hotopp
Permits Branch
Office of Air Quality

Enclosures
PN Applicant Cover letter 2/17/2016

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Governor

Carol S. Comer
Commissioner

November 9, 2016

To: Vigo County Public Library

From: Matthew Stuckey, Branch Chief
Permits Branch
Office of Air Quality

Subject: **Important Information to Display Regarding a Public Notice for an Air Permit**

Applicant Name: Sycamore Ridge Landfill
Permit Number: 167-36980-00116

Enclosed is a copy of important information to make available to the public. This proposed project is regarding a source that may have the potential to significantly impact air quality. Librarians are encouraged to educate the public to make them aware of the availability of this information. The following information is enclosed for public reference at your library:

- Notice of a 30-day Period for Public Comment
- Request to publish the Notice of 30-day Period for Public Comment
- Draft Permit and Technical Support Document

You will not be responsible for collecting any comments from the citizens. Please refer all questions and request for the copies of any pertinent information to the person named below.

Members of your community could be very concerned in how these projects might affect them and their families. **Please make this information readily available until you receive a copy of the final package.**

If you have any questions concerning this public review process, please contact Joanne Smiddie-Brush, OAQ Permits Administration Section at 1-800-451-6027, extension 3-0185. Questions pertaining to the permit itself should be directed to the contact listed on the notice.

Enclosures
PN Library.dot 2/16/2016

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Michael R. Pence
Governor

Carol S. Comer
Commissioner

ATTENTION: PUBLIC NOTICES, LEGAL ADVERTISING

November 9, 2016

Tribune Star
PO Box 149
Terre Haute, IN 47808

Enclosed, please find one Indiana Department of Environmental Management Notice of Public Comment for Sycamore Ridge Landfill, Vigo County, Indiana.

Since our agency must comply with requirements which call for a Notice of Public Comment, we request that you print this notice one time, no later than November 12, 2016.

Please send a notarized form, clippings showing the date of publication, and the billing to the Indiana Department of Environmental Management, Accounting, Room N1345, 100 North Senate Avenue, Indianapolis, Indiana, 46204.

To ensure proper payment, please reference account # 100174737.

We are required by the Auditor's Office to request that you place the Federal ID Number on all claims. If you have any conflicts, questions, or problems with the publishing of this notice or if you do not receive complete public notice information for this notice, please call Greg Hotopp at 800-451-6027 and ask for extension 4-3493 or dial 317-234-3493.

Sincerely,

Greg Hotopp

Greg Hotopp
Permit Branch
Office of Air Quality

Permit Level: Part 70 Operating Permit Renewal
Permit Number: 167-36980-00116

Enclosure

PN Newspaper.dot 2/17/2016

Mail Code 61-53

IDEM Staff	GHOTOPP 11/9/2016 Sycamore Ridge Landfill 167-36980-00116 Draft			AFFIX STAMP HERE IF USED AS CERTIFICATE OF MAILING
Name and address of Sender	▶	Indiana Department of Environmental Management Office of Air Quality – Permits Branch 100 N. Senate Indianapolis, IN 46204	Type of Mail: **CERTIFICATE OF MAILING ONLY**	

Line	Article Number	Name, Address, Street and Post Office Address	Postage	Handing Charges	Act. Value (If Registered)	Insured Value	Due Send if COD	R.R. Fee	S.D. Fee	S.H. Fee	Rest. Del. Fee Remarks
1		Todd Hamilton Sycamore Ridge Landfill 832 Langsdale Dr Indianapolis IN 46202 (Source CAATS)									
2		Brent Goodsell Sycamore Ridge Landfill 832 Langsdale Dr Indianapolis IN 46202 *(RO CAATS)*									
3		Vigo County Board of Commissioners County Annex, 121 Oak Street Terre Haute IN 47807 *(Local Official)*									
4		Terre Haute City Council and Mayors Office 17 Harding Ave Terre Haute IN 47807 *(Local Official)*									
5		Vigo County Health Department 147 Oak Street Terre Haute IN 47807 *(Health Department)*									
6		Vigo Co Public Library 1 Library Square Terre Haute IN 47807-3609 *(Library)*									
7		J.P. Roehm PO Box 303 Clinton IN 47842 *(Affected Party)*									
8		Andrew Perdue Weaver Consultants Group 35 E Wacker Drive Suite 1250 Chicago IL 60601 *(Consultant)*									
9											
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