



Indiana Department of Environmental Management

We Protect Hoosiers and Our Environment.

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Michael R. Pence
Governor

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Commissioner

NOTICE OF 30-DAY PERIOD FOR PUBLIC COMMENT

Preliminary Findings Regarding a
Significant Modification to a Part 70 Operating Permit
and the Renewal of a Part 70 Operating Permit

for Newton County Landfill in Newton County

Part 70 Operating Permit Renewal No.: T111-35606-00017

Significant Source Modification No.: 111-35382-00017

The Indiana Department of Environmental Management (IDEM) has reviewed several applications from Newton County Landfill, located at 2266 East 500 South Road, Brook, Indiana 47922. IDEM, OAQ received permit applications from the landfill on October 22, 2014, January 21, 2015, February 5, 2015, March 18, 2015, October 5, 2015, December 9, 2015, December 28, 2015, January 21, 2016, January 26, 2016, March 7, 2016, April 1, 2016, April 29, 2016, May 16, 2016, and May 26, 2016. If approved by IDEM's Office of Air Quality (OAQ), these proposed modifications would allow Newton County Landfill to make certain changes at its existing source. In addition to the renewal of the Part 70 Operating Permit, Newton County Landfill applied to construct and operate a 5,500 SCFM landfill gas fired flare, to increase the permitted mass capacity but not volume capacity of the municipal solid waste landfill in accordance with 326 IAC 2-7-10.5 to 102,030,469 Mg, to revise emission unit descriptive information, to add an odor control device to an existing leachate storage tank, to add a 250,000 gallon a day leachate treatment system, to request a higher operating value for temperature and oxygen for several active landfill gas collection system components along with the permanent abandonment of others.

The applicant intends to construct and operate new equipment that will emit air pollutants; therefore, the permit contains new or different permit conditions. In addition, some conditions from previously issued permits/approvals have been corrected, changed, or removed. These corrections, changes, and removals may include Title I changes. IDEM has reviewed this application and has developed preliminary findings, consisting of a draft permit and several supporting documents, which would allow the applicant to make this change. IDEM is aware that the 5,500 SCFM enclosed landfill gas flare has been constructed and operated prior to receipt of the proper permit. IDEM is reviewing this matter and will take appropriate action. This draft significant source modification and renewal contains provisions to bring unpermitted equipment into compliance with construction and operation permit rules.

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

Brook Iroquois Township Library
100 West Main Street
Brook, Indiana 47922

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 numbers 111-35382-00017 and T111-35606-00017 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

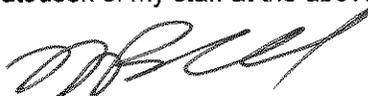
All comments will be considered by IDEM when we make a decision to issue or deny the permit. Comments that are most likely to affect final permit decisions are those based on the rules and laws governing this permitting process (326 IAC 2), air quality issues, and technical issues. IDEM does not have 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

**Newton County Landfill
2266 East 500 South Road
Brook, Indiana 47922**

(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.: T111-35606-00017	
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 through A.4 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:	2266 East 500 South Road, Brook, Indiana 47922
General Source Phone Number:	(708) 896-0990
SIC Code:	4953 (Refuse Systems)
County Location:	Newton County, Jackson Township
Source Location Status:	Attainment for all criteria pollutants
Source Status:	Part 70 Operating Permit Program Minor Source, under PSD Major Source, Section 112 of the Clean Air Act

A.2 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, identified as emissions unit #1, constructed in 1995 and modified in 2006 in accordance with 40 CFR 60, Subpart WWW, and approved for modification in 2006 and 2016 in accordance with 326 IAC 2-7-10.5, but not 40 CFR 60, Subpart WWW, with a maximum design capacity of 102,030,469 megagrams (Mg) and 124,965,933 bank cubic yards. The landfill includes a gas treatment system installed in 2009. Landfill gas is sent offsite for sale or use and/or is combusted in one (1) or more of the enclosed combustors (emission units #3 and #4 and the leachate evaporator). [40 CFR 60, Subpart WWW] [40 CFR 63, Subpart AAAA] [40 CFR 61, Subpart M]
- (b) One (1) enclosed combustor for landfill gas combustion, identified as emissions unit #3, constructed in 2006, with a maximum capacity of 6,000 SCFM. [40 CFR 60, Subpart WWW] [40 CFR 63, Subpart AAAA]
- (c) One (1) enclosed combustor for landfill gas combustion, identified as emission unit #4, constructed in 2012, with a maximum capacity of 5,500 SCFM. [40 CFR 60, Subpart WWW] [40 CFR 63, Subpart AAAA]
- (d) One (1) landfill gas-fired leachate evaporator, approved in 2015 for construction, identified as LE1, with a maximum capacity of 30,000 gallons of leachate per day with a 13 MMBtu/hr burner, with PM emissions of less than 0.551 pound per hour, emissions are uncontrolled, the unit exhausts to stack S-LE1. [40 CFR 60, Subpart WWW] [40 CFR 63, Subpart AAAA]
- (e) One (1) Pug Mill operation, approved in 2013 for construction, identified as Pug Mill, with a maximum capacity of 40.5 tons per hour of ash, including two 425 ton ash storage silos each with a silo top dust collector, both units identified as DC1, and one pug mill with emissions controlled by a direct mount dust collector, identified as DC2.

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- (f) One (1) leachate treatment process, approved for construction in 2016, with a maximum throughput of 250,000 gallons of leachate per day, odor and VOC/HAP emissions are controlled by a carbon canister or landfill gas collection system enclosed combustor, including the following process units:

- (1) One (1) 3,500 gallon influent reaction tank, identified as LTP-T1
- (2) One (1) 3,500 gallon influent mix tank, identified as LTP-T2
- (3) One (1) 1,450 gallon reaction effluent tank, identified as LTP-T3
- (4) One (1) 8,000 gallon ultrafilter process tank, identified as LTP-T4
- (5) Ultrafilter System, consisting of two filter banks, identified as UF-1000 and UF-1100, respectively
- (6) One (1) 1,450 gallon permeate lift tank, identified as LTP-T5
- (7) One (1) 9,000 gallon sludge storage tank, identified as LTP-T6
- (8) One (1) centrifuge
- (9) One (1) 760,454 gallon effluent storage tank, identified as EST-1
- (10) One (1) caustic soda feed system for pH adjustment
- (11) One (1) polymer feed system for dewatering
- (12) One (1) chemical feed system for pH adjustment
- (13) One (1) chemical feed system for filter cleaning
- (14) One (1) 500 gallon centrate storage tank, identified as T-8810

A.3 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) Paved and unpaved roads and parking lots with public access. [326 IAC 6-4] [326 IAC 6-5]
- (b) One (1) 40 gallon parts washing machine with a quarterly throughput of 40 gallons, and an annual throughput of 160 gallons. [326 IAC 8-3-2] [326 IAC 8-3-8]
- (c) One (1) propane-fired emergency generator, with a maximum capacity of 70 kW (118 HP) output, 1.099 MMBtu/hr heat input, 6,670 cc total displacement (0.68 liters per cylinder), constructed in 2016. [40 CFR 63, Subpart ZZZZ] [40 CFR 60, Subpart JJJJ]
- (d) Three (3) propane-fired emergency generators, each with a maximum capacity of 17 kW (22.80 HP) output, 0.237 MMBtu/hr heat input, 992 cc total displacement (0.5 liters per cylinder), constructed in 2012. [40 CFR 63, Subpart ZZZZ]

A.4 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) Two (2) 500,000 gallon leachate storage tanks, identified as Tank 1 and Tank 2, approved in 2014 for construction, with a maximum design throughput capacity of 45.97 GPM, each, odor and VOC/HAP emissions are controlled by a carbon canister or landfill gas collection system enclosed combustor.
- (b) One (1) 319,000 gallon leachate storage tank, identified as Tank 3, constructed in 2012, with a maximum design throughput capacity of 45.97 GPM, odor and VOC/HAP emissions are controlled by a carbon canister or landfill gas collection system enclosed combustor.

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- (c) Twelve (12) liquefied petroleum gas-fired combustion sources with a combined heat input equal to or less than six million (6,000,000) Btu per hour.
- (d) Two (2) 0.175 MMBtu/hr and one (1) 0.125 MMBtu/hr liquid propane-fired tube heaters for comfort heating in the leachate treatment process (LTP) building, firing fuel containing less than 0.5% sulfur by weight.
- (e) Activities not previously identified, with HAP emissions less than five (5) pounds per day and one (1) ton per year of a single HAP and less than twelve and five-tenths (12.5) pounds per day and two and five-tenths (2.5) ton per year of any combination of HAPs, and with VOC emissions less than three (3) pounds per hour or fifteen (15) pounds per day, including:
 - (1) One (1) 57,000 gallon leachate storage tank.
 - (2) One (1) 158,000 gallon (598 cubic meters) leachate storage tanks, constructed in 1999, odor and VOC/HAP emissions are controlled by a carbon canister or landfill gas collection system enclosed combustor.
 - (3) One (1) solidification process.
 - (4) One (1) 2,500 gallons oil and water separator located in the CPL/Transmission Building.
- (f) A petroleum fuel (other than gasoline) dispensing facility, having a storage capacity of less than or equal to 10,500 gallons and dispensing less than or equal to 230,000 gallons per month:
 - (1) One (1) above ground diesel fuel storage tank with a 1,100 gallon capacity, identified as Tank A-13.
- (g) The following VOC and HAP storage containers storing lubricating oils, hydraulic oils, machining oils and machining fluids:
 - (1) One (1) used oil AST having a capacity of 500 gallons located in the new shop and identified as Tank A-7.
 - (2) One (1) 300 gallon transmission fluid AST, located in the new shop and identified as Tank A-24.
 - (3) Two (2) 55 gallon transmission fluid AST.
 - (4) One (1) 55 gallon transmission fluid drum, located in the new shop.
 - (5) One (1) 500 gallon spent oil AST, located in the transmission building, and identified as Tank A-4.
 - (6) One (1) 600 gallon compressor oil AST, located in the transmission building, and identified as Tank A-5.
 - (7) Four (4) 500 gallon oil AST, located in the transmission building, and identified as Tanks A-8 through A11.
 - (8) One (1) 12,000 gallon off-road diesel AST, identified as Tank A-5.
 - (9) One (1) 55 gallon automotive oil AST
 - (10) Three (3) 55 gallon gear oil AST
 - (11) Two (2) 55 gallon coolant AST
 - (12) One (1) 55 gallon hydraulic fluid AST

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- (h) Production related activities, including the following:
 - (1) Application of:
 - (i) oils;
 - (ii) greases;
 - (iii) lubricants; and
 - (iv) nonvolatile material as temporary protective coatings.
 - (2) Welding equipment related to manufacturing activities not resulting in the emission of HAPs.
- (i) Repair activities, including the replacement or repair of electrostatic precipitators, bags in baghouses, and filters in other air filtration equipment.
- (j) Emissions from a laboratory as defined in 326 IAC 2-7-1(21)(D), and identified as Unit 1.
- (k) One (1) 1,100 gallon gasoline AST, identified as Tank A-14, with a throughput of less than 10,000 gallons per month and 26,400 gallons per year.
- (l) One (1) diesel-fired tub grinder, with a throughput of 30,000 tons per year (3.42 ton/hr) of wood waste, with a 950 HP non-road engine, and one discharge conveyor, with PM emissions of less than 0.551 lb/hr.

A.5 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).

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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, T111-35606-00017, 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.

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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

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- (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
MC 61-53 IGCN 1003
Indianapolis, Indiana 46204-2251

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.

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- (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
MC 61-53 IGCN 1003
Indianapolis, Indiana 46204-2251

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

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

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- (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.

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- (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 T111-35606-00017 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).

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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
MC 61-53 IGCN 1003
Indianapolis, Indiana 46204-2251

- (b) A timely renewal application is one that is:
 - (1) Submitted at least nine (9) months prior to the date of the expiration of this permit; and

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- (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;

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(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).

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- (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

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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.

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SECTION C

SOURCE OPERATION CONDITIONS

Entire Source

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

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

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

C.2 Opacity [326 IAC 5-1]

Pursuant to 326 IAC 5-1-2 (Opacity Limitations), except as provided in 326 IAC 5-1-1 (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.3 Open Burning [326 IAC 4-1] [IC 13-17-9]

The Permittee shall not open burn any material except as provided in 326 IAC 4-1-3, 326 IAC 4-1-4 or 326 IAC 4-1-6. The previous sentence notwithstanding, the Permittee may open burn in accordance with an open burning approval issued by the Commissioner under 326 IAC 4-1-4.1.

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

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

C.6 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 attached plan as in Attachment A. The provisions of 326 IAC 6-5 are not federally enforceable.

C.7 Stack Height [326 IAC 1-7]

The Permittee shall comply with the applicable provisions of 326 IAC 1-7 (Stack Height Provisions), for all exhaust stacks through which a potential (before controls) of twenty-five (25) tons per year or more of particulate matter or sulfur dioxide is emitted. The provisions of 326 IAC 1-7-1(3), 326 IAC 1-7-2, 326 IAC 1-7-3(c) and (d), 326 IAC 1-7-4, and 326 IAC 1-7-5(a), (b), and (d) are not federally enforceable.

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C.8 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).

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- (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.9 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
Indianapolis, Indiana 46204-2251
- no later than thirty-five (35) days prior to the intended test date. The protocol submitted by the Permittee does not require 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.10 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.11 Compliance Monitoring [326 IAC 2-7-5(3)] [326 IAC 2-7-6(1)] [40 CFR 64] [326 IAC 3-8]

- (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

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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) For monitoring required by CAM, at all times, the Permittee shall maintain the monitoring, including but not limited to, maintaining necessary parts for routine repairs of the monitoring equipment.
- (d) For monitoring required by CAM, except for, as applicable, monitoring malfunctions, associated repairs, and required quality assurance or control activities (including, as applicable, calibration checks and required zero and span adjustments), the Permittee shall conduct all monitoring in continuous operation (or shall collect data at all required intervals) at all times that the pollutant-specific emissions unit is operating. Data recorded during monitoring malfunctions, associated repairs, and required quality assurance or control activities shall not be used for purposes of this part, including data averages and calculations, or fulfilling a minimum data availability requirement, if applicable. The owner or operator shall use all the data collected during all other periods in assessing the operation of the control device and associated control system. A monitoring malfunction is any sudden, infrequent, not reasonably preventable failure of the monitoring to provide valid data. Monitoring failures that are caused in part by poor maintenance or careless operation are not malfunctions.

C.12 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.13 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.

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- (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.14 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.15 Response to Excursions or Exceedances [40 CFR 64] [326 IAC 3-8] [326 IAC 2-7-5] [326 IAC 2-7-6]

- (I) Upon detecting an excursion where a response step is required by the D Section, or an exceedance of a limitation, not subject to CAM, 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.
- (II)
 - (a) CAM Response to excursions or exceedances.
 - (1) Upon detecting an excursion or exceedance, subject to CAM, the Permittee shall restore operation of the pollutant-specific emissions unit (including the control device and associated capture system) to its normal or usual manner of operation as expeditiously as practicable in accordance with good air pollution control practices for minimizing emissions. The response shall include minimizing the period of any

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startup, shutdown or malfunction and taking any necessary corrective actions to restore normal operation and prevent the likely recurrence of the cause of an excursion or exceedance (other than those caused by excused startup or shutdown conditions). Such actions may include initial inspection and evaluation, recording that operations returned to normal without operator action (such as through response by a computerized distribution control system), or any necessary follow-up actions to return operation to within the indicator range, designated condition, or below the applicable emission limitation or standard, as applicable.

- (2) 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, monitoring results, review of operation and maintenance procedures and records, and inspection of the control device, associated capture system, and the process.
- (b) If the Permittee identifies a failure to achieve compliance with an emission limitation, subject to CAM, or standard, subject to CAM, for which the approved monitoring did not provide an indication of an excursion or exceedance while providing valid data, or the results of compliance or performance testing document a need to modify the existing indicator ranges or designated conditions, the Permittee shall promptly notify the IDEM, OAQ and, if necessary, submit a proposed significant permit modification to this permit to address the necessary monitoring changes. Such a modification may include, but is not limited to, reestablishing indicator ranges or designated conditions, modifying the frequency of conducting monitoring and collecting data, or the monitoring of additional parameters.
 - (c) Based on the results of a determination made under paragraph (II)(a)(2) of this condition, the EPA or IDEM, OAQ may require the Permittee to develop and implement a Quality Improvement Plan (QIP). The Permittee shall develop and implement a QIP if notified to in writing by the EPA or IDEM, OAQ.
 - (d) Elements of a QIP:
The Permittee shall maintain a written QIP, if required, and have it available for inspection. The plan shall conform to 40 CFR 64.8 b (2).
 - (e) If a QIP is required, the Permittee shall develop and implement a QIP as expeditiously as practicable and shall notify the IDEM, OAQ if the period for completing the improvements contained in the QIP exceeds 180 days from the date on which the need to implement the QIP was determined.
 - (f) Following implementation of a QIP, upon any subsequent determination pursuant to paragraph (II)(c) of this condition the EPA or the IDEM, OAQ may require that the Permittee make reasonable changes to the QIP if the QIP is found to have:
 - (1) Failed to address the cause of the control device performance problems;
or
 - (2) Failed to provide adequate procedures for correcting control device performance problems as expeditiously as practicable in accordance with good air pollution control practices for minimizing emissions.

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- (g) Implementation of a QIP shall not excuse the Permittee from compliance with any existing emission limitation or standard, or any existing monitoring, testing, reporting or recordkeeping requirement that may apply under federal, state, or local law, or any other applicable requirements under the Act.
- (h) CAM recordkeeping requirements.
 - (1) The Permittee shall maintain records of monitoring data, monitor performance data, corrective actions taken, any written quality improvement plan required pursuant to paragraph (II)(c) of this condition and any activities undertaken to implement a quality improvement plan, and other supporting information required to be maintained under this condition (such as data used to document the adequacy of monitoring, or records of monitoring maintenance or corrective actions). Section C - General Record Keeping Requirements of this permit contains the Permittee's obligations with regard to the records required by this condition.
 - (2) Instead of paper records, the owner or operator may maintain records on alternative media, such as microfilm, computer files, magnetic tape disks, or microfiche, provided that the use of such alternative media allows for expeditious inspection and review, and does not conflict with other applicable recordkeeping requirements.

C.16 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.17 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]

In accordance with the compliance schedule specified in 326 IAC 2-6-3(b)(1), starting in 2004 and every three (3) years thereafter, the Permittee shall submit by July 1 an emission statement covering the previous calendar year. The emission statement shall contain, at a minimum, the information specified in 326 IAC 2-6-4(c) and shall meet the following requirements:

- (1) Indicate estimated actual emissions of all pollutants listed in 326 IAC 2-6-4(a);
- (2) Indicate estimated actual emissions of regulated pollutants as defined by 326 IAC 2-7-1(33) ("Regulated pollutant, which is used only for purposes of Section 19 of this rule") from the source, for purpose of fee assessment.

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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.18 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.

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C.19 General Reporting Requirements [326 IAC 2-7-5(3)(C)] [326 IAC 2-1.1-11] [40 CFR 64] [326 IAC 3-8]

- (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.

On and after the date by which the Permittee must use monitoring that meets the requirements of 40 CFR Part 64 and 326 IAC 3-8, the Permittee shall submit CAM reports to the IDEM, OAQ.

A report for monitoring under 40 CFR Part 64 and 326 IAC 3-8 shall include, at a minimum, the information required under paragraph (a) of this condition and the following information, as applicable:

- (1) Summary information on the number, duration and cause (including unknown cause, if applicable) of excursions or exceedances, as applicable, and the corrective actions taken;
- (2) Summary information on the number, duration and cause (including unknown cause, if applicable) for monitor downtime incidents (other than downtime associated with zero and span or other daily calibration checks, if applicable); and
- (3) A description of the actions taken to implement a QIP during the reporting period as specified in Section C-Response to Excursions or Exceedances. Upon completion of a QIP, the owner or operator shall include in the next summary report documentation that the implementation of the plan has been completed and reduced the likelihood of similar levels of excursions or exceedances occurring.

The Permittee may combine the Quarterly Deviation and Compliance Monitoring Report and a report pursuant to 40 CFR 64 and 326 IAC 3-8.

- (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.

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- (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.20 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.

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SECTION D.1 EMISSIONS UNIT OPERATION CONDITIONS

Emissions Unit Description:

- (a) One (1) municipal solid waste landfill, identified as emissions unit #1, constructed in 1995 and modified in 2006 in accordance with 40 CFR 60, Subpart WWW, and approved for modification in 2006 and 2016 in accordance with 326 IAC 2-7-10.5, but not 40 CFR 60, Subpart WWW, with a maximum design capacity of 102,030,469 megagrams (Mg) and 124,965,933 bank cubic yards. The landfill includes a gas treatment system installed in 2009. Landfill gas is sent offsite for sale or use and/or is combusted in one (1) or more of the enclosed combustors (emission units #3 and #4 and the leachate evaporator). [40 CFR 60, Subpart WWW] [40 CFR 63, Subpart AAAA] [40 CFR 61, Subpart M]
- (b) One (1) enclosed combustor for landfill gas combustion, identified as emissions unit #3, constructed in 2006, with a maximum capacity of 6,000 SCFM. [40 CFR 60, Subpart WWW] [40 CFR 63, Subpart AAAA]
- (c) One (1) enclosed combustor for landfill gas combustion, identified as emission unit #4, constructed in 2012, with a maximum capacity of 5,500 SCFM. [40 CFR 60, Subpart WWW] [40 CFR 63, Subpart AAAA]
- (d) One (1) landfill gas-fired leachate evaporator, approved in 2015 for construction, identified as LE1, with a maximum capacity of 30,000 gallons of leachate per day with a 13 MMBtu/hr burner, with PM emissions of less than 0.551 pound per hour, emissions are uncontrolled, the unit exhausts to stack S-LE1. [40 CFR 60, Subpart WWW] [40 CFR 63, Subpart AAAA]
- (e) One (1) Pug Mill operation, approved in 2013 for construction, identified as Pug Mill, with a maximum capacity of 40.5 tons per hour of ash, including two 425 ton ash storage silos each with a silo top dust collector, both units identified as DC1, and one pug mill with emissions controlled by a direct mount dust collector, identified as DC2.

Insignificant Activities:

- (b) One (1) 40 gallon parts washing machine with a quarterly throughput of 40 gallons, and an annual throughput of 160 gallons. [326 IAC 8-3-2] [326 IAC 8-3-8]

(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 - PM, PM10, PM2.5 [326 IAC 2-2]

In order to render the requirements of 326 IAC 2-2 (Prevention of Significant Deterioration (PSD)) not applicable, the Permittee shall comply with the following:

- (a) The pug mill operation ash throughput shall not exceed 30,000 tons per 12 consecutive month period, with compliance determined at the end of each month.
- (b) The PM, PM10, and PM2.5 emissions from the pug mill operation shall not exceed the emission limits specified in the following table:

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Emission Unit (Control Device)	Emission Limit (lb/ton)		
	PM	PM10	PM2.5
Combined Silo Vents, 2 Units (Silo Top Dust Collectors, DC1)	3.14	1.10	1.10
Pug Mill Dust Collector, 1 Unit (Dust Collector DC2)	0.57	0.16	0.16

Compliance with the above limits, combined with the potential to emit PM, PM10, and PM2.5 from all other emission units and insignificant activities, shall limit PM, PM10, and PM2.5 emissions from the entire source to less than 250 tons per twelve (12) consecutive month period, each, and shall render the requirements of 326 IAC 2-2 (PSD) not applicable to the entire source.

D.1.2 Prevention of Significant Deterioration (PSD) Minor Limit - CO [326 IAC 2-2]

In order to render the requirements of 326 IAC 2-2 (Prevention of Significant Deterioration (PSD)) not applicable, the Permittee shall comply with the following:

- (a) Combined CO emissions from the municipal solid waste landfill enclosed combustors emission unit #3 and emission unit #4 (measured at the exhaust stacks of emission unit #3 and emission unit #4) shall not exceed 235.97 tons per twelve (12) consecutive month period with compliance determined at the end of each month.
- (b) CO emissions from the leachate evaporator, identified as LE1 shall not exceed 2.60 lb CO per hour, based on a three-hour average.

Compliance with the above limits, combined with the potential to emit CO from all other emission units and insignificant activities, shall limit CO emissions from the entire source to less than 250 tons per twelve (12) consecutive month period and shall render the requirements of 326 IAC 2-2 (PSD) not applicable to the entire source.

D.1.3 Best Available Control Technology (BACT) and Prevention of Significant Deterioration (PSD) Minor Limit - VOC [326 IAC 8-1-6] [326 IAC 2-2]

Pursuant to 326 IAC 8-1-6 (BACT) and significant source modification number 111-35382-00017, and in order to render the requirements of 326 IAC 2-2 (PSD) not applicable, the Permittee shall control VOC emissions from the municipal solid waste landfill using Best Available Control Technology (BACT), which has been determined to be the following:

- (a) VOC in the landfill gas collected from the municipal solid waste landfill shall be controlled at all times by one (1) or more of the enclosed flares (emission units #3 and #4) and/or by sending the landfill gas offsite for sale or for beneficial reuse onsite in the leachate evaporator.
- (b) For any landfill gas that this not sent offsite for sale or used onsite for beneficial reuse in the leachate evaporator, VOC (measured as NMOC) in the landfill gas collected from the municipal solid waste landfill shall be controlled by one (1) or more of the enclosed flares (emission units #3 and #4) and each enclosed flare shall have at an NMOC control efficiency of 98% by weight or more or shall reduce the outlet concentration of NMOC to equal to or less than 20 ppmv, dry, as hexane corrected to 3% oxygen.

Compliance with the above limits, combined with the potential to emit VOC from all other emission units and insignificant activities, shall limit VOC emissions from the entire source to less than 250 tons per twelve consecutive month period and shall render the requirements of 326 IAC 2-2 (PSD) not applicable to the entire source.

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D.1.4 Particulate Emission Limitations for Manufacturing Processes [326 IAC 6-3-2]

Pursuant to 326 IAC 6-3-2 (Particulate Emission Limitations for Manufacturing Processes), the allowable particulate emission rate shall not exceed the pounds per hour rate when operating at the process weight rate shown in the table below:

Emission Unit (Control Device)	Process Weight Rate (ton/hr)	Maximum Allowable Emission Rate (lb/hr)
Combined Silo Vents, 2 Units (Silo Top Dust Collectors, DC1)	40.50	42.64
Pug Mill Dust Collector, 1 Unit (Dust Collector DC2)	40.50	42.64

The maximum allowable pound per hour emission rates shown in the table above were calculated with the following equation:

Interpolation and extrapolation of the data for the process weight rate in excess of sixty thousand (60,000) pounds per hour, thirty (30) tons per hour, shall be accomplished by use of the following equation:

$$E = 55.0 \times P^{0.11} - 40$$

Where: E = rate of emission in pounds per hour; and
P = process weight in tons per hour.

D.1.5 Volatile Organic Compound (VOC) [326 IAC 8-3-2]

Pursuant to 326 IAC 8-3-2 (Cold cleaner degreaser control equipment and operating requirements), for cold cleaning operations constructed after January 1, 1980, the Permittee shall comply with the following:

- (a) The owner or operator of a cold cleaner degreaser shall ensure the following control equipment and operating requirements are met:
 - (1) Equip the degreaser with a cover;
 - (2) Equip the degreaser with a device for draining cleaned parts;
 - (3) Close the degreaser cover whenever parts are not being handled in the degreaser;
 - (4) Drain cleaned parts for at least fifteen (15) seconds or until dripping ceases;
 - (5) Provide a permanent, conspicuous label that lists the operation requirements in subdivisions (3), (4), (6), and (7);
 - (6) Store waste solvent only in closed containers.
 - (7) Prohibit the disposal or transfer of waste solvent in such a manner that could allow greater than twenty percent (20%) of the waste solvent (by weight) to evaporate into the atmosphere.
- (b) The owner or operator of a cold cleaner degreaser subject to this subsection shall ensure the following additional control equipment and operating requirements are met:

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- (1) Equip the degreaser with one (1) of the following control devices if the solvent is heated to a temperature of greater than forty-eight and nine-tenths (48.9) degrees Celsius (one hundred twenty (120) degrees Fahrenheit):
 - (A) A freeboard that attains a freeboard ratio of seventy-five hundredths (0.75) or greater.
 - (B) A water cover when solvent used is insoluble in, and heavier than, water.
 - (C) A refrigerated chiller.
 - (D) Carbon adsorption.
 - (E) An alternative system of demonstrated equivalent or better control as those outlined in clauses (A) through (D) that is approved by the department. An alternative system shall be submitted to the U.S. EPA as a SIP revision.
- (2) Ensure the degreaser cover is designed so that it can be easily operated with one (1) hand if the solvent is agitated or heated.
- (3) If used, solvent spray:
 - (A) must be a solid, fluid stream; and
 - (B) shall be applied at a pressure that does not cause excessive splashing.

D.1.6 Material Requirements for Cold Cleaner Degreasers [326 IAC 8-3-8]

Pursuant to 326 IAC 8-3-8, on and after January 1, 2015, the Permittee shall not operate a cold cleaner degreaser with a solvent that has a VOC composite partial vapor pressure that exceeds one (1) millimeter of mercury (nineteen-thousandths (0.019) pound per square inch) measured at twenty (20) degrees Celsius (sixty-eight (68) degrees Fahrenheit).

D.1.7 Preventive Maintenance Plan [326 IAC 2-7-5(12)]

A Preventive Maintenance Plan is required for these facilities and their control devices. Section B - Preventive Maintenance Plan contains the Permittee's obligation with regard to the preventive maintenance plan required by this condition.

Compliance Determination Requirements

D.1.8 Carbon Monoxide (CO) [326 IAC 2-2]

In order to determine the compliance status with Condition D.1.2(a), the Permittee shall calculate carbon monoxide (CO) emissions from enclosed combustors emission unit #3 and emission unit #4 using the following equations:

$$\text{CO (tons this month)} = [\text{CO emission factor FL3 (lb/MMBtu)} \times \text{LFG heat content (MMBtu/MMCF)} \times \text{LFG usage in FL3 (MMCF this month)} \times 1 \text{ ton}/2,000 \text{ pounds CO}] + [\text{CO emission factor FL4 (lb/MMBtu)} \times \text{LFG heat content (MMBtu/MMCF)} \times \text{LFG usage in FL4 (MMCF this month)} \times 1 \text{ ton}/2,000 \text{ pounds CO}]$$

$$\text{CO tons per 12 Consecutive Months} = \text{CO (tons this month)} + \text{CO (tons for previous 11 months)}$$

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Where: CO emission factor for emission unit #3 (FL3) = 0.20 lb/MMBtu, or as determined during the most recent compliant stack test.

CO emission factor for emission unit #3 (FL4) = 0.10 lb/MMBtu, or as determined during the most recent compliant stack test.

LFG heat content (MMBtu/MMCF) = 550 MMBtu/MMCF or as determined during the most recent compliant stack test.

LFG usage in FL3 (MMCF this month) = amount of landfill gas combusted in emission unit #3 this month.

LFG usage in FL4 (MMCF this month) = amount of landfill gas combusted in emission unit #4 this month.

D.1.9 Particulate Control

- (a) In order to comply with Condition D.1.1(b) and D.1.4, both silo top dust collectors DC1 and dust collector DC2 for particulate control shall be in operation and controlling emissions from the pug mill operation at all times the pug mill operation is in operation.
- (b) In the event that bag failure is observed in a multi-compartment baghouse, if operations will continue for ten (10) days or more after the failure is observed before the failed units will be repaired or replaced, the Permittee shall promptly notify the IDEM, OAQ of the expected date the failed units will be repaired or replaced. The notification shall also include the status of the applicable compliance monitoring parameters with respect to normal, and the results of any response actions taken up to the time of notification.

D.1.10 Testing Requirements [326 IAC 2-7-6(1)] [326 IAC 2-7-6(6)]

- (a) In order to demonstrate the compliance status with Condition D.1.1(b) and D.1.4, not later than sixty (60) days after issuance of significant source modification number 111-35382-00017, the Permittee shall perform PM, PM₁₀, and PM_{2.5} testing on the pug mill system at the exhaust of dust collector DC2, utilizing methods as approved by the Commissioner. This test shall be repeated at least once every five (5) years from the date of the most recent valid compliance demonstration. Testing shall be conducted in accordance with the provisions of 326 IAC 3-6 (Source Sampling Procedures). PM10 and PM2.5 includes filterable and condensable PM.
- (b) In order to demonstrate the compliance status with Condition D.1.2(b), not later than sixty (60) days after issuance of significant source modification number 111-35382-00017, the Permittee shall perform CO testing on the leachate evaporator, utilizing methods as approved by the Commissioner. Testing shall be conducted in accordance with the provisions of 326 IAC 3-6 (Source Sampling Procedures).
- (c) In order to verify the VOC and NOx emission factors provided by the Permittee for emission unit #3 and emission unit #4, not later than sixty (60) days after issuance of significant source modification number 111-35382-00017, the Permittee shall perform VOC and NOx testing on enclosed combustors emission unit #3 and emission unit #4, utilizing methods as approved by the Commissioner. Testing shall be conducted in accordance with the provisions of 326 IAC 3-6 (Source Sampling Procedures).
- (d) In order to demonstrate the compliance status with Condition D.1.3(b), not later than sixty (60) days after issuance of significant source modification number 111-35382-00017, the Permittee shall perform NMOC testing (either NMOC control efficiency or NMOC outlet concentration reduction) on each of the enclosed combustors, emission unit #3 and emission unit #4, utilizing methods as approved by the Commissioner. These tests shall

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be repeated at least once every five (5) years from the date of the most recent valid compliance demonstration. Testing shall be conducted in accordance with the provisions of 326 IAC 3-6 (Source Sampling Procedures).

- (e) Section C – Performance Testing contains the Permittee’s obligation with regard to the performance testing required by this condition.

D.1.11 Volatile Organic Compounds (VOC) - Landfill Gas Control

In order to comply with Condition D.1.3, VOC in the landfill gas collected from the municipal solid waste landfill shall be controlled at all times by one (1) or more of the enclosed flares (emission units #3 and #4) and/or by sending the landfill gas offsite for sale or beneficial reuse.

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

D.1.12 Flare Pilot Flame [40 CFR 64]

When controlling VOC in the landfill gas collected from the municipal solid waste landfill with one (1) or more of the enclosed flares (emission units #3 and #4), the Permittee shall monitor the presence of a flare pilot flame using a heat sensing device, such as an ultraviolet beam sensor or thermocouple, at the pilot light or the flame itself to indicate the continuous presence of a flame.

D.1.13 Visible Emissions Notations [40 CFR 64]

- (a) Daily visible emission notations of the pugmill operation stack exhausts (both silo top dust collectors DC1 and dust collector DC2) shall be performed during normal daylight operations. A trained employee shall record whether emissions are normal or abnormal.
- (b) For processes operated continuously, "normal" means those conditions prevailing, or expected to prevail, eighty percent (80%) of the time the process is in operation, not counting startup or shut down time.
- (c) In the case of batch or discontinuous operations, readings shall be taken during that part of the operation that would normally be expected to cause the greatest emissions.
- (d) A trained employee is an employee who has worked at the plant at least one (1) month and has been trained in the appearance and characteristics of normal visible emissions for that specific process.
- (e) If abnormal emissions are observed, the Permittee shall take a reasonable response. Section C – Response to Excursions and Exceedances contains the Permittee’s obligation with regard to the reasonable response required by this condition. Failure to take a reasonable response shall be considered a deviation from this permit.

D.1.14 Broken or Failed Bag Detection

- (a) For a single compartment baghouses controlling emissions from a process operated continuously, a failed unit and the associated process shall be shut down immediately until the failed unit has been repaired or replaced. Operations may continue only if the event qualifies as an emergency and the Permittee satisfies the requirements of the emergency provisions of this permit (Section B - Emergency Provisions).
- (b) For a single compartment baghouse controlling emissions from a batch process, the feed to the process shall be shut down immediately until the failed unit has been repaired or replaced. The emissions unit shall be shut down no later than the completion of the processing of the material in the line. Operations may continue only if the event qualifies as an emergency and the Permittee satisfies the requirements of the emergency provisions of this permit (Section B - Emergency Provisions).

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Bag failure can be indicated by a significant drop in the baghouse's pressure reading with abnormal visible emissions, by an opacity violation, or by other means such as gas temperature, flow rate, air infiltration, leaks, dust traces or triboflows.

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

D.1.15 Record Keeping Requirements

- (a) To document the compliance status with Condition D.1.1(a), the Permittee shall maintain monthly records of the pug mill ash throughput.
- (b) To document the compliance status with Condition D.1.2(a) and D.1.8, the Permittee shall maintain records of the combined CO emissions from enclosed combustors emission unit #3 and emission unit #4 each month and each compliance period. The records shall contain as a minimum the information needed to calculate CO emissions using the equation in Condition D.1.8.
- (c) To document the compliance status with Condition D.1.6, the Permittee shall maintain the following records for each solvent purchase:
 - (1) The name and address of the solvent supplier
 - (2) The date of purchase (or invoice/bill date of contract servicer indicating service date;
 - (3) The type of solvent purchased;
 - (4) The total volume of solvent purchased; and
 - (5) The true vapor pressure of the solvent measured in millimeters of mercury at twenty (20) degrees Celsius (sixty-eight (68) degrees Fahrenheit).
- (d) To document the compliance status with Condition D.1.13, the Permittee shall maintain daily records of the visible emission notations of the pug mill stack exhausts. The Permittee shall include in its daily record when a visible emission notation is not taken and the reason for the lack of a visible emission notation (e.g., the process did not operate that day).
- (e) To document the compliance status with Conditions D.1.3, D.1.11, and D.1.12, the Permittee shall maintain records of temperature or other parameters sufficient to demonstrate the presence of a pilot flame when enclosed combustor emission unit #3 and/or emission unit #4 are controlling landfill gas emissions.
- (f) Section C - General Record Keeping Requirements contains the Permittee's obligations with regard to the records required by this condition.

D.1.16 Reporting Requirements

Quarterly summaries of the information to document the compliance status with Condition D.1.1(a) and D.1.2(a) shall be submitted using the reporting forms located at the end of this permit, or their equivalent, not later than thirty (30) days after the end of the quarter being reported. Section C – General Reporting Requirements contains the Permittee's obligation with regard to the reporting required by this condition. The reports submitted by the Permittee do require a certification that meets the requirements of 326 IAC 2-7-6(1) by a "responsible official" as defined in 326 IAC 2-7-1(35).

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SECTION E.1 FACILITY OPERATION CONDITIONS

Emissions Unit Description:

- (a) One (1) municipal solid waste landfill, identified as emissions unit #1, constructed in 1995 and modified in 2006 in accordance with 40 CFR 60, Subpart WWW, and approved for modification in 2006 and 2016 in accordance with 326 IAC 2-7-10.5, but not 40 CFR 60, Subpart WWW, with a maximum design capacity of 102,030,469 megagrams (Mg) and 124,965,933 bank cubic yards. The landfill includes a gas treatment system installed in 2009. Landfill gas is sent offsite for sale or use and/or is combusted in one (1) or more of the enclosed combustors (emission units #3 and #4 and the leachate evaporator). [40 CFR 60, Subpart WWW] [40 CFR 63, Subpart AAAA] [40 CFR 61, Subpart M]
- (b) One (1) enclosed combustor for landfill gas combustion, identified as emissions unit #3, constructed in 2006, with a maximum capacity of 6,000 SCFM. [40 CFR 60, Subpart WWW] [40 CFR 63, Subpart AAAA]
- (c) One (1) enclosed combustor for landfill gas combustion, identified as emission unit #4, constructed in 2012, with a maximum capacity of 5,500 SCFM. [40 CFR 60, Subpart WWW] [40 CFR 63, Subpart AAAA]
- (d) One (1) landfill gas-fired leachate evaporator, approved in 2015 for construction, identified as LE1, with a maximum capacity of 30,000 gallons of leachate per day with a 13 MMBtu/hr burner, with PM emissions of less than 0.551 pound per hour, emissions are uncontrolled, the unit exhausts to stack S-LE1. [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 [40 CFR 60] [326 IAC 12]

E.1.1 General Provisions Relating to NSPS [326 IAC 12-1] [40 CFR 60, Subpart A]

- (a) 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.
- (b) Pursuant to 40 CFR 60.19, 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 [40 CFR 60, Subpart WWW] [326 IAC 12]

Pursuant to 40 CFR 60, Subpart WWW, the Permittee shall comply with the following provisions of 40 CFR 60, Subpart WWW (included as Attachment B), which are incorporated by reference as 326 IAC 12, for the facilities described in this section:

- 1) 40 CFR 60.750;
- 2) 40 CFR 60.751;

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- 3) 40 CFR 60.752(b)(2)(i), (ii)(A), (iii)(B), (iii)(C), (iv), (v), (c)(1), and (d)(2);
- 4) 40 CFR 60.753;
- 5) 40 CFR 60.754(a)(1), (a)(2)(ii), (a)(3)(i), and (a)(3)(ii);
- 6) 40 CFR 60.754(b), (c), (d), and (e);
- 7) 40 CFR 60.755(a)(1 through 5), (b), (c), (d), and (e);
- 8) 40 CFR 60.756(a), (b)(1), (b)(2)(i), and (f);
- 9) 40 CFR 60.757(a)(1)(i), (a)(2), (a)(3), (b)(3), (c), (d), (e), (f), and (g);
- 10) 40 CFR 60.758(a), (b)(1), (b)(3), (c)(1)(i), (c)(2), (d), (e), and (f); and
- 11) 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), 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).
- (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) A landfill gas temperature less than 60°C (140°F) for wells #134, #136, #140, and #169.
 - (2) A landfill gas temperature less than 62.8°C (145°F) for well #19.
 - (3) A landfill gas temperature less than 65.6°C (150°F) for wells #10R, #103C, #104C, #117, #129B, #139, #173, #181, and HR9.
 - (4) A landfill gas temperature less than 71.1°C (160°F) for wells #79, #123, #131, #137, #138, #170, and #174.
 - (5) A landfill gas temperature less than 73.9°C (165°F) for well #132 and #143B.
 - (6) A landfill gas temperature less than 76.7°C (170°F) for wells #31A, #36A, #89A, #107B, #113B, #128A, #130A, #147, #179, and #186.
 - (7) A landfill gas temperature less than 79.4°C (175°F) for wells #22R and #24R.

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- (8) A landfill gas temperature less than 82.2°C (180°F) for wells #16A, #27R, #35A, #45A, #59B, #60A, #69R, #96A, #103B, #105C, #108R, #125, #143A, #145, and #160.
 - (9) A landfill gas temperature less than 85°C (185°F) for well #157 and #168.
 - (10) A landfill gas temperature less than 87.8°C (190°F) for wells #4B, #7B, #13R, #21A, #28A, #32A, #50R, #70A, #83, #88B, #97A, #100A, #101B, #109B, #111B, #124A, #127A, #146, #149, #150, #153, #164, and #167.
 - (11) A landfill gas temperature less than 90.6°C (195°F) for well #66A.
 - (12) A landfill gas temperature less than 93.33°C (200°F) for well #1C, #2B, #52R, #53R, #55R, #78A, #85B, #99A, #114A, #119A, and #155A.
 - (13) A landfill gas temperature less than 98.89°C (210°F) for wells #6B, #9B, #14R, #15R, #25R2, #26R, #33A, #46B, #51R, #54R, #56R, #57R, #58R2, #61B, #62R2, #63B, #65A, #67A, #68B, #71A, #72R2, #73R2, #74R2, #75B, #76A, #77A, #82A, #98B, #112B, #115A, #120A, #121A, #122A, #126A, #148, #154, #156, #163, #165, #166, and #178.
 - (14) A landfill gas oxygen concentration of less than 15% for horizontal collector HR8.
 - (15) A landfill gas oxygen concentration of less than 22% for horizontal collector HR9.
 - (16) A landfill gas oxygen concentration of less than 21.1% for the leachate cleanout risers CO02, CO03, CO04, CO05, CO06, horizontal trenches HT01, HT3A, HT3C, HT4B, and leachate sumps LS02, LS03, LS04, and LS05.
 - (17) A landfill gas oxygen concentration of less than 22% for the perimeter collection sumps CS13, CS14, PCS01, PCS02, PCS03, PCS04, PCS05, PCS06, PCS07, PCS08, PCS09, PCS10, PCS11, PCS12, PCS15 and leachate cleanout risers CO09, CO10, CO13, and CO7A.
 - (18) A landfill gas oxygen concentration of less than 22% for the horizontal trench HOZ2 and horizontal collectors HR5, HR6, HR7, HR11, and HR14.
 - (19) A landfill gas oxygen concentration of less than 22% for the temporary liquid sumps TLS1, TLS2, TLS3, TLS4, TLS5, TLS6, TLS7, TLS8, TLS9, TLS10, TLS11, TLS12, and TLS13.
- (d) The following active landfill gas collection and control system components have been permanently decommissioned:
- (1) Leachate sumps LS06, LS07, LS08, LS12 and LS13, decommissioned in 2016.

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SECTION E.2 FACILITY OPERATION CONDITIONS

Emissions Unit Description:

- (a) One (1) municipal solid waste landfill, identified as emissions unit #1, constructed in 1995 and modified in 2006 in accordance with 40 CFR 60, Subpart WWW, and approved for modification in 2006 and 2016 in accordance with 326 IAC 2-7-10.5, but not 40 CFR 60, Subpart WWW, with a maximum design capacity of 102,030,469 megagrams (Mg) and 124,965,933 bank cubic yards. The landfill includes a gas treatment system installed in 2009. Landfill gas is sent offsite for sale or use and/or is combusted in one (1) or more of the enclosed combustors (emission units #3 and #4 and the leachate evaporator). [40 CFR 60, Subpart WWW] [40 CFR 63, Subpart AAAA] [40 CFR 61, Subpart M]
- (b) One (1) enclosed combustor for landfill gas combustion, identified as emissions unit #3, constructed in 2006, with a maximum capacity of 6,000 SCFM. [40 CFR 60, Subpart WWW] [40 CFR 63, Subpart AAAA]
- (c) One (1) enclosed combustor for landfill gas combustion, identified as emission unit #4, constructed in 2012, with a maximum capacity of 5,500 SCFM. [40 CFR 60, Subpart WWW] [40 CFR 63, Subpart AAAA]
- (d) One (1) landfill gas-fired leachate evaporator, approved in 2015 for construction, identified as LE1, with a maximum capacity of 30,000 gallons of leachate per day with a 13 MMBtu/hr burner, with PM emissions of less than 0.551 pound per hour, emissions are uncontrolled, the unit exhausts to stack S-LE1. [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 [40 CFR 63] [326 IAC 20]

E.2.1 General Provisions Relating to NESHAP [326 IAC 20-1] [40 CFR 63, Subpart A]

- (a) 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.
- (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.2.2 National Emissions Standards for Hazardous Air Pollutants for Municipal Solid Waste Landfills Requirements [40 CFR 63, Subpart AAAA] [326 IAC 20-67]

Pursuant to 40 CFR 63.1945, the Permittee shall comply with the following provisions of 40 CFR 63, Subpart AAAA (included as Attachment C), which are incorporated by reference as 326 IAC 20-67, for the facilities described in this section:

- 1) 40 CFR 63.1930;
- 2) 40 CFR 63.1935(a)(1);

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- 3) 40 CFR 63.1940(a), and (c);
- 4) 40 CFR 63.1945(b), and (d);
- 5) 40 CFR 63.1950;
- 6) 40 CFR 63.1955(a)(1), and (b);
- 7) 40 CFR 63.1960;
- 8) 40 CFR 63.1965;
- 9) 40 CFR 63.1975;
- 10) 40 CFR 63.1980(a), and (b);
- 11) 40 CFR 63.1985;
- 12) 40 CFR 63.1990; and
- 13) Table 1.

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SECTION E.3 FACILITY OPERATION CONDITIONS

Emissions Unit Description:

- (a) One (1) municipal solid waste landfill, identified as emissions unit #1, constructed in 1995 and modified in 2006 in accordance with 40 CFR 60, Subpart WWW, and approved for modification in 2006 and 2016 in accordance with 326 IAC 2-7-10.5, but not 40 CFR 60, Subpart WWW, with a maximum design capacity of 102,030,469 megagrams (Mg) and 124,965,933 bank cubic yards. The landfill includes a gas treatment system installed in 2009. Landfill gas is sent offsite for sale or use and/or is combusted in one (1) or more of the enclosed combustors (emission units #3 and #4 and the leachate evaporator). [40 CFR 60, Subpart WWW] [40 CFR 63, Subpart AAAA] [40 CFR 61, Subpart M]

(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 [40 CFR 61] [326 IAC 14]

E.3.1 General Provisions Relating to NESHAP [326 IAC 14-1] [40 CFR 61, Subpart A]

- (a) 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) Pursuant to 40 CFR 61.04, 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 Emissions Standards for Hazardous Air Pollutants for Asbestos Requirements [40 CFR 61, Subpart M] [326 IAC 14-2]

Pursuant to 40 CFR 61, Subpart M, the Permittee shall comply with the following provisions of 40 CFR 61, Subpart M (included as Attachment D), incorporated by reference as 326 IAC 14-2, for the municipal solid waste landfill:

- 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).

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SECTION E.4 FACILITY OPERATION CONDITIONS

Insignificant Activities:

- (c) One (1) propane-fired emergency generator, with a maximum capacity of 70 kW (118 HP) output, 1.099 MMBtu/hr heat input, 6,670 cc total displacement (0.68 liters per cylinder), constructed in 2016. [40 CFR 63, Subpart ZZZZ] [40 CFR 60, Subpart JJJJ]
- (d) Three (3) propane-fired emergency generators, each with a maximum capacity of 17 kW (22.80 HP) output, 0.237 MMBtu/hr heat input, 992 cc total displacement (0.5 liters per cylinder), constructed in 2012. [40 CFR 63, Subpart ZZZZ]

(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 [40 CFR 63] [326 IAC 20]

E.4.1 General Provisions Relating to NESHAP [326 IAC 20-1] [40 CFR 63, Subpart A]

- (a) 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 ZZZZ.
- (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 Stationary Reciprocating Internal Combustion Engines [326 IAC 20-82] [40 CFR 63, Subpart ZZZZ]

Pursuant to 40 CFR 63, Subpart ZZZZ, the Permittee shall comply with the following provisions of 40 CFR 63, Subpart ZZZZ (included as Attachment F to this permit), for the facilities described in this section:

- 1) 40 CFR 63.6580;
- 2) 40 CFR 63.6585(a), and (b);
- 3) 40 CFR 63.6590(a)(2)(ii), and (c)(6);
- 4) 40 CFR 63.6660;
- 5) 40 CFR 63.6665;
- 6) 40 CFR 63.6670;
- 7) 40 CFR 63.6675; and
- 8) Table 8.

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SECTION E.5 FACILITY OPERATION CONDITIONS

Insignificant Activities:

- (c) One (1) propane-fired emergency generator, with a maximum capacity of 70 kW (118 HP) output, 1.099 MMBtu/hr heat input, 6,670 cc total displacement (0.68 liters per cylinder), constructed in 2016. [40 CFR 63, Subpart ZZZZ] [40 CFR 60, Subpart JJJJ]

(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 [40 CFR 60] [326 IAC 12]

E.5.1 General Provisions Relating to NSPS [326 IAC 12-1] [40 CFR 60, Subpart A]

- (a) 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 JJJJ.
- (b) Pursuant to 40 CFR 60.19, 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.5.2 Standards of Performance for Stationary Spark Ignition Internal Combustion Engines [40 CFR 60, Subpart JJJJ] [326 IAC 12]

Pursuant to 40 CFR 60, Subpart JJJJ, the Permittee shall comply with the following provisions of 40 CFR 60, Subpart JJJJ (included as Attachment F), which are incorporated by reference as 326 IAC 12, for the facilities described in this section:

- 1) 40 CFR 60.4230(a)(4)(iv), and (a)(6);
- 2) 40 CFR 60.4233(c);
- 3) 40 CFR 60.4234;
- 4) 40 CFR 60.4236(a), (d), and (e);
- 5) 40 CFR 60.4243(a)(1), and (d);
- 6) 40 CFR 60.4245(a);
- 7) 40 CFR 60.4246;
- 8) 40 CFR 60.4248; and
- 9) Table 3.

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

Source Name: Newton County Landfill
Source Address: 2266 East 500 South Road, Brook, Indiana 47922
Part 70 Permit No.: T111-35606-00017

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:

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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: Newton County Landfill
Source Address: 2266 East 500 South Road, Brook, Indiana 47922
Part 70 Permit No.: T111-35606-00017

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:

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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: _____

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

PART 70 QUARTERLY REPORT - Ash Throughput

Source Name: Newton County Landfill
Source Address: 2266 East 500 South Road, Brook, Indiana 47922
Part 70 Permit No.: T111-35606-00017
Facility: Pug Mill Operation
Parameter: Ash Throughput - Condition D.1.1(a)
Limit: The pug mill operation ash throughput shall not exceed 30,000 tons per 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: _____

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

PART 70 QUARTERLY REPORT - CO Emissions

Source Name: Newton County Landfill
Source Address: 2266 East 500 South Road, Brook, Indiana 47922
Part 70 Permit No.: T111-35606-00017
Facility: Enclosed Combustors Emission Unit #3 and Emission Unit #4
Parameter: CO Emissions - Condition D.1.2(a)
Limit: Combined CO emissions from the municipal solid waste landfill enclosed combustors emission unit #3 and emission unit #4 (measured at the exhaust stacks of emission unit #3 and emission unit #4) shall not exceed 235.97 tons per twelve (12) consecutive month period with compliance determined at the end of each month.

Compliance with this limit shall be determined using the equations in Condition D.1.8

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: _____

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**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: Newton County Landfill
 Source Address: 2266 East 500 South Road, Brook, Indiana 47922
 Part 70 Permit No.: T111-35606-00017

Months: _____ to _____ Year: _____

Page 1 of 2

<p>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".</p>	
<input type="checkbox"/> NO DEVIATIONS OCCURRED THIS REPORTING PERIOD.	
<input type="checkbox"/> 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:	

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Page 2 of 2

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 Renewal No.: T111-35606-00017

FUGITIVE DUST CONTROL PLAN
NEWTON COUNTY LANDFILL
BROOK, INDIANA

Prepared for
Republic Services, Inc.
May 2013

Prepared by



39395 W. Twelve Mile Road, Suite 103
Farmington Hills, Michigan 48331

FUGITIVE DUST CONTROL PLAN

Newton County Landfill (NCL) has implemented this Fugitive Dust Control Plan in order to minimize fugitive particulate emissions (dust) from activities at the NCL. These detailed procedures for monitoring, and controlling fugitive dust sources will be observed continuously at the site. Control measures will be implemented as necessary.

1. NCL shall minimize the emission of fugitive dust from any roadways, parking lots, landfill surface, storage piles, including any material handling activity at a storage pile.
2. NCL will operate and maintain a truck mounted spray system or equivalent system to distribute water and/or dust suppression solution in order to minimize visible emissions of fugitive dust generated by vehicle traffic on unpaved roadways or parking areas.
3. All paved roads and parking lots will be cleaned as needed to keep them free of gross quantities of mud or dust to prevent tracking of materials onto public roadways and to minimize dust emissions from the facility roadways.
4. All unpaved roads and parking lots will be treated with water or dust suppressants as needed to control fugitive dust.
5. All active storage piles on site will be covered or sprayed with water or a surfactant solution as needed to control fugitive dust.
6. All inactive storage piles will be covered with vegetation or other means of cover or sprayed with water or a surfactant solution as needed to control fugitive dust.
7. All truckloads of dusty material will be unloaded in a manner that will minimize the drop height to reduce emissions of fugitive dust.
8. NCL will impose a speed limit of 20 MPH for all vehicles operating within the facility. This speed limit will be posted and enforced.

This fugitive dust control plan shall be kept on record for the life of the landfill. If the fugitive dust control plan is revised, NCL will keep the previous versions of the plan on record for a period of five (5) years after each revision to the fugitive dust control plan.

Attachment B

Part 70 Operating Permit No: T111-35606-00017

[Downloaded from the eCFR on December 18, 2014]

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_0 , 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.

$$M_{NMOC} = \sum_{i=1}^n 2 k L_0 M_i (e^{-kt_i}) (C_{NMOC}) (3.6 \times 10^{-9})$$

where,

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

k = methane generation rate constant, year⁻¹

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

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

t_i = age of the i^{th} 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.

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

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 $c=0$ 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:

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

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:

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

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_0 kinetic factors should be those published in the most recent Compilation of Air Pollutant Emission Factors (AP-42) or other site specific values demonstrated to be appropriate and approved by the Administrator. If k has been determined as specified in §60.754(a)(4), the value of k determined from the test shall be used. A value of no more than 15 years shall be used for the intended use period of the gas mover equipment. The active life of the landfill is the age of the landfill plus the estimated number of years until closure.

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

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

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

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

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

where,

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

k = methane generation rate constant, year⁻¹

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

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

t_i = age of the i^{th} section, years

(iii) If a collection and control system has been installed, actual flow data may be used to project the maximum expected gas generation flow rate instead of, or in conjunction with, the equations in 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 expandability, leachate and condensate management, accessibility, compatibility with filling operations, integration with closure end use, air intrusion control, corrosion resistance, fill settlement, and resistance to the refuse decomposition heat.

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

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

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

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

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

where,

Q_i = NMOC emission rate from the i^{th} 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 i^{th} section, megagram

t_i = age of the solid waste in the i^{th} 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 C

Part 70 Operating Permit No: T111-35606-00017

[Downloaded from the eCFR on October 1, 2015]

Electronic Code of Federal Regulations

Title 40: Protection of Environment

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

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

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

WHAT THIS SUBPART COVERS

§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 (m³) 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 or greater than 2.5 million Mg and 2.5 million m³ 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 m³, 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 m³, 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 AAAAA of Part 63—Applicability of NESHAP General Provisions to Subpart AAAAA

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: T111-35606-00017

[Downloaded from the eCFR on July 23, 2013]

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 (m/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 similar 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 (C=Original B=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 D=Demolished Demo R=Renovation R=Rear.Renovations):			
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		Nonfriable Asbestos Material Not to be removed	
2. Category I ACM Not Removed		Category II ACM Not Removed	
RACM TO Be Removed		Cat I	Cat II
Fibers		LFPS	LF M
Surface Area		SqFt	Sq M
% of RACM of Facility Component		Cat I	Cat II
VIII. SCHEDULED DATE ASBESTOS REMOVAL (MM/DD/YY)		Starts	Completes
IX. SCHEDULED DATE DEMO/RENOVATION (MM/DD/YY)		Starts	Completes

Continued on page 140

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 CRUMBED, FULVERIZED, 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 completion)		
(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 $\pm 1^{\circ}\text{C}$ ($\pm 2^{\circ}\text{F}$). 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 x 36 cm (20 in x 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 ($\frac{3}{4}$ inch) Sans Serif, Gothic or Block

14 Point Gothic

Spacing between any two lines must be at 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
	10. Transporter 1 (Acknowledgment of receipt of materials)			
Transporter	Printed/typed name & title		Signature	Month Day Year
	Address and telephone no.			
11. Transporter 2 (Acknowledgment of receipt of materials)				
Printed/typed name & title		Signature	Month Day Year	
Address and telephone no.				
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 $9 \text{ m}^3 / \text{min}/\text{m}^2$ ($30 \text{ ft}^3 / \text{min}/\text{ft}^2$) for woven fabrics or $11 \text{ m}^3 / \text{min}/\text{m}^2$ ($35 \text{ ft}^3 / \text{min}/\text{ft}^2$) for felted fabrics, except that $12 \text{ m}^3 / \text{min}/\text{m}^2$ ($40 \text{ ft}^3 / \text{min}/\text{ft}^2$) for woven and $14 \text{ m}^3 / \text{min}/\text{m}^2$ ($45 \text{ ft}^3 / \text{min}/\text{ft}^2$) 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 $\text{m}^3/\text{min}/\text{m}^2$ 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 $\text{m}^3/\text{min}/\text{m}^2$.

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

(i) The airflow permeability in $\text{m}^3/\text{min}/\text{m}^2$ ($\text{ft}^3/\text{min}/\text{ft}^2$) 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 $\text{m}^3/\text{min}/\text{m}^2$ ($\text{ft}^3/\text{min}/\text{ft}^2$).

(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 x 36 cm (20"x14") 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 ft², 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 ft² of that material will create 160 ft² 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 ft² 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 ft², 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 ft² 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 ft² 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 ft², 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 ft² 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 ft²; 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 ft². 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 ft² 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 E

Part 70 Operating Permit No: T111-35606-00017

[Downloaded from the eCFR on July 23, 2014]

Electronic Code of Federal Regulations

Title 40: Protection of Environment

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

Subpart ZZZZ—National Emissions Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines

Source: 69 FR 33506, June 15, 2004, unless otherwise noted.

What This Subpart Covers

§63.6580 What is the purpose of subpart ZZZZ?

Subpart ZZZZ establishes national emission limitations and operating limitations for hazardous air pollutants (HAP) emitted from stationary reciprocating internal combustion engines (RICE) located at major and area sources of HAP emissions. This subpart also establishes requirements to demonstrate initial and continuous compliance with the emission limitations and operating limitations.

[73 FR 3603, Jan. 18, 2008]

§63.6585 Am I subject to this subpart?

You are subject to this subpart if you own or operate a stationary RICE at a major or area source of HAP emissions, except if the stationary RICE is being tested at a stationary RICE test cell/stand.

(a) A stationary RICE is any internal combustion engine which uses reciprocating motion to convert heat energy into mechanical work and which is not mobile. Stationary RICE differ from mobile RICE in that a stationary RICE is not a non-road engine as defined at 40 CFR 1068.30, and is not used to propel a motor vehicle or a vehicle used solely for competition.

(b) A major source of HAP emissions is a plant site that emits or has the potential to emit any single HAP at a rate of 10 tons (9.07 megagrams) or more per year or any combination of HAP at a rate of 25 tons (22.68 megagrams) or more per year, except that for oil and gas production facilities, a major source of HAP emissions is determined for each surface site.

(c) An area source of HAP emissions is a source that is not a major source.

(d) If you are an owner or operator of an area source subject to this subpart, your status as an entity subject to a standard or other requirements under this subpart does not subject you to the obligation to obtain a permit under 40 CFR part 70 or 71, provided you are not required to obtain a permit under 40 CFR 70.3(a) or 40 CFR 71.3(a) for a reason other than your status as an area source under this subpart. Notwithstanding the previous sentence, you must continue to comply with the provisions of this subpart as applicable.

(e) If you are an owner or operator of a stationary RICE used for national security purposes, you may be eligible to request an exemption from the requirements of this subpart as described in 40 CFR part 1068, subpart C.

(f) The emergency stationary RICE listed in paragraphs (f)(1) through (3) of this section are not subject to this subpart. The stationary RICE must meet the definition of an emergency stationary RICE in §63.6675, which includes operating according to the provisions specified in §63.6640(f).

(1) Existing residential emergency stationary RICE located at an area source of HAP emissions that do not operate or are not contractually obligated to be available for more than 15 hours per calendar year for the purposes specified in §63.6640(f)(2)(ii) and (iii) and that do not operate for the purpose specified in §63.6640(f)(4)(ii).

(2) Existing commercial emergency stationary RICE located at an area source of HAP emissions that do not operate or are not contractually obligated to be available for more than 15 hours per calendar year for the purposes specified in §63.6640(f)(2)(ii) and (iii) and that do not operate for the purpose specified in §63.6640(f)(4)(ii).

(3) Existing institutional emergency stationary RICE located at an area source of HAP emissions that do not operate or are not contractually obligated to be available for more than 15 hours per calendar year for the purposes specified in §63.6640(f)(2)(ii) and (iii) and that do not operate for the purpose specified in §63.6640(f)(4)(ii).

[69 FR 33506, June 15, 2004, as amended at 73 FR 3603, Jan. 18, 2008; 78 FR 6700, Jan. 30, 2013]

§63.6590 What parts of my plant does this subpart cover?

This subpart applies to each affected source.

(a) *Affected source.* An affected source is any existing, new, or reconstructed stationary RICE located at a major or area source of HAP emissions, excluding stationary RICE being tested at a stationary RICE test cell/stand.

(1) *Existing stationary RICE.*

(i) For stationary RICE with a site rating of more than 500 brake horsepower (HP) located at a major source of HAP emissions, a stationary RICE is existing if you commenced construction or reconstruction of the stationary RICE before December 19, 2002.

(ii) For stationary RICE with a site rating of less than or equal to 500 brake HP located at a major source of HAP emissions, a stationary RICE is existing if you commenced construction or reconstruction of the stationary RICE before June 12, 2006.

(iii) For stationary RICE located at an area source of HAP emissions, a stationary RICE is existing if you commenced construction or reconstruction of the stationary RICE before June 12, 2006.

(iv) A change in ownership of an existing stationary RICE does not make that stationary RICE a new or reconstructed stationary RICE.

(2) *New stationary RICE.* (i) A stationary RICE with a site rating of more than 500 brake HP located at a major source of HAP emissions is new if you commenced construction of the stationary RICE on or after December 19, 2002.

(ii) A stationary RICE with a site rating of equal to or less than 500 brake HP located at a major source of HAP emissions is new if you commenced construction of the stationary RICE on or after June 12, 2006.

(iii) A stationary RICE located at an area source of HAP emissions is new if you commenced construction of the stationary RICE on or after June 12, 2006.

(3) *Reconstructed stationary RICE.* (i) A stationary RICE with a site rating of more than 500 brake HP located at a major source of HAP emissions is reconstructed if you meet the definition of reconstruction in §63.2 and reconstruction is commenced on or after December 19, 2002.

(ii) A stationary RICE with a site rating of equal to or less than 500 brake HP located at a major source of HAP emissions is reconstructed if you meet the definition of reconstruction in §63.2 and reconstruction is commenced on or after June 12, 2006.

(iii) A stationary RICE located at an area source of HAP emissions is reconstructed if you meet the definition of reconstruction in §63.2 and reconstruction is commenced on or after June 12, 2006.

(b) *Stationary RICE subject to limited requirements.* (1) An affected source which meets either of the criteria in paragraphs (b)(1)(i) through (ii) of this section does not have to meet the requirements of this subpart and of subpart A of this part except for the initial notification requirements of §63.6645(f).

(i) The stationary RICE is a new or reconstructed emergency stationary RICE with a site rating of more than 500 brake HP located at a major source of HAP emissions that does not operate or is not contractually obligated to be available for more than 15 hours per calendar year for the purposes specified in §63.6640(f)(2)(ii) and (iii).

(ii) The stationary RICE is a new or reconstructed limited use stationary RICE with a site rating of more than 500 brake HP located at a major source of HAP emissions.

(2) A new or reconstructed stationary RICE with a site rating of more than 500 brake HP located at a major source of HAP emissions which combusts landfill or digester gas equivalent to 10 percent or more of the gross heat input on an annual basis must meet the initial notification requirements of §63.6645(f) and the requirements of §§63.6625(c), 63.6650(g), and 63.6655(c). These stationary RICE do not have to meet the emission limitations and operating limitations of this subpart.

(3) The following stationary RICE do not have to meet the requirements of this subpart and of subpart A of this part, including initial notification requirements:

(i) Existing spark ignition 2 stroke lean burn (2SLB) stationary RICE with a site rating of more than 500 brake HP located at a major source of HAP emissions;

(ii) Existing spark ignition 4 stroke lean burn (4SLB) stationary RICE with a site rating of more than 500 brake HP located at a major source of HAP emissions;

(iii) Existing emergency stationary RICE with a site rating of more than 500 brake HP located at a major source of HAP emissions that does not operate or is not contractually obligated to be available for more than 15 hours per calendar year for the purposes specified in §63.6640(f)(2)(ii) and (iii).

(iv) Existing limited use stationary RICE with a site rating of more than 500 brake HP located at a major source of HAP emissions;

(v) Existing stationary RICE with a site rating of more than 500 brake HP located at a major source of HAP emissions that combusts landfill gas or digester gas equivalent to 10 percent or more of the gross heat input on an annual basis;

(c) *Stationary RICE subject to Regulations under 40 CFR Part 60.* An affected source that meets any of the criteria in paragraphs (c)(1) through (7) of this section must meet the requirements of this part by meeting the requirements of 40 CFR part 60 subpart IIII, for compression ignition engines or 40 CFR part 60 subpart JJJJ, for spark ignition engines. No further requirements apply for such engines under this part.

(1) A new or reconstructed stationary RICE located at an area source;

(2) A new or reconstructed 2SLB stationary RICE with a site rating of less than or equal to 500 brake HP located at a major source of HAP emissions;

(3) A new or reconstructed 4SLB stationary RICE with a site rating of less than 250 brake HP located at a major source of HAP emissions;

(4) A new or reconstructed spark ignition 4 stroke rich burn (4SRB) stationary RICE with a site rating of less than or equal to 500 brake HP located at a major source of HAP emissions;

(5) A new or reconstructed stationary RICE with a site rating of less than or equal to 500 brake HP located at a major source of HAP emissions which combusts landfill or digester gas equivalent to 10 percent or more of the gross heat input on an annual basis;

(6) A new or reconstructed emergency or limited use stationary RICE with a site rating of less than or equal to 500 brake HP located at a major source of HAP emissions;

(7) A new or reconstructed compression ignition (CI) stationary RICE with a site rating of less than or equal to 500 brake HP located at a major source of HAP emissions.

[69 FR 33506, June 15, 2004, as amended at 73 FR 3604, Jan. 18, 2008; 75 FR 9674, Mar. 3, 2010; 75 FR 37733, June 30, 2010; 75 FR 51588, Aug. 20, 2010; 78 FR 6700, Jan. 30, 2013]

§63.6595 When do I have to comply with this subpart?

(a) *Affected sources.* (1) If you have an existing stationary RICE, excluding existing non-emergency CI stationary RICE, with a site rating of more than 500 brake HP located at a major source of HAP emissions, you must comply with the applicable emission limitations, operating limitations and other requirements no later than June 15, 2007. If you have an existing non-emergency CI stationary RICE with a site rating of more than 500 brake HP located at a major source of HAP emissions, an existing stationary CI RICE with a site rating of less than or equal to 500 brake HP located at a major source of HAP emissions, or an existing stationary CI RICE located at an area source of HAP emissions, you must comply with the applicable emission limitations, operating limitations, and other requirements no later than May 3, 2013. If you have an existing stationary SI RICE with a site rating of less than or equal to 500 brake HP located at a major source of HAP emissions, or an existing stationary SI RICE located at an area source of HAP emissions, you must comply with the applicable emission limitations, operating limitations, and other requirements no later than October 19, 2013.

(2) If you start up your new or reconstructed stationary RICE with a site rating of more than 500 brake HP located at a major source of HAP emissions before August 16, 2004, you must comply with the applicable emission limitations and operating limitations in this subpart no later than August 16, 2004.

(3) If you start up your new or reconstructed stationary RICE with a site rating of more than 500 brake HP located at a major source of HAP emissions after August 16, 2004, you must comply with the applicable emission limitations and operating limitations in this subpart upon startup of your affected source.

(4) If you start up your new or reconstructed stationary RICE with a site rating of less than or equal to 500 brake HP located at a major source of HAP emissions before January 18, 2008, you must comply with the applicable emission limitations and operating limitations in this subpart no later than January 18, 2008.

(5) If you start up your new or reconstructed stationary RICE with a site rating of less than or equal to 500 brake HP located at a major source of HAP emissions after January 18, 2008, you must comply with the applicable emission limitations and operating limitations in this subpart upon startup of your affected source.

(6) If you start up your new or reconstructed stationary RICE located at an area source of HAP emissions before January 18, 2008, you must comply with the applicable emission limitations and operating limitations in this subpart no later than January 18, 2008.

(7) If you start up your new or reconstructed stationary RICE located at an area source of HAP emissions after January 18, 2008, you must comply with the applicable emission limitations and operating limitations in this subpart upon startup of your affected source.

(b) *Area sources that become major sources.* If you have an area source that increases its emissions or its potential to emit such that it becomes a major source of HAP, the compliance dates in paragraphs (b)(1) and (2) of this section apply to you.

(1) Any stationary RICE for which construction or reconstruction is commenced after the date when your area source becomes a major source of HAP must be in compliance with this subpart upon startup of your affected source.

(2) Any stationary RICE for which construction or reconstruction is commenced before your area source becomes a major source of HAP must be in compliance with the provisions of this subpart that are applicable to RICE located at major sources within 3 years after your area source becomes a major source of HAP.

(c) If you own or operate an affected source, you must meet the applicable notification requirements in §63.6645 and in 40 CFR part 63, subpart A.

[69 FR 33506, June 15, 2004, as amended at 73 FR 3604, Jan. 18, 2008; 75 FR 9675, Mar. 3, 2010; 75 FR 51589, Aug. 20, 2010; 78 FR 6701, Jan. 30, 2013]

Emission and Operating Limitations

§63.6600 What emission limitations and operating limitations must I meet if I own or operate a stationary RICE with a site rating of more than 500 brake HP located at a major source of HAP emissions?

Compliance with the numerical emission limitations established in this subpart is based on the results of testing the average of three 1-hour runs using the testing requirements and procedures in §63.6620 and Table 4 to this subpart.

(a) If you own or operate an existing, new, or reconstructed spark ignition 4SRB stationary RICE with a site rating of more than 500 brake HP located at a major source of HAP emissions, you must comply with the emission limitations in Table 1a to this subpart and the operating limitations in Table 1b to this subpart which apply to you.

(b) If you own or operate a new or reconstructed 2SLB stationary RICE with a site rating of more than 500 brake HP located at major source of HAP emissions, a new or reconstructed 4SLB stationary RICE with a site rating of more than 500 brake HP located at major source of HAP emissions, or a new or reconstructed CI stationary RICE with a site rating of more than 500 brake HP located at a major source of HAP emissions, you must comply with the emission limitations in Table 2a to this subpart and the operating limitations in Table 2b to this subpart which apply to you.

(c) If you own or operate any of the following stationary RICE with a site rating of more than 500 brake HP located at a major source of HAP emissions, you do not need to comply with the emission limitations in Tables 1a, 2a, 2c, and 2d to this subpart or operating limitations in Tables 1b and 2b to this subpart: an existing 2SLB stationary RICE; an existing 4SLB stationary RICE; a stationary RICE that combusts landfill gas or digester gas equivalent to 10 percent or more of the gross heat input on an annual basis; an emergency stationary RICE; or a limited use stationary RICE.

(d) If you own or operate an existing non-emergency stationary CI RICE with a site rating of more than 500 brake HP located at a major source of HAP emissions, you must comply with the emission limitations in Table 2c to this subpart and the operating limitations in Table 2b to this subpart which apply to you.

[73 FR 3605, Jan. 18, 2008, as amended at 75 FR 9675, Mar. 3, 2010]

§63.6601 What emission limitations must I meet if I own or operate a new or reconstructed 4SLB stationary RICE with a site rating of greater than or equal to 250 brake HP and less than or equal to 500 brake HP located at a major source of HAP emissions?

Compliance with the numerical emission limitations established in this subpart is based on the results of testing the average of three 1-hour runs using the testing requirements and procedures in §63.6620 and Table 4 to this subpart. If you own or operate a new or reconstructed 4SLB stationary RICE with a site rating of greater than or equal to 250 and less than or equal to 500 brake HP located at major source of HAP emissions manufactured on or after January 1, 2008, you must comply with the emission limitations in Table 2a to this subpart and the operating limitations in Table 2b to this subpart which apply to you.

[73 FR 3605, Jan. 18, 2008, as amended at 75 FR 9675, Mar. 3, 2010; 75 FR 51589, Aug. 20, 2010]

§63.6602 What emission limitations and other requirements must I meet if I own or operate an existing stationary RICE with a site rating of equal to or less than 500 brake HP located at a major source of HAP emissions?

If you own or operate an existing stationary RICE with a site rating of equal to or less than 500 brake HP located at a major source of HAP emissions, you must comply with the emission limitations and other requirements in Table 2c to this subpart which apply to you. Compliance with the numerical emission limitations established in this subpart is based on the results of testing the average of three 1-hour runs using the testing requirements and procedures in §63.6620 and Table 4 to this subpart.

[78 FR 6701, Jan. 30, 2013]

§63.6603 What emission limitations, operating limitations, and other requirements must I meet if I own or operate an existing stationary RICE located at an area source of HAP emissions?

Compliance with the numerical emission limitations established in this subpart is based on the results of testing the average of three 1-hour runs using the testing requirements and procedures in §63.6620 and Table 4 to this subpart.

(a) If you own or operate an existing stationary RICE located at an area source of HAP emissions, you must comply with the requirements in Table 2d to this subpart and the operating limitations in Table 2b to this subpart that apply to you.

(b) If you own or operate an existing stationary non-emergency CI RICE with a site rating of more than 300 HP located at an area source of HAP that meets either paragraph (b)(1) or (2) of this section, you do not have to meet the numerical CO emission limitations specified in Table 2d of this subpart. Existing stationary non-emergency CI RICE with a site rating of more than 300 HP located at an area source of HAP that meet either paragraph (b)(1) or (2) of this section must meet the management practices that are shown for stationary non-emergency CI RICE with a site rating of less than or equal to 300 HP in Table 2d of this subpart.

(1) The area source is located in an area of Alaska that is not accessible by the Federal Aid Highway System (FAHS).

(2) The stationary RICE is located at an area source that meets paragraphs (b)(2)(i), (ii), and (iii) of this section.

(i) The only connection to the FAHS is through the Alaska Marine Highway System (AMHS), or the stationary RICE operation is within an isolated grid in Alaska that is not connected to the statewide electrical grid referred to as the Alaska Railbelt Grid.

(ii) At least 10 percent of the power generated by the stationary RICE on an annual basis is used for residential purposes.

(iii) The generating capacity of the area source is less than 12 megawatts, or the stationary RICE is used exclusively for backup power for renewable energy.

(c) If you own or operate an existing stationary non-emergency CI RICE with a site rating of more than 300 HP located on an offshore vessel that is an area source of HAP and is a nonroad vehicle that is an Outer Continental Shelf (OCS) source as defined in 40 CFR 55.2, you do not have to meet the numerical CO emission limitations specified in Table 2d of this subpart. You must meet all of the following management practices:

(1) Change oil every 1,000 hours of operation or annually, whichever comes first. Sources have the option to utilize an oil analysis program as described in §63.6625(i) in order to extend the specified oil change requirement.

(2) Inspect and clean air filters every 750 hours of operation or annually, whichever comes first, and replace as necessary.

(3) Inspect fuel filters and belts, if installed, every 750 hours of operation or annually, whichever comes first, and replace as necessary.

(4) Inspect all flexible hoses every 1,000 hours of operation or annually, whichever comes first, and replace as necessary.

(d) If you own or operate an existing non-emergency CI RICE with a site rating of more than 300 HP located at an area source of HAP emissions that is certified to the Tier 1 or Tier 2 emission standards in Table 1 of 40 CFR 89.112 and that is subject to an enforceable state or local standard that requires the engine to be replaced no later than June 1, 2018, you may until January 1, 2015, or 12 years after the installation date of the engine (whichever is later), but not later than June 1, 2018, choose to comply with the management practices that are shown for stationary non-emergency CI RICE with a site rating of less than or equal to 300 HP in Table 2d of this subpart instead of the applicable emission limitations in Table 2d, operating limitations in Table 2b, and crankcase ventilation system requirements in §63.6625(g). You must comply with the emission limitations in Table 2d and operating limitations in Table 2b that apply for non-emergency CI RICE with a site rating of more than 300 HP located at an area source of HAP emissions by January 1, 2015, or 12 years after the installation date of the engine (whichever is later), but not later than June 1, 2018. You must also comply with the crankcase ventilation system requirements in §63.6625(g) by January 1, 2015, or 12 years after the installation date of the engine (whichever is later), but not later than June 1, 2018.

(e) If you own or operate an existing non-emergency CI RICE with a site rating of more than 300 HP located at an area source of HAP emissions that is certified to the Tier 3 (Tier 2 for engines above 560 kilowatt (kW)) emission standards in Table 1 of 40 CFR 89.112, you may comply with the requirements under this part by meeting the requirements for Tier 3 engines (Tier 2 for engines above 560 kW) in 40 CFR part 60 subpart IIII instead of the emission limitations and other requirements that would otherwise apply under this part for existing non-emergency CI RICE with a site rating of more than 300 HP located at an area source of HAP emissions.

(f) An existing non-emergency SI 4SLB and 4SRB stationary RICE with a site rating of more than 500 HP located at area sources of HAP must meet the definition of remote stationary RICE in §63.6675 on the initial compliance date for the engine, October 19, 2013, in order to be considered a remote stationary RICE under this subpart. Owners and operators of existing non-emergency SI 4SLB and 4SRB stationary RICE with a site rating of more than 500 HP located at area sources of HAP that meet the definition of remote stationary RICE in §63.6675 of this subpart as of October 19, 2013 must evaluate the status of their stationary RICE every 12 months. Owners and operators must keep records of the initial and annual evaluation of the status of the engine. If the evaluation indicates that the stationary RICE no longer meets the definition of remote stationary RICE in §63.6675 of this subpart, the owner or operator must comply with all of the requirements for existing non-emergency SI 4SLB and 4SRB stationary RICE with a site rating of more than 500 HP located at area sources of HAP that are not remote stationary RICE within 1 year of the evaluation.

[75 FR 9675, Mar. 3, 2010, as amended at 75 FR 51589, Aug. 20, 2010; 76 FR 12866, Mar. 9, 2011; 78 FR 6701, Jan. 30, 2013]

§63.6604 What fuel requirements must I meet if I own or operate a stationary CI RICE?

(a) If you own or operate an existing non-emergency, non-black start CI stationary RICE with a site rating of more than 300 brake HP with a displacement of less than 30 liters per cylinder that uses diesel fuel, you must use diesel fuel that meets the requirements in 40 CFR 80.510(b) for nonroad diesel fuel.

(b) Beginning January 1, 2015, if you own or operate an existing emergency CI stationary RICE with a site rating of more than 100 brake HP and a displacement of less than 30 liters per cylinder that uses diesel fuel and operates or is contractually obligated to be available for more than 15 hours per calendar year for the purposes specified in §63.6640(f)(2)(ii) and (iii) or that operates for the purpose specified in §63.6640(f)(4)(ii), you must use diesel fuel that meets the requirements in 40 CFR 80.510(b) for nonroad diesel fuel, except that any existing diesel fuel purchased (or otherwise obtained) prior to January 1, 2015, may be used until depleted.

(c) Beginning January 1, 2015, if you own or operate a new emergency CI stationary RICE with a site rating of more than 500 brake HP and a displacement of less than 30 liters per cylinder located at a major source of HAP that uses diesel fuel and operates or is contractually obligated to be available for more than 15 hours per calendar year for the purposes specified in §63.6640(f)(2)(ii) and (iii), you must use diesel fuel that meets the requirements in 40 CFR 80.510(b) for nonroad diesel fuel, except that any existing diesel fuel purchased (or otherwise obtained) prior to January 1, 2015, may be used until depleted.

(d) Existing CI stationary RICE located in Guam, American Samoa, the Commonwealth of the Northern Mariana Islands, at area sources in areas of Alaska that meet either §63.6603(b)(1) or §63.6603(b)(2), or are on offshore vessels that meet §63.6603(c) are exempt from the requirements of this section.

[78 FR 6702, Jan. 30, 2013]

General Compliance Requirements

§63.6605 What are my general requirements for complying with this subpart?

(a) You must be in compliance with the emission limitations, operating limitations, and other requirements in this subpart that apply to you at all times.

(b) At all times you must 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. The general duty to minimize emissions does not require you to make any further efforts to reduce emissions if levels required by this standard have been achieved. 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.

[75 FR 9675, Mar. 3, 2010, as amended at 78 FR 6702, Jan. 30, 2013]

Testing and Initial Compliance Requirements

§63.6610 By what date must I conduct the initial performance tests or other initial compliance demonstrations if I own or operate a stationary RICE with a site rating of more than 500 brake HP located at a major source of HAP emissions?

If you own or operate a stationary RICE with a site rating of more than 500 brake HP located at a major source of HAP emissions you are subject to the requirements of this section.

(a) You must conduct the initial performance test or other initial compliance demonstrations in Table 4 to this subpart that apply to you within 180 days after the compliance date that is specified for your stationary RICE in §63.6595 and according to the provisions in §63.7(a)(2).

(b) If you commenced construction or reconstruction between December 19, 2002 and June 15, 2004 and own or operate stationary RICE with a site rating of more than 500 brake HP located at a major source of HAP emissions, you must demonstrate initial compliance with either the proposed emission limitations or the promulgated emission limitations no later than February 10, 2005 or no later than 180 days after startup of the source, whichever is later, according to §63.7(a)(2)(ix).

(c) If you commenced construction or reconstruction between December 19, 2002 and June 15, 2004 and own or operate stationary RICE with a site rating of more than 500 brake HP located at a major source of HAP emissions, and you chose to comply with the proposed emission limitations when demonstrating initial compliance, you must conduct a second performance test to demonstrate compliance with the promulgated emission limitations by December 13, 2007 or after startup of the source, whichever is later, according to §63.7(a)(2)(ix).

(d) An owner or operator is not required to conduct an initial performance test on units for which a performance test has been previously conducted, but the test must meet all of the conditions described in paragraphs (d)(1) through (5) of this section.

(1) The test must have been conducted using the same methods specified in this subpart, and these methods must have been followed correctly.

(2) The test must not be older than 2 years.

- (3) The test must be reviewed and accepted by the Administrator.
- (4) Either no process or equipment changes must have been made since the test was performed, or the owner or operator must be able to demonstrate that the results of the performance test, with or without adjustments, reliably demonstrate compliance despite process or equipment changes.
- (5) The test must be conducted at any load condition within plus or minus 10 percent of 100 percent load.

[69 FR 33506, June 15, 2004, as amended at 73 FR 3605, Jan. 18, 2008]

§63.6611 By what date must I conduct the initial performance tests or other initial compliance demonstrations if I own or operate a new or reconstructed 4SLB SI stationary RICE with a site rating of greater than or equal to 250 and less than or equal to 500 brake HP located at a major source of HAP emissions?

If you own or operate a new or reconstructed 4SLB stationary RICE with a site rating of greater than or equal to 250 and less than or equal to 500 brake HP located at a major source of HAP emissions, you must conduct an initial performance test within 240 days after the compliance date that is specified for your stationary RICE in §63.6595 and according to the provisions specified in Table 4 to this subpart, as appropriate.

[73 FR 3605, Jan. 18, 2008, as amended at 75 FR 51589, Aug. 20, 2010]

§63.6612 By what date must I conduct the initial performance tests or other initial compliance demonstrations if I own or operate an existing stationary RICE with a site rating of less than or equal to 500 brake HP located at a major source of HAP emissions or an existing stationary RICE located at an area source of HAP emissions?

If you own or operate an existing stationary RICE with a site rating of less than or equal to 500 brake HP located at a major source of HAP emissions or an existing stationary RICE located at an area source of HAP emissions you are subject to the requirements of this section.

- (a) You must conduct any initial performance test or other initial compliance demonstration according to Tables 4 and 5 to this subpart that apply to you within 180 days after the compliance date that is specified for your stationary RICE in §63.6595 and according to the provisions in §63.7(a)(2).
- (b) An owner or operator is not required to conduct an initial performance test on a unit for which a performance test has been previously conducted, but the test must meet all of the conditions described in paragraphs (b)(1) through (4) of this section.
 - (1) The test must have been conducted using the same methods specified in this subpart, and these methods must have been followed correctly.

(2) The test must not be older than 2 years.

(3) The test must be reviewed and accepted by the Administrator.

(4) Either no process or equipment changes must have been made since the test was performed, or the owner or operator must be able to demonstrate that the results of the performance test, with or without adjustments, reliably demonstrate compliance despite process or equipment changes.

[75 FR 9676, Mar. 3, 2010, as amended at 75 FR 51589, Aug. 20, 2010]

§63.6615 When must I conduct subsequent performance tests?

If you must comply with the emission limitations and operating limitations, you must conduct subsequent performance tests as specified in Table 3 of this subpart.

§63.6620 What performance tests and other procedures must I use?

(a) You must conduct each performance test in Tables 3 and 4 of this subpart that applies to you.

(b) Each performance test must be conducted according to the requirements that this subpart specifies in Table 4 to this subpart. If you own or operate a non-operational stationary RICE that is subject to performance testing, you do not need to start up the engine solely to conduct the performance test. Owners and operators of a non-operational engine can conduct the performance test when the engine is started up again. The test must be conducted at any load condition within plus or minus 10 percent of 100 percent load for the stationary RICE listed in paragraphs (b)(1) through (4) of this section.

(1) Non-emergency 4SRB stationary RICE with a site rating of greater than 500 brake HP located at a major source of HAP emissions.

(2) New non-emergency 4SLB stationary RICE with a site rating of greater than or equal to 250 brake HP located at a major source of HAP emissions.

(3) New non-emergency 2SLB stationary RICE with a site rating of greater than 500 brake HP located at a major source of HAP emissions.

(4) New non-emergency CI stationary RICE with a site rating of greater than 500 brake HP located at a major source of HAP emissions.

(c) [Reserved]

(d) You must conduct three separate test runs for each performance test required in this section, as specified in §63.7(e)(3). Each test run must last at least 1 hour, unless otherwise specified in this subpart.

(e)(1) You must use Equation 1 of this section to determine compliance with the percent reduction requirement:

$$\frac{C_i - C_o}{C_i} \times 100 = R \quad (\text{Eq. 1})$$

Where:

C_i = concentration of carbon monoxide (CO), total hydrocarbons (THC), or formaldehyde at the control device inlet,

C_o = concentration of CO, THC, or formaldehyde at the control device outlet, and

R = percent reduction of CO, THC, or formaldehyde emissions.

(2) You must normalize the CO, THC, or formaldehyde concentrations at the inlet and outlet of the control device to a dry basis and to 15 percent oxygen, or an equivalent percent carbon dioxide (CO₂). If pollutant concentrations are to be corrected to 15 percent oxygen and CO₂ concentration is measured in lieu of oxygen concentration measurement, a CO₂ correction factor is needed. Calculate the CO₂ correction factor as described in paragraphs (e)(2)(i) through (iii) of this section.

(i) Calculate the fuel-specific F_o value for the fuel burned during the test using values obtained from Method 19, Section 5.2, and the following equation:

$$F_o = \frac{0.209 F_d}{F_c} \quad (\text{Eq. 2})$$

Where:

F_o = Fuel factor based on the ratio of oxygen volume to the ultimate CO_2 volume produced by the fuel at zero percent excess air.

0.209 = Fraction of air that is oxygen, percent/100.

F_d = Ratio of the volume of dry effluent gas to the gross calorific value of the fuel from Method 19, dsm^3/J ($dscf/106$ Btu).

F_c = Ratio of the volume of CO_2 produced to the gross calorific value of the fuel from Method 19, dsm^3/J ($dscf/106$ Btu)

(ii) Calculate the CO_2 correction factor for correcting measurement data to 15 percent O_2 , as follows:

$$X_{CO_2} = \frac{5.9}{F_o} \quad (\text{Eq. 3})$$

Where:

X_{CO_2} = CO_2 correction factor, percent.

5.9 = 20.9 percent O_2 —15 percent O_2 , the defined O_2 correction value, percent.

(iii) Calculate the CO, THC, and formaldehyde gas concentrations adjusted to 15 percent O_2 using CO_2 as follows:

$$C_{adj} = C_d \frac{X_{CO_2}}{\%CO_2} \quad (\text{Eq. 4})$$

Where:

C_{adj} = Calculated concentration of CO, THC, or formaldehyde adjusted to 15 percent O_2 .

C_d = Measured concentration of CO, THC, or formaldehyde, uncorrected.

X_{CO_2} = CO_2 correction factor, percent.

$\%CO_2$ = Measured CO_2 concentration measured, dry basis, percent.

(f) If you comply with the emission limitation to reduce CO and you are not using an oxidation catalyst, if you comply with the emission limitation to reduce formaldehyde and you are not using NSCR, or if you comply with the emission limitation to limit the concentration of formaldehyde in the stationary RICE exhaust and you are not using an oxidation catalyst or NSCR, you must petition the Administrator for operating limitations to be established during the initial performance test and continuously monitored thereafter; or for approval of no operating limitations. You must not conduct the initial performance test until after the petition has been approved by the Administrator.

(g) If you petition the Administrator for approval of operating limitations, your petition must include the information described in paragraphs (g)(1) through (5) of this section.

(1) Identification of the specific parameters you propose to use as operating limitations;

(2) A discussion of the relationship between these parameters and HAP emissions, identifying how HAP emissions change with changes in these parameters, and how limitations on these parameters will serve to limit HAP emissions;

(3) A discussion of how you will establish the upper and/or lower values for these parameters which will establish the limits on these parameters in the operating limitations;

- (4) A discussion identifying the methods you will use to measure and the instruments you will use to monitor these parameters, as well as the relative accuracy and precision of these methods and instruments; and
- (5) A discussion identifying the frequency and methods for recalibrating the instruments you will use for monitoring these parameters.
- (h) If you petition the Administrator for approval of no operating limitations, your petition must include the information described in paragraphs (h)(1) through (7) of this section.
- (1) Identification of the parameters associated with operation of the stationary RICE and any emission control device which could change intentionally (e.g., operator adjustment, automatic controller adjustment, etc.) or unintentionally (e.g., wear and tear, error, etc.) on a routine basis or over time;
- (2) A discussion of the relationship, if any, between changes in the parameters and changes in HAP emissions;
- (3) For the parameters which could change in such a way as to increase HAP emissions, a discussion of whether establishing limitations on the parameters would serve to limit HAP emissions;
- (4) For the parameters which could change in such a way as to increase HAP emissions, a discussion of how you could establish upper and/or lower values for the parameters which would establish limits on the parameters in operating limitations;
- (5) For the parameters, a discussion identifying the methods you could use to measure them and the instruments you could use to monitor them, as well as the relative accuracy and precision of the methods and instruments;
- (6) For the parameters, a discussion identifying the frequency and methods for recalibrating the instruments you could use to monitor them; and
- (7) A discussion of why, from your point of view, it is infeasible or unreasonable to adopt the parameters as operating limitations.
- (i) The engine percent load during a performance test must be determined by documenting the calculations, assumptions, and measurement devices used to measure or estimate the percent load in a specific application. A written report of the average percent load determination must be included in the notification of compliance status. The following information must be included in the written report: the engine model number, the engine manufacturer, the year of purchase, the manufacturer's site-rated brake horsepower, the ambient temperature, pressure, and humidity during the performance test, and all assumptions that were made to estimate or calculate percent load during the performance test must be clearly explained. If measurement devices such as flow meters, kilowatt meters, beta analyzers, stain gauges, etc. are used, the model number of the measurement device, and an estimate of its accurate in percentage of true value must be provided.

[69 FR 33506, June 15, 2004, as amended at 75 FR 9676, Mar. 3, 2010; 78 FR 6702, Jan. 30, 2013]

§63.6625 What are my monitoring, installation, collection, operation, and maintenance requirements?

- (a) If you elect to install a CEMS as specified in Table 5 of this subpart, you must install, operate, and maintain a CEMS to monitor CO and either O₂ or CO₂ according to the requirements in paragraphs (a)(1) through (4) of this section. If you are meeting a requirement to reduce CO emissions, the CEMS must be installed at both the inlet and outlet of the control device. If you are meeting a requirement to limit the concentration of CO, the CEMS must be installed at the outlet of the control device.
- (1) Each CEMS must be installed, operated, and maintained according to the applicable performance specifications of 40 CFR part 60, appendix B.
- (2) You must conduct an initial performance evaluation and an annual relative accuracy test audit (RATA) of each CEMS according to the requirements in §63.8 and according to the applicable performance specifications of 40 CFR

part 60, appendix B as well as daily and periodic data quality checks in accordance with 40 CFR part 60, appendix F, procedure 1.

(3) As specified in §63.8(c)(4)(ii), each CEMS must complete a minimum of one cycle of operation (sampling, analyzing, and data recording) for each successive 15-minute period. You must have at least two data points, with each representing a different 15-minute period, to have a valid hour of data.

(4) The CEMS data must be reduced as specified in §63.8(g)(2) and recorded in parts per million or parts per billion (as appropriate for the applicable limitation) at 15 percent oxygen or the equivalent CO₂ concentration.

(b) If you are required to install a continuous parameter monitoring system (CPMS) as specified in Table 5 of this subpart, you must install, operate, and maintain each CPMS according to the requirements in paragraphs (b)(1) through (6) of this section. For an affected source that is complying with the emission limitations and operating limitations on March 9, 2011, the requirements in paragraph (b) of this section are applicable September 6, 2011.

(1) You must prepare a site-specific monitoring plan that addresses the monitoring system design, data collection, and the quality assurance and quality control elements outlined in paragraphs (b)(1)(i) through (v) of this section and in §63.8(d). As specified in §63.8(f)(4), you may request approval of monitoring system quality assurance and quality control procedures alternative to those specified in paragraphs (b)(1) through (5) of this section in your site-specific monitoring plan.

(i) The performance criteria and design specifications for the monitoring system equipment, including the sample interface, detector signal analyzer, and data acquisition and calculations;

(ii) Sampling interface (e.g., thermocouple) location such that the monitoring system will provide representative measurements;

(iii) Equipment performance evaluations, system accuracy audits, or other audit procedures;

(iv) Ongoing operation and maintenance procedures in accordance with provisions in §63.8(c)(1)(ii) and (c)(3); and

(v) Ongoing reporting and recordkeeping procedures in accordance with provisions in §63.10(c), (e)(1), and (e)(2)(i).

(2) You must install, operate, and maintain each CPMS in continuous operation according to the procedures in your site-specific monitoring plan.

(3) The CPMS must collect data at least once every 15 minutes (see also §63.6635).

(4) For a CPMS for measuring temperature range, the temperature sensor must have a minimum tolerance of 2.8 degrees Celsius (5 degrees Fahrenheit) or 1 percent of the measurement range, whichever is larger.

(5) You must conduct the CPMS equipment performance evaluation, system accuracy audits, or other audit procedures specified in your site-specific monitoring plan at least annually.

(6) You must conduct a performance evaluation of each CPMS in accordance with your site-specific monitoring plan.

(c) If you are operating a new or reconstructed stationary RICE which fires landfill gas or digester gas equivalent to 10 percent or more of the gross heat input on an annual basis, you must monitor and record your fuel usage daily with separate fuel meters to measure the volumetric flow rate of each fuel. In addition, you must operate your stationary RICE in a manner which reasonably minimizes HAP emissions.

(d) If you are operating a new or reconstructed emergency 4SLB stationary RICE with a site rating of greater than or equal to 250 and less than or equal to 500 brake HP located at a major source of HAP emissions, you must install a non-resettable hour meter prior to the startup of the engine.

(e) If you own or operate any of the following stationary RICE, you must operate and maintain the stationary RICE and after-treatment control device (if any) according to the manufacturer's emission-related written instructions or develop your own maintenance plan which must provide to the extent practicable for the maintenance and operation of the engine in a manner consistent with good air pollution control practice for minimizing emissions:

- (1) An existing stationary RICE with a site rating of less than 100 HP located at a major source of HAP emissions;
- (2) An existing emergency or black start stationary RICE with a site rating of less than or equal to 500 HP located at a major source of HAP emissions;
- (3) An existing emergency or black start stationary RICE located at an area source of HAP emissions;
- (4) An existing non-emergency, non-black start stationary CI RICE with a site rating less than or equal to 300 HP located at an area source of HAP emissions;
- (5) An existing non-emergency, non-black start 2SLB stationary RICE located at an area source of HAP emissions;
- (6) An existing non-emergency, non-black start stationary RICE located at an area source of HAP emissions which combusts landfill or digester gas equivalent to 10 percent or more of the gross heat input on an annual basis.
- (7) An existing non-emergency, non-black start 4SLB stationary RICE with a site rating less than or equal to 500 HP located at an area source of HAP emissions;
- (8) An existing non-emergency, non-black start 4SRB stationary RICE with a site rating less than or equal to 500 HP located at an area source of HAP emissions;
- (9) An existing, non-emergency, non-black start 4SLB stationary RICE with a site rating greater than 500 HP located at an area source of HAP emissions that is operated 24 hours or less per calendar year; and
- (10) An existing, non-emergency, non-black start 4SRB stationary RICE with a site rating greater than 500 HP located at an area source of HAP emissions that is operated 24 hours or less per calendar year.

(f) If you own or operate an existing emergency stationary RICE with a site rating of less than or equal to 500 brake HP located at a major source of HAP emissions or an existing emergency stationary RICE located at an area source of HAP emissions, you must install a non-resettable hour meter if one is not already installed.

(g) If you own or operate an existing non-emergency, non-black start CI engine greater than or equal to 300 HP that is not equipped with a closed crankcase ventilation system, you must comply with either paragraph (g)(1) or paragraph (2) of this section. Owners and operators must follow the manufacturer's specified maintenance requirements for operating and maintaining the open or closed crankcase ventilation systems and replacing the crankcase filters, or can request the Administrator to approve different maintenance requirements that are as protective as manufacturer requirements. Existing CI engines located at area sources in areas of Alaska that meet either §63.6603(b)(1) or §63.6603(b)(2) do not have to meet the requirements of this paragraph (g). Existing CI engines located on offshore vessels that meet §63.6603(c) do not have to meet the requirements of this paragraph (g).

- (1) Install a closed crankcase ventilation system that prevents crankcase emissions from being emitted to the atmosphere, or
- (2) Install an open crankcase filtration emission control system that reduces emissions from the crankcase by filtering the exhaust stream to remove oil mist, particulates and metals.

(h) If you operate a new, reconstructed, or existing stationary engine, you must minimize the engine's time spent at idle during startup and minimize the engine's startup time to a period needed for appropriate and safe loading of the engine, not to exceed 30 minutes, after which time the emission standards applicable to all times other than startup in Tables 1a, 2a, 2c, and 2d to this subpart apply.

(i) If you own or operate a stationary CI engine that is subject to the work, operation or management practices in items 1 or 2 of Table 2c to this subpart or in items 1 or 4 of Table 2d to this subpart, you have the option of utilizing an oil analysis program in order to extend the specified oil change requirement in Tables 2c and 2d to this subpart. The oil analysis must be performed at the same frequency specified for changing the oil in Table 2c or 2d to this subpart. The analysis program must at a minimum analyze the following three parameters: Total Base Number, viscosity, and percent water content. The condemning limits for these parameters are as follows: Total Base Number is less than 30 percent of the Total Base Number of the oil when new; viscosity of the oil has changed by more than 20 percent from the viscosity of the oil when new; or percent water content (by volume) is greater than 0.5. If all of these condemning limits are not exceeded, the engine owner or operator is not required to change the oil. If any of the limits are exceeded, the engine owner or operator must change the oil within 2 business days of receiving the results of the analysis; if the engine is not in operation when the results of the analysis are received, the engine owner or operator must change the oil within 2 business days or before commencing operation, whichever is later. The owner or operator must keep records of the parameters that are analyzed as part of the program, the results of the analysis, and the oil changes for the engine. The analysis program must be part of the maintenance plan for the engine.

(j) If you own or operate a stationary SI engine that is subject to the work, operation or management practices in items 6, 7, or 8 of Table 2c to this subpart or in items 5, 6, 7, 9, or 11 of Table 2d to this subpart, you have the option of utilizing an oil analysis program in order to extend the specified oil change requirement in Tables 2c and 2d to this subpart. The oil analysis must be performed at the same frequency specified for changing the oil in Table 2c or 2d to this subpart. The analysis program must at a minimum analyze the following three parameters: Total Acid Number, viscosity, and percent water content. The condemning limits for these parameters are as follows: Total Acid Number increases by more than 3.0 milligrams of potassium hydroxide (KOH) per gram from Total Acid Number of the oil when new; viscosity of the oil has changed by more than 20 percent from the viscosity of the oil when new; or percent water content (by volume) is greater than 0.5. If all of these condemning limits are not exceeded, the engine owner or operator is not required to change the oil. If any of the limits are exceeded, the engine owner or operator must change the oil within 2 business days of receiving the results of the analysis; if the engine is not in operation when the results of the analysis are received, the engine owner or operator must change the oil within 2 business days or before commencing operation, whichever is later. The owner or operator must keep records of the parameters that are analyzed as part of the program, the results of the analysis, and the oil changes for the engine. The analysis program must be part of the maintenance plan for the engine.

[69 FR 33506, June 15, 2004, as amended at 73 FR 3606, Jan. 18, 2008; 75 FR 9676, Mar. 3, 2010; 75 FR 51589, Aug. 20, 2010; 76 FR 12866, Mar. 9, 2011; 78 FR 6703, Jan. 30, 2013]

§63.6630 How do I demonstrate initial compliance with the emission limitations, operating limitations, and other requirements?

(a) You must demonstrate initial compliance with each emission limitation, operating limitation, and other requirement that applies to you according to Table 5 of this subpart.

(b) During the initial performance test, you must establish each operating limitation in Tables 1b and 2b of this subpart that applies to you.

(c) You must submit the Notification of Compliance Status containing the results of the initial compliance demonstration according to the requirements in §63.6645.

(d) Non-emergency 4SRB stationary RICE complying with the requirement to reduce formaldehyde emissions by 76 percent or more can demonstrate initial compliance with the formaldehyde emission limit by testing for THC instead of formaldehyde. The testing must be conducted according to the requirements in Table 4 of this subpart. The average reduction of emissions of THC determined from the performance test must be equal to or greater than 30 percent.

(e) The initial compliance demonstration required for existing non-emergency 4SLB and 4SRB stationary RICE with a site rating of more than 500 HP located at an area source of HAP that are not remote stationary RICE and that are operated more than 24 hours per calendar year must be conducted according to the following requirements:

(1) The compliance demonstration must consist of at least three test runs.

(2) Each test run must be of at least 15 minute duration, except that each test conducted using the method in appendix A to this subpart must consist of at least one measurement cycle and include at least 2 minutes of test data phase measurement.

(3) If you are demonstrating compliance with the CO concentration or CO percent reduction requirement, you must measure CO emissions using one of the CO measurement methods specified in Table 4 of this subpart, or using appendix A to this subpart.

(4) If you are demonstrating compliance with the THC percent reduction requirement, you must measure THC emissions using Method 25A, reported as propane, of 40 CFR part 60, appendix A.

(5) You must measure O₂ using one of the O₂ measurement methods specified in Table 4 of this subpart. Measurements to determine O₂ concentration must be made at the same time as the measurements for CO or THC concentration.

(6) If you are demonstrating compliance with the CO or THC percent reduction requirement, you must measure CO or THC emissions and O₂ emissions simultaneously at the inlet and outlet of the control device.

[69 FR 33506, June 15, 2004, as amended at 78 FR 6704, Jan. 30, 2013]

Continuous Compliance Requirements

§63.6635 How do I monitor and collect data to demonstrate continuous compliance?

(a) If you must comply with emission and operating limitations, you must monitor and collect data according to this section.

(b) Except for monitor malfunctions, associated repairs, required performance evaluations, and required quality assurance or control activities, you must monitor continuously at all times that the stationary RICE is operating. A monitoring malfunction is any sudden, infrequent, not reasonably preventable failure of the monitoring to provide valid data. Monitoring failures that are caused in part by poor maintenance or careless operation are not malfunctions.

(c) You may not use data recorded during monitoring malfunctions, associated repairs, and required quality assurance or control activities in data averages and calculations used to report emission or operating levels. You must, however, use all the valid data collected during all other periods.

[69 FR 33506, June 15, 2004, as amended at 76 FR 12867, Mar. 9, 2011]

§63.6640 How do I demonstrate continuous compliance with the emission limitations, operating limitations, and other requirements?

(a) You must demonstrate continuous compliance with each emission limitation, operating limitation, and other requirements in Tables 1a and 1b, Tables 2a and 2b, Table 2c, and Table 2d to this subpart that apply to you according to methods specified in Table 6 to this subpart.

(b) You must report each instance in which you did not meet each emission limitation or operating limitation in Tables 1a and 1b, Tables 2a and 2b, Table 2c, and Table 2d to this subpart that apply to you. These instances are deviations from the emission and operating limitations in this subpart. These deviations must be reported according to the requirements in §63.6650. If you change your catalyst, you must reestablish the values of the operating parameters measured during the initial performance test. When you reestablish the values of your operating parameters, you must also conduct a performance test to demonstrate that you are meeting the required emission limitation applicable to your stationary RICE.

(c) The annual compliance demonstration required for existing non-emergency 4SLB and 4SRB stationary RICE with a site rating of more than 500 HP located at an area source of HAP that are not remote stationary RICE and that are operated more than 24 hours per calendar year must be conducted according to the following requirements:

- (1) The compliance demonstration must consist of at least one test run.
 - (2) Each test run must be of at least 15 minute duration, except that each test conducted using the method in appendix A to this subpart must consist of at least one measurement cycle and include at least 2 minutes of test data phase measurement.
 - (3) If you are demonstrating compliance with the CO concentration or CO percent reduction requirement, you must measure CO emissions using one of the CO measurement methods specified in Table 4 of this subpart, or using appendix A to this subpart.
 - (4) If you are demonstrating compliance with the THC percent reduction requirement, you must measure THC emissions using Method 25A, reported as propane, of 40 CFR part 60, appendix A.
 - (5) You must measure O₂ using one of the O₂ measurement methods specified in Table 4 of this subpart. Measurements to determine O₂ concentration must be made at the same time as the measurements for CO or THC concentration.
 - (6) If you are demonstrating compliance with the CO or THC percent reduction requirement, you must measure CO or THC emissions and O₂ emissions simultaneously at the inlet and outlet of the control device.
 - (7) If the results of the annual compliance demonstration show that the emissions exceed the levels specified in Table 6 of this subpart, the stationary RICE must be shut down as soon as safely possible, and appropriate corrective action must be taken (e.g., repairs, catalyst cleaning, catalyst replacement). The stationary RICE must be retested within 7 days of being restarted and the emissions must meet the levels specified in Table 6 of this subpart. If the retest shows that the emissions continue to exceed the specified levels, the stationary RICE must again be shut down as soon as safely possible, and the stationary RICE may not operate, except for purposes of startup and testing, until the owner/operator demonstrates through testing that the emissions do not exceed the levels specified in Table 6 of this subpart.
- (d) For new, reconstructed, and rebuilt stationary RICE, deviations from the emission or operating limitations that occur during the first 200 hours of operation from engine startup (engine burn-in period) are not violations. Rebuilt stationary RICE means a stationary RICE that has been rebuilt as that term is defined in 40 CFR 94.11(a).
- (e) You must also report each instance in which you did not meet the requirements in Table 8 to this subpart that apply to you. If you own or operate a new or reconstructed stationary RICE with a site rating of less than or equal to 500 brake HP located at a major source of HAP emissions (except new or reconstructed 4SLB engines greater than or equal to 250 and less than or equal to 500 brake HP), a new or reconstructed stationary RICE located at an area source of HAP emissions, or any of the following RICE with a site rating of more than 500 brake HP located at a major source of HAP emissions, you do not need to comply with the requirements in Table 8 to this subpart: An existing 2SLB stationary RICE, an existing 4SLB stationary RICE, an existing emergency stationary RICE, an existing limited use stationary RICE, or an existing stationary RICE which fires landfill gas or digester gas equivalent to 10 percent or more of the gross heat input on an annual basis. If you own or operate any of the following RICE with a site rating of more than 500 brake HP located at a major source of HAP emissions, you do not need to comply with the requirements in Table 8 to this subpart, except for the initial notification requirements: a new or reconstructed stationary RICE that combusts landfill gas or digester gas equivalent to 10 percent or more of the gross heat input on an annual basis, a new or reconstructed emergency stationary RICE, or a new or reconstructed limited use stationary RICE.
- (f) If you own or operate an emergency stationary RICE, you must operate the emergency stationary RICE according to the requirements in paragraphs (f)(1) through (4) of this section. In order for the engine to be considered an emergency stationary RICE under this subpart, any operation other than emergency operation, maintenance and testing, emergency demand response, and operation in non-emergency situations for 50 hours per year, as described in paragraphs (f)(1) through (4) of this section, is prohibited. If you do not operate the engine according to the requirements in paragraphs (f)(1) through (4) of this section, the engine will not be considered an emergency engine under this subpart and must meet all requirements for non-emergency engines.
- (1) There is no time limit on the use of emergency stationary RICE in emergency situations.

(2) You may operate your emergency stationary RICE for any combination of the purposes specified in paragraphs (f)(2)(i) through (iii) of this section for a maximum of 100 hours per calendar year. Any operation for non-emergency situations as allowed by paragraphs (f)(3) and (4) of this section counts as part of the 100 hours per calendar year allowed by this paragraph (f)(2).

(i) Emergency stationary RICE may be operated for maintenance checks and readiness testing, provided that the tests are recommended by federal, state or local government, the manufacturer, the vendor, the regional transmission organization or equivalent balancing authority and transmission operator, or the insurance company associated with the engine. The owner or operator may petition the Administrator for approval of additional hours to be used for maintenance checks and readiness testing, but a petition is not required if the owner or operator maintains records indicating that federal, state, or local standards require maintenance and testing of emergency RICE beyond 100 hours per calendar year.

(ii) Emergency stationary RICE may be operated for emergency demand response for periods in which the Reliability Coordinator under the North American Electric Reliability Corporation (NERC) Reliability Standard EOP-002-3, Capacity and Energy Emergencies (incorporated by reference, see §63.14), or other authorized entity as determined by the Reliability Coordinator, has declared an Energy Emergency Alert Level 2 as defined in the NERC Reliability Standard EOP-002-3.

(iii) Emergency stationary RICE may be operated for periods where there is a deviation of voltage or frequency of 5 percent or greater below standard voltage or frequency.

(3) Emergency stationary RICE located at major sources of HAP may be operated for up to 50 hours per calendar year in non-emergency situations. The 50 hours of operation in non-emergency situations are counted as part of the 100 hours per calendar year for maintenance and testing and emergency demand response provided in paragraph (f)(2) of this section. The 50 hours per year for non-emergency situations cannot be used for peak shaving or non-emergency demand response, or to generate income for a facility to supply power to an electric grid or otherwise supply power as part of a financial arrangement with another entity.

(4) Emergency stationary RICE located at area sources of HAP may be operated for up to 50 hours per calendar year in non-emergency situations. The 50 hours of operation in non-emergency situations are counted as part of the 100 hours per calendar year for maintenance and testing and emergency demand response provided in paragraph (f)(2) of this section. Except as provided in paragraphs (f)(4)(i) and (ii) of this section, the 50 hours per year for non-emergency situations cannot be used for peak shaving or non-emergency demand response, or to generate income for a facility to an electric grid or otherwise supply power as part of a financial arrangement with another entity.

(i) Prior to May 3, 2014, the 50 hours per year for non-emergency situations can be used for peak shaving or non-emergency demand response to generate income for a facility, or to otherwise supply power as part of a financial arrangement with another entity if the engine is operated as part of a peak shaving (load management program) with the local distribution system operator and the power is provided only to the facility itself or to support the local distribution system.

(ii) The 50 hours per year for non-emergency situations can be used to supply power as part of a financial arrangement with another entity if all of the following conditions are met:

(A) The engine is dispatched by the local balancing authority or local transmission and distribution system operator.

(B) The dispatch is intended to mitigate local transmission and/or distribution limitations so as to avert potential voltage collapse or line overloads that could lead to the interruption of power supply in a local area or region.

(C) The dispatch follows reliability, emergency operation or similar protocols that follow specific NERC, regional, state, public utility commission or local standards or guidelines.

(D) The power is provided only to the facility itself or to support the local transmission and distribution system.

(E) The owner or operator identifies and records the entity that dispatches the engine and the specific NERC, regional, state, public utility commission or local standards or guidelines that are being followed for dispatching the

engine. The local balancing authority or local transmission and distribution system operator may keep these records on behalf of the engine owner or operator.

[69 FR 33506, June 15, 2004, as amended at 71 FR 20467, Apr. 20, 2006; 73 FR 3606, Jan. 18, 2008; 75 FR 9676, Mar. 3, 2010; 75 FR 51591, Aug. 20, 2010; 78 FR 6704, Jan. 30, 2013]

Notifications, Reports, and Records

§63.6645 What notifications must I submit and when?

(a) You must submit all of the notifications in §§63.7(b) and (c), 63.8(e), (f)(4) and (f)(6), 63.9(b) through (e), and (g) and (h) that apply to you by the dates specified if you own or operate any of the following;

(1) An existing stationary RICE with a site rating of less than or equal to 500 brake HP located at a major source of HAP emissions.

(2) An existing stationary RICE located at an area source of HAP emissions.

(3) A stationary RICE with a site rating of more than 500 brake HP located at a major source of HAP emissions.

(4) A new or reconstructed 4SLB stationary RICE with a site rating of greater than or equal to 250 HP located at a major source of HAP emissions.

(5) This requirement does not apply if you own or operate an existing stationary RICE less than 100 HP, an existing stationary emergency RICE, or an existing stationary RICE that is not subject to any numerical emission standards.

(b) As specified in §63.9(b)(2), if you start up your stationary RICE with a site rating of more than 500 brake HP located at a major source of HAP emissions before the effective date of this subpart, you must submit an Initial Notification not later than December 13, 2004.

(c) If you start up your new or reconstructed stationary RICE with a site rating of more than 500 brake HP located at a major source of HAP emissions on or after August 16, 2004, you must submit an Initial Notification not later than 120 days after you become subject to this subpart.

(d) As specified in §63.9(b)(2), if you start up your stationary RICE with a site rating of equal to or less than 500 brake HP located at a major source of HAP emissions before the effective date of this subpart and you are required to submit an initial notification, you must submit an Initial Notification not later than July 16, 2008.

(e) If you start up your new or reconstructed stationary RICE with a site rating of equal to or less than 500 brake HP located at a major source of HAP emissions on or after March 18, 2008 and you are required to submit an initial notification, you must submit an Initial Notification not later than 120 days after you become subject to this subpart.

(f) If you are required to submit an Initial Notification but are otherwise not affected by the requirements of this subpart, in accordance with §63.6590(b), your notification should include the information in §63.9(b)(2)(i) through (v), and a statement that your stationary RICE has no additional requirements and explain the basis of the exclusion (for example, that it operates exclusively as an emergency stationary RICE if it has a site rating of more than 500 brake HP located at a major source of HAP emissions).

(g) If you are required to conduct a performance test, you must submit a Notification of Intent to conduct a performance test at least 60 days before the performance test is scheduled to begin as required in §63.7(b)(1).

(h) If you are required to conduct a performance test or other initial compliance demonstration as specified in Tables 4 and 5 to this subpart, you must submit a Notification of Compliance Status according to §63.9(h)(2)(ii).

(1) For each initial compliance demonstration required in Table 5 to this subpart that does not include a performance test, you must submit the Notification of Compliance Status before the close of business on the 30th day following the completion of the initial compliance demonstration.

(2) For each initial compliance demonstration required in Table 5 to this subpart that includes a performance test conducted according to the requirements in Table 3 to this subpart, you must submit the Notification of Compliance Status, including the performance test results, before the close of business on the 60th day following the completion of the performance test according to §63.10(d)(2).

(i) If you own or operate an existing non-emergency CI RICE with a site rating of more than 300 HP located at an area source of HAP emissions that is certified to the Tier 1 or Tier 2 emission standards in Table 1 of 40 CFR 89.112 and subject to an enforceable state or local standard requiring engine replacement and you intend to meet management practices rather than emission limits, as specified in §63.6603(d), you must submit a notification by March 3, 2013, stating that you intend to use the provision in §63.6603(d) and identifying the state or local regulation that the engine is subject to.

[73 FR 3606, Jan. 18, 2008, as amended at 75 FR 9677, Mar. 3, 2010; 75 FR 51591, Aug. 20, 2010; 78 FR 6705, Jan. 30, 2013]

§63.6650 What reports must I submit and when?

(a) You must submit each report in Table 7 of this subpart that applies to you.

(b) Unless the Administrator has approved a different schedule for submission of reports under §63.10(a), you must submit each report by the date in Table 7 of this subpart and according to the requirements in paragraphs (b)(1) through (b)(9) of this section.

(1) For semiannual Compliance reports, the first Compliance report must cover the period beginning on the compliance date that is specified for your affected source in §63.6595 and ending on June 30 or December 31, whichever date is the first date following the end of the first calendar half after the compliance date that is specified for your source in §63.6595.

(2) For semiannual Compliance reports, the first Compliance report must be postmarked or delivered no later than July 31 or January 31, whichever date follows the end of the first calendar half after the compliance date that is specified for your affected source in §63.6595.

(3) For semiannual Compliance reports, each subsequent Compliance report must cover the semiannual reporting period from January 1 through June 30 or the semiannual reporting period from July 1 through December 31.

(4) For semiannual Compliance reports, each subsequent Compliance report must be postmarked or delivered no later than July 31 or January 31, whichever date is the first date following the end of the semiannual reporting period.

(5) For each stationary RICE that is subject to permitting regulations pursuant to 40 CFR part 70 or 71, and if the permitting authority has established dates for submitting semiannual reports pursuant to 40 CFR 70.6(a)(3)(iii)(A) or 40 CFR 71.6 (a)(3)(iii)(A), you may submit the first and subsequent Compliance reports according to the dates the permitting authority has established instead of according to the dates in paragraphs (b)(1) through (b)(4) of this section.

(6) For annual Compliance reports, the first Compliance report must cover the period beginning on the compliance date that is specified for your affected source in §63.6595 and ending on December 31.

(7) For annual Compliance reports, the first Compliance report must be postmarked or delivered no later than January 31 following the end of the first calendar year after the compliance date that is specified for your affected source in §63.6595.

(8) For annual Compliance reports, each subsequent Compliance report must cover the annual reporting period from January 1 through December 31.

(9) For annual Compliance reports, each subsequent Compliance report must be postmarked or delivered no later than January 31.

(c) The Compliance report must contain the information in paragraphs (c)(1) through (6) of this section.

(1) Company name and address.

(2) Statement by a responsible official, with that official's name, title, and signature, certifying the accuracy of the content of the report.

(3) Date of report and beginning and ending dates of the reporting period.

(4) If you had a malfunction during the reporting period, the compliance report must include the number, duration, and a brief description for each type of malfunction which occurred during the reporting period 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 §63.6605(b), including actions taken to correct a malfunction.

(5) If there are no deviations from any emission or operating limitations that apply to you, a statement that there were no deviations from the emission or operating limitations during the reporting period.

(6) If there were no periods during which the continuous monitoring system (CMS), including CEMS and CPMS, was out-of-control, as specified in §63.8(c)(7), a statement that there were no periods during which the CMS was out-of-control during the reporting period.

(d) For each deviation from an emission or operating limitation that occurs for a stationary RICE where you are not using a CMS to comply with the emission or operating limitations in this subpart, the Compliance report must contain the information in paragraphs (c)(1) through (4) of this section and the information in paragraphs (d)(1) and (2) of this section.

(1) The total operating time of the stationary RICE at which the deviation occurred during the reporting period.

(2) Information on the number, duration, and cause of deviations (including unknown cause, if applicable), as applicable, and the corrective action taken.

(e) For each deviation from an emission or operating limitation occurring for a stationary RICE where you are using a CMS to comply with the emission and operating limitations in this subpart, you must include information in paragraphs (c)(1) through (4) and (e)(1) through (12) of this section.

(1) The date and time that each malfunction started and stopped.

(2) The date, time, and duration that each CMS was inoperative, except for zero (low-level) and high-level checks.

(3) The date, time, and duration that each CMS was out-of-control, including the information in §63.8(c)(8).

(4) The date and time that each deviation started and stopped, and whether each deviation occurred during a period of malfunction or during another period.

(5) A summary of the total duration of the deviation during the reporting period, and the total duration as a percent of the total source operating time during that reporting period.

(6) A breakdown of the total duration of the deviations during the reporting period into those that are due to control equipment problems, process problems, other known causes, and other unknown causes.

(7) A summary of the total duration of CMS downtime during the reporting period, and the total duration of CMS downtime as a percent of the total operating time of the stationary RICE at which the CMS downtime occurred during that reporting period.

(8) An identification of each parameter and pollutant (CO or formaldehyde) that was monitored at the stationary RICE.

(9) A brief description of the stationary RICE.

(10) A brief description of the CMS.

(11) The date of the latest CMS certification or audit.

(12) A description of any changes in CMS, processes, or controls since the last reporting period.

(f) Each affected source that has obtained a title V operating permit pursuant to 40 CFR part 70 or 71 must report all deviations as defined in this subpart in the semiannual monitoring report required by 40 CFR 70.6 (a)(3)(iii)(A) or 40 CFR 71.6(a)(3)(iii)(A). If an affected source submits a Compliance report pursuant to Table 7 of this subpart along with, or as part of, the semiannual monitoring report required by 40 CFR 70.6(a)(3)(iii)(A) or 40 CFR 71.6(a)(3)(iii)(A), and the Compliance report includes all required information concerning deviations from any emission or operating limitation in this subpart, submission of the Compliance report shall be deemed to satisfy any obligation to report the same deviations in the semiannual monitoring report. However, submission of a Compliance report shall not otherwise affect any obligation the affected source may have to report deviations from permit requirements to the permit authority.

(g) If you are operating as a new or reconstructed stationary RICE which fires landfill gas or digester gas equivalent to 10 percent or more of the gross heat input on an annual basis, you must submit an annual report according to Table 7 of this subpart by the date specified unless the Administrator has approved a different schedule, according to the information described in paragraphs (b)(1) through (b)(5) of this section. You must report the data specified in (g)(1) through (g)(3) of this section.

(1) Fuel flow rate of each fuel and the heating values that were used in your calculations. You must also demonstrate that the percentage of heat input provided by landfill gas or digester gas is equivalent to 10 percent or more of the total fuel consumption on an annual basis.

(2) The operating limits provided in your federally enforceable permit, and any deviations from these limits.

(3) Any problems or errors suspected with the meters.

(h) If you own or operate an emergency stationary RICE with a site rating of more than 100 brake HP that operates or is contractually obligated to be available for more than 15 hours per calendar year for the purposes specified in §63.6640(f)(2)(ii) and (iii) or that operates for the purpose specified in §63.6640(f)(4)(ii), you must submit an annual report according to the requirements in paragraphs (h)(1) through (3) of this section.

(1) The report must contain the following information:

(i) Company name and address where the engine is located.

(ii) Date of the report and beginning and ending dates of the reporting period.

(iii) Engine site rating and model year.

(iv) Latitude and longitude of the engine in decimal degrees reported to the fifth decimal place.

(v) Hours operated for the purposes specified in §63.6640(f)(2)(ii) and (iii), including the date, start time, and end time for engine operation for the purposes specified in §63.6640(f)(2)(ii) and (iii).

(vi) Number of hours the engine is contractually obligated to be available for the purposes specified in §63.6640(f)(2)(ii) and (iii).

(vii) Hours spent for operation for the purpose specified in §63.6640(f)(4)(ii), including the date, start time, and end time for engine operation for the purposes specified in §63.6640(f)(4)(ii). The report must also identify the entity that dispatched the engine and the situation that necessitated the dispatch of the engine.

(viii) If there were no deviations from the fuel requirements in §63.6604 that apply to the engine (if any), a statement that there were no deviations from the fuel requirements during the reporting period.

(ix) If there were deviations from the fuel requirements in §63.6604 that apply to the engine (if any), information on the number, duration, and cause of deviations, and the corrective action taken.

(2) The first annual report must cover the calendar year 2015 and must be submitted no later than March 31, 2016. Subsequent annual reports for each calendar year must be submitted no later than March 31 of the following calendar year.

(3) The annual report must be submitted electronically using the subpart specific reporting form in the Compliance and Emissions Data Reporting Interface (CEDRI) that is accessed through EPA's Central Data Exchange (CDX) (www.epa.gov/cdx). However, if the reporting form specific to this subpart is not available in CEDRI at the time that the report is due, the written report must be submitted to the Administrator at the appropriate address listed in §63.13.

[69 FR 33506, June 15, 2004, as amended at 75 FR 9677, Mar. 3, 2010; 78 FR 6705, Jan. 30, 2013]

§63.6655 What records must I keep?

(a) If you must comply with the emission and operating limitations, you must keep the records described in paragraphs (a)(1) through (a)(5), (b)(1) through (b)(3) and (c) of this section.

(1) A copy of each notification and report that you submitted to comply with this subpart, including all documentation supporting any Initial Notification or Notification of Compliance Status that you submitted, according to the requirement in §63.10(b)(2)(xiv).

(2) Records of the occurrence and duration of each malfunction of operation (*i.e.*, process equipment) or the air pollution control and monitoring equipment.

(3) Records of performance tests and performance evaluations as required in §63.10(b)(2)(viii).

(4) Records of all required maintenance performed on the air pollution control and monitoring equipment.

(5) Records of actions taken during periods of malfunction to minimize emissions in accordance with §63.6605(b), including corrective actions to restore malfunctioning process and air pollution control and monitoring equipment to its normal or usual manner of operation.

(b) For each CEMS or CPMS, you must keep the records listed in paragraphs (b)(1) through (3) of this section.

(1) Records described in §63.10(b)(2)(vi) through (xi).

(2) Previous (*i.e.*, superseded) versions of the performance evaluation plan as required in §63.8(d)(3).

(3) Requests for alternatives to the relative accuracy test for CEMS or CPMS as required in §63.8(f)(6)(i), if applicable.

(c) If you are operating a new or reconstructed stationary RICE which fires landfill gas or digester gas equivalent to 10 percent or more of the gross heat input on an annual basis, you must keep the records of your daily fuel usage monitors.

(d) You must keep the records required in Table 6 of this subpart to show continuous compliance with each emission or operating limitation that applies to you.

(e) You must keep records of the maintenance conducted on the stationary RICE in order to demonstrate that you operated and maintained the stationary RICE and after-treatment control device (if any) according to your own maintenance plan if you own or operate any of the following stationary RICE;

(1) An existing stationary RICE with a site rating of less than 100 brake HP located at a major source of HAP emissions.

(2) An existing stationary emergency RICE.

(3) An existing stationary RICE located at an area source of HAP emissions subject to management practices as shown in Table 2d to this subpart.

(f) If you own or operate any of the stationary RICE in paragraphs (f)(1) through (2) of this section, you must keep records of the hours of operation of the engine that is recorded through the non-resettable hour meter. The owner or operator must document how many hours are spent for emergency operation, including what classified the operation as emergency and how many hours are spent for non-emergency operation. If the engine is used for the purposes specified in §63.6640(f)(2)(ii) or (iii) or §63.6640(f)(4)(ii), the owner or operator must keep records of the notification of the emergency situation, and the date, start time, and end time of engine operation for these purposes.

(1) An existing emergency stationary RICE with a site rating of less than or equal to 500 brake HP located at a major source of HAP emissions that does not meet the standards applicable to non-emergency engines.

(2) An existing emergency stationary RICE located at an area source of HAP emissions that does not meet the standards applicable to non-emergency engines.

[69 FR 33506, June 15, 2004, as amended at 75 FR 9678, Mar. 3, 2010; 75 FR 51592, Aug. 20, 2010; 78 FR 6706, Jan. 30, 2013]

§63.6660 In what form and how long must I keep my records?

(a) Your records must be in a form suitable and readily available for expeditious review according to §63.10(b)(1).

(b) As specified in §63.10(b)(1), you must keep each record for 5 years following the date of each occurrence, measurement, maintenance, corrective action, report, or record.

(c) You must keep each record readily accessible in hard copy or electronic form for at least 5 years after the date of each occurrence, measurement, maintenance, corrective action, report, or record, according to §63.10(b)(1).

[69 FR 33506, June 15, 2004, as amended at 75 FR 9678, Mar. 3, 2010]

Other Requirements and Information

§63.6665 What parts of the General Provisions apply to me?

Table 8 to this subpart shows which parts of the General Provisions in §§63.1 through 63.15 apply to you. If you own or operate a new or reconstructed stationary RICE with a site rating of less than or equal to 500 brake HP located at a major source of HAP emissions (except new or reconstructed 4SLB engines greater than or equal to 250 and less than or equal to 500 brake HP), a new or reconstructed stationary RICE located at an area source of HAP emissions, or any of the following RICE with a site rating of more than 500 brake HP located at a major source of HAP emissions, you do not need to comply with any of the requirements of the General Provisions specified in Table 8: An existing 2SLB stationary RICE, an existing 4SLB stationary RICE, an existing stationary RICE that combusts landfill or digester gas equivalent to 10 percent or more of the gross heat input on an annual basis, an existing emergency stationary RICE, or an existing limited use stationary RICE. If you own or operate any of the following RICE with a

site rating of more than 500 brake HP located at a major source of HAP emissions, you do not need to comply with the requirements in the General Provisions specified in Table 8 except for the initial notification requirements: A new stationary RICE that combusts landfill gas or digester gas equivalent to 10 percent or more of the gross heat input on an annual basis, a new emergency stationary RICE, or a new limited use stationary RICE.

[75 FR 9678, Mar. 3, 2010]

§63.6670 Who implements and enforces this subpart?

(a) This subpart is implemented and enforced by the U.S. EPA, or a delegated authority such as your State, local, or tribal agency. If the U.S. EPA Administrator has delegated authority to your State, local, or tribal agency, then that agency (as well as the U.S. EPA) has the authority to implement and enforce this subpart. You should contact your U.S. EPA Regional Office to find out whether this subpart is delegated to your State, local, or tribal agency.

(b) In delegating implementation and enforcement authority of this subpart to a State, local, or tribal agency under 40 CFR part 63, subpart E, the authorities contained in paragraph (c) of this section are retained by the Administrator of the U.S. EPA 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:

(1) Approval of alternatives to the non-opacity emission limitations and operating limitations in §63.6600 under §63.6(g).

(2) Approval of major alternatives to test methods under §63.7(e)(2)(ii) and (f) and as defined in §63.90.

(3) Approval of major alternatives to monitoring under §63.8(f) and as defined in §63.90.

(4) Approval of major alternatives to recordkeeping and reporting under §63.10(f) and as defined in §63.90.

(5) Approval of a performance test which was conducted prior to the effective date of the rule, as specified in §63.6610(b).

§63.6675 What definitions apply to this subpart?

Terms used in this subpart are defined in the Clean Air Act (CAA); in 40 CFR 63.2, the General Provisions of this part; and in this section as follows:

Alaska Railbelt Grid means the service areas of the six regulated public utilities that extend from Fairbanks to Anchorage and the Kenai Peninsula. These utilities are Golden Valley Electric Association; Chugach Electric Association; Matanuska Electric Association; Homer Electric Association; Anchorage Municipal Light & Power; and the City of Seward Electric System.

Area source means any stationary source of HAP that is not a major source as defined in part 63.

Associated equipment as used in this subpart and as referred to in section 112(n)(4) of the CAA, means equipment associated with an oil or natural gas exploration or production well, and includes all equipment from the well bore to the point of custody transfer, except glycol dehydration units, storage vessels with potential for flash emissions, combustion turbines, and stationary RICE.

Backup power for renewable energy means an engine that provides backup power to a facility that generates electricity from renewable energy resources, as that term is defined in Alaska Statute 42.45.045(l)(5) (incorporated by reference, see §63.14).

Black start engine means an engine whose only purpose is to start up a combustion turbine.

CAA means the Clean Air Act (42 U.S.C. 7401 *et seq.*, as amended by Public Law 101-549, 104 Stat. 2399).

Commercial emergency stationary RICE means an emergency stationary RICE used in commercial establishments such as office buildings, hotels, stores, telecommunications facilities, restaurants, financial institutions such as banks, doctor's offices, and sports and performing arts facilities.

Compression ignition means relating to a type of stationary internal combustion engine that is not a spark ignition engine.

Custody transfer means the transfer of hydrocarbon liquids or natural gas: After processing and/or treatment in the producing operations, or from storage vessels or automatic transfer facilities or other such equipment, including product loading racks, to pipelines or any other forms of transportation. For the purposes of this subpart, the point at which such liquids or natural gas enters a natural gas processing plant is a point of custody transfer.

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 emission limitation or operating limitation;
- (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 or operating limitation in this subpart during malfunction, regardless or whether or not such failure is permitted by this subpart.
- (4) Fails to satisfy the general duty to minimize emissions established by §63.6(e)(1)(i).

Diesel engine means any stationary RICE in which a high boiling point liquid fuel injected into the combustion chamber ignites when the air charge has been compressed to a temperature sufficiently high for auto-ignition. This process is also known as compression ignition.

Diesel fuel means any liquid obtained from the distillation of petroleum with a boiling point of approximately 150 to 360 degrees Celsius. One commonly used form is fuel oil number 2. Diesel fuel also includes any non-distillate fuel with comparable physical and chemical properties (e.g. biodiesel) that is suitable for use in compression ignition engines.

Digester gas means any gaseous by-product of wastewater treatment typically formed through the anaerobic decomposition of organic waste materials and composed principally of methane and CO₂.

Dual-fuel engine means any stationary RICE in which a liquid fuel (typically diesel fuel) is used for compression ignition and gaseous fuel (typically natural gas) is used as the primary fuel.

Emergency stationary RICE means any stationary reciprocating internal combustion engine that meets all of the criteria in paragraphs (1) through (3) of this definition. All emergency stationary RICE must comply with the requirements specified in §63.6640(f) in order to be considered emergency stationary RICE. If the engine does not comply with the requirements specified in §63.6640(f), then it is not considered to be an emergency stationary RICE under this subpart.

- (1) The stationary RICE is operated to provide electrical power or mechanical work during an emergency situation. Examples include stationary RICE used to produce power for critical networks or equipment (including power supplied to portions of a facility) when electric power from the local utility (or the normal power source, if the facility runs on its own power production) is interrupted, or stationary RICE used to pump water in the case of fire or flood, etc.
- (2) The stationary RICE is operated under limited circumstances for situations not included in paragraph (1) of this definition, as specified in §63.6640(f).

(3) The stationary RICE operates as part of a financial arrangement with another entity in situations not included in paragraph (1) of this definition only as allowed in §63.6640(f)(2)(ii) or (iii) and §63.6640(f)(4)(i) or (ii).

Engine startup means the time from initial start until applied load and engine and associated equipment reaches steady state or normal operation. For stationary engine with catalytic controls, engine startup means the time from initial start until applied load and engine and associated equipment, including the catalyst, reaches steady state or normal operation.

Four-stroke engine means any type of engine which completes the power cycle in two crankshaft revolutions, with intake and compression strokes in the first revolution and power and exhaust strokes in the second revolution.

Gaseous fuel means a material used for combustion which is in the gaseous state at standard atmospheric temperature and pressure conditions.

Gasoline means any fuel sold in any State for use in motor vehicles and motor vehicle engines, or nonroad or stationary engines, and commonly or commercially known or sold as gasoline.

Glycol dehydration unit means a device in which a liquid glycol (including, but not limited to, ethylene glycol, diethylene glycol, or triethylene glycol) absorbent directly contacts a natural gas stream and absorbs water in a contact tower or absorption column (absorber). The glycol contacts and absorbs water vapor and other gas stream constituents from the natural gas and becomes "rich" glycol. This glycol is then regenerated in the glycol dehydration unit reboiler. The "lean" glycol is then recycled.

Hazardous air pollutants (HAP) means any air pollutants listed in or pursuant to section 112(b) of the CAA.

Institutional emergency stationary RICE means an emergency stationary RICE used in institutional establishments such as medical centers, nursing homes, research centers, institutions of higher education, correctional facilities, elementary and secondary schools, libraries, religious establishments, police stations, and fire stations.

ISO standard day conditions means 288 degrees Kelvin (15 degrees Celsius), 60 percent relative humidity and 101.3 kilopascals pressure.

Landfill gas means a gaseous by-product of the land application of municipal refuse typically formed through the anaerobic decomposition of waste materials and composed principally of methane and CO₂.

Lean burn engine means any two-stroke or four-stroke spark ignited engine that does not meet the definition of a rich burn engine.

Limited use stationary RICE means any stationary RICE that operates less than 100 hours per year.

Liquefied petroleum gas means any liquefied hydrocarbon gas obtained as a by-product in petroleum refining of natural gas production.

Liquid fuel means any fuel in liquid form at standard temperature and pressure, including but not limited to diesel, residual/crude oil, kerosene/naphtha (jet fuel), and gasoline.

Major Source, as used in this subpart, shall have the same meaning as in §63.2, except that:

(1) Emissions from any oil or gas exploration or production well (with its associated equipment (as defined in this section)) and emissions from any pipeline compressor station or pump station shall not be aggregated with emissions from other similar units, to determine whether such emission points or stations are major sources, even when emission points are in a contiguous area or under common control;

(2) For oil and gas production facilities, emissions from processes, operations, or equipment that are not part of the same oil and gas production facility, as defined in §63.1271 of subpart HHH of this part, shall not be aggregated;

(3) For production field facilities, only HAP emissions from glycol dehydration units, storage vessel with the potential for flash emissions, combustion turbines and reciprocating internal combustion engines shall be aggregated for a major source determination; and

(4) Emissions from processes, operations, and equipment that are not part of the same natural gas transmission and storage facility, as defined in §63.1271 of subpart HHH of this part, shall not be aggregated.

Malfunction means any sudden, infrequent, and not reasonably preventable failure of air pollution control equipment, process equipment, or a process to operate in a normal or usual manner which causes, or has the potential to cause, the emission limitations in an applicable standard to be exceeded. Failures that are caused in part by poor maintenance or careless operation are not malfunctions.

Natural gas means a naturally occurring mixture of hydrocarbon and non-hydrocarbon gases found in geologic formations beneath the Earth's surface, of which the principal constituent is methane. Natural gas may be field or pipeline quality.

Non-selective catalytic reduction (NSCR) means an add-on catalytic nitrogen oxides (NO_x) control device for rich burn engines that, in a two-step reaction, promotes the conversion of excess oxygen, NO_x, CO, and volatile organic compounds (VOC) into CO₂, nitrogen, and water.

Oil and gas production facility as used in this subpart means any grouping of equipment where hydrocarbon liquids are processed, upgraded (*i.e.*, remove impurities or other constituents to meet contract specifications), or stored prior to the point of custody transfer; or where natural gas is processed, upgraded, or stored prior to entering the natural gas transmission and storage source category. For purposes of a major source determination, facility (including a building, structure, or installation) means oil and natural gas production and processing equipment that is located within the boundaries of an individual surface site as defined in this section. Equipment that is part of a facility will typically be located within close proximity to other equipment located at the same facility. Pieces of production equipment or groupings of equipment located on different oil and gas leases, mineral fee tracts, lease tracts, subsurface or surface unit areas, surface fee tracts, surface lease tracts, or separate surface sites, whether or not connected by a road, waterway, power line or pipeline, shall not be considered part of the same facility. Examples of facilities in the oil and natural gas production source category include, but are not limited to, well sites, satellite tank batteries, central tank batteries, a compressor station that transports natural gas to a natural gas processing plant, and natural gas processing plants.

Oxidation catalyst means an add-on catalytic control device that controls CO and VOC by oxidation.

Peaking unit or engine means any standby engine intended for use during periods of high demand that are not emergencies.

Percent load means the fractional power of an engine compared to its maximum manufacturer's design capacity at engine site conditions. Percent load may range between 0 percent to above 100 percent.

Potential to emit means the maximum capacity of a stationary source to emit a pollutant under its physical and operational design. Any physical or operational limitation on the capacity of the stationary source to emit a pollutant, including air pollution control equipment and restrictions on hours of operation or on the type or amount of material combusted, stored, or processed, shall be treated as part of its design if the limitation or the effect it would have on emissions is federally enforceable. For oil and natural gas production facilities subject to subpart HH of this part, the potential to emit provisions in §63.760(a) may be used. For natural gas transmission and storage facilities subject to subpart HHH of this part, the maximum annual facility gas throughput for storage facilities may be determined according to §63.1270(a)(1) and the maximum annual throughput for transmission facilities may be determined according to §63.1270(a)(2).

Production field facility means those oil and gas production facilities located prior to the point of custody transfer.

Production well means any hole drilled in the earth from which crude oil, condensate, or field natural gas is extracted.

Propane means a colorless gas derived from petroleum and natural gas, with the molecular structure C₃H₈.

Remote stationary RICE means stationary RICE meeting any of the following criteria:

(1) Stationary RICE located in an offshore area that is beyond the line of ordinary low water along that portion of the coast of the United States that is in direct contact with the open seas and beyond the line marking the seaward limit of inland waters.

(2) Stationary RICE located on a pipeline segment that meets both of the criteria in paragraphs (2)(i) and (ii) of this definition.

(i) A pipeline segment with 10 or fewer buildings intended for human occupancy and no buildings with four or more stories within 220 yards (200 meters) on either side of the centerline of any continuous 1-mile (1.6 kilometers) length of pipeline. Each separate dwelling unit in a multiple dwelling unit building is counted as a separate building intended for human occupancy.

(ii) The pipeline segment does not lie within 100 yards (91 meters) of either a building or a small, well-defined outside area (such as a playground, recreation area, outdoor theater, or other place of public assembly) that is occupied by 20 or more persons on at least 5 days a week for 10 weeks in any 12-month period. The days and weeks need not be consecutive. The building or area is considered occupied for a full day if it is occupied for any portion of the day.

(iii) For purposes of this paragraph (2), the term pipeline segment means all parts of those physical facilities through which gas moves in transportation, including but not limited to pipe, valves, and other appurtenance attached to pipe, compressor units, metering stations, regulator stations, delivery stations, holders, and fabricated assemblies. Stationary RICE located within 50 yards (46 meters) of the pipeline segment providing power for equipment on a pipeline segment are part of the pipeline segment. Transportation of gas means the gathering, transmission, or distribution of gas by pipeline, or the storage of gas. A building is intended for human occupancy if its primary use is for a purpose involving the presence of humans.

(3) Stationary RICE that are not located on gas pipelines and that have 5 or fewer buildings intended for human occupancy and no buildings with four or more stories within a 0.25 mile radius around the engine. A building is intended for human occupancy if its primary use is for a purpose involving the presence of humans.

Residential emergency stationary RICE means an emergency stationary RICE used in residential establishments such as homes or apartment buildings.

Responsible official means responsible official as defined in 40 CFR 70.2.

Rich burn engine means any four-stroke spark ignited engine where the manufacturer's recommended operating air/fuel ratio divided by the stoichiometric air/fuel ratio at full load conditions is less than or equal to 1.1. Engines originally manufactured as rich burn engines, but modified prior to December 19, 2002 with passive emission control technology for NO_x (such as pre-combustion chambers) will be considered lean burn engines. Also, existing engines where there are no manufacturer's recommendations regarding air/fuel ratio will be considered a rich burn engine if the excess oxygen content of the exhaust at full load conditions is less than or equal to 2 percent.

Site-rated HP means the maximum manufacturer's design capacity at engine site conditions.

Spark ignition means relating to either: A gasoline-fueled engine; or any other type of engine with a spark plug (or other sparking device) and with operating characteristics significantly similar to the theoretical Otto combustion cycle. Spark ignition engines usually use a throttle to regulate intake air flow to control power during normal operation. Dual-fuel engines in which a liquid fuel (typically diesel fuel) is used for CI and gaseous fuel (typically natural gas) is used as the primary fuel at an annual average ratio of less than 2 parts diesel fuel to 100 parts total fuel on an energy equivalent basis are spark ignition engines.

Stationary reciprocating internal combustion engine (RICE) means any reciprocating internal combustion engine which uses reciprocating motion to convert heat energy into mechanical work and which is not mobile. Stationary RICE differ from mobile RICE in that a stationary RICE is not a non-road engine as defined at 40 CFR 1068.30, and is not used to propel a motor vehicle or a vehicle used solely for competition.

Stationary RICE test cell/stand means an engine test cell/stand, as defined in subpart P P P P P of this part, that tests stationary RICE.

Stoichiometric means the theoretical air-to-fuel ratio required for complete combustion.

Storage vessel with the potential for flash emissions means any storage vessel that contains a hydrocarbon liquid with a stock tank gas-to-oil ratio equal to or greater than 0.31 cubic meters per liter and an American Petroleum Institute gravity equal to or greater than 40 degrees and an actual annual average hydrocarbon liquid throughput equal to or greater than 79,500 liters per day. Flash emissions occur when dissolved hydrocarbons in the fluid evolve from solution when the fluid pressure is reduced.

Subpart means 40 CFR part 63, subpart ZZZZ.

Surface site means any combination of one or more graded pad sites, gravel pad sites, foundations, platforms, or the immediate physical location upon which equipment is physically affixed.

Two-stroke engine means a type of engine which completes the power cycle in single crankshaft revolution by combining the intake and compression operations into one stroke and the power and exhaust operations into a second stroke. This system requires auxiliary scavenging and inherently runs lean of stoichiometric.

[69 FR 33506, June 15, 2004, as amended at 71 FR 20467, Apr. 20, 2006; 73 FR 3607, Jan. 18, 2008; 75 FR 9679, Mar. 3, 2010; 75 FR 51592, Aug. 20, 2010; 76 FR 12867, Mar. 9, 2011; 78 FR 6706, Jan. 30, 2013]

Table 1a to Subpart ZZZZ of Part 63—Emission Limitations for Existing, New, and Reconstructed Spark Ignition, 4SRB Stationary RICE >500 HP Located at a Major Source of HAP Emissions

As stated in §§63.6600 and 63.6640, you must comply with the following emission limitations at 100 percent load plus or minus 10 percent for existing, new and reconstructed 4SRB stationary RICE >500 HP located at a major source of HAP emissions:

For each . . .	You must meet the following emission limitation, except during periods of startup . . .	During periods of startup you must . . .
1. 4SRB stationary RICE	a. Reduce formaldehyde emissions by 76 percent or more. If you commenced construction or reconstruction between December 19, 2002 and June 15, 2004, you may reduce formaldehyde emissions by 75 percent or more until June 15, 2007 or	Minimize the engine's time spent at idle and minimize the engine's startup time at startup to a period needed for appropriate and safe loading of the engine, not to exceed 30 minutes, after which time the non-startup emission limitations apply. ¹
	b. Limit the concentration of formaldehyde in the stationary RICE exhaust to 350 ppbvd or less at 15 percent O ₂	

¹ Sources can petition the Administrator pursuant to the requirements of 40 CFR 63.6(g) for alternative work practices.

[75 FR 9679, Mar. 3, 2010, as amended at 75 FR 51592, Aug. 20, 2010]

Table 1b to Subpart ZZZZ of Part 63—Operating Limitations for Existing, New, and Reconstructed SI 4SRB Stationary RICE >500 HP Located at a Major Source of HAP Emissions

As stated in §§63.6600, 63.6603, 63.6630 and 63.6640, you must comply with the following operating limitations for existing, new and reconstructed 4SRB stationary RICE >500 HP located at a major source of HAP emissions:

For each . . .	You must meet the following operating limitation, except during periods of startup . . .
1. existing, new and reconstructed 4SRB stationary RICE >500 HP located at a major source of HAP emissions complying with the requirement to reduce formaldehyde emissions by 76 percent or more (or by 75 percent or more, if applicable) and using NSCR; or existing, new and reconstructed 4SRB stationary RICE >500 HP located at a major source of HAP emissions complying with the requirement to limit the concentration of formaldehyde in the stationary RICE exhaust to 350 ppbvd or less at 15 percent O ₂ and using NSCR;	a. maintain your catalyst so that the pressure drop across the catalyst does not change by more than 2 inches of water at 100 percent load plus or minus 10 percent from the pressure drop across the catalyst measured during the initial performance test; and b. maintain the temperature of your stationary RICE exhaust so that the catalyst inlet temperature is greater than or equal to 750 °F and less than or equal to 1250 °F. ¹
2. existing, new and reconstructed 4SRB stationary RICE >500 HP located at a major source of HAP emissions complying with the requirement to reduce formaldehyde emissions by 76 percent or more (or by 75 percent or more, if applicable) and not using NSCR; or	Comply with any operating limitations approved by the Administrator.
existing, new and reconstructed 4SRB stationary RICE >500 HP located at a major source of HAP emissions complying with the requirement to limit the concentration of formaldehyde in the stationary RICE exhaust to 350 ppbvd or less at 15 percent O ₂ and not using NSCR.	

¹Sources can petition the Administrator pursuant to the requirements of 40 CFR 63.8(f) for a different temperature range.

[78 FR 6706, Jan. 30, 2013]

Table 2a to Subpart ZZZZ of Part 63—Emission Limitations for New and Reconstructed 2SLB and Compression Ignition Stationary RICE >500 HP and New and Reconstructed 4SLB Stationary RICE ≥250 HP Located at a Major Source of HAP Emissions

As stated in §§63.6600 and 63.6640, you must comply with the following emission limitations for new and reconstructed lean burn and new and reconstructed compression ignition stationary RICE at 100 percent load plus or minus 10 percent:

For each . . .	You must meet the following emission limitation, except during periods of startup . . .	During periods of startup you must . . .
1. 2SLB stationary RICE	a. Reduce CO emissions by 58 percent or more; or b. Limit concentration of formaldehyde in the stationary RICE exhaust to 12 ppmvd or less at 15 percent O ₂ . If you commenced construction or reconstruction between December 19, 2002 and June 15, 2004, you may limit concentration of formaldehyde to 17 ppmvd or less at 15 percent O ₂ until June 15, 2007	Minimize the engine's time spent at idle and minimize the engine's startup time at startup to a period needed for appropriate and safe loading of the engine, not to exceed 30 minutes, after which time the non-startup emission limitations apply. ¹
2. 4SLB stationary RICE	a. Reduce CO emissions by 93 percent or more; or	
	b. Limit concentration of formaldehyde in the stationary RICE exhaust to 14 ppmvd or less at 15 percent O ₂	

For each . . .	You must meet the following emission limitation, except during periods of startup . . .	During periods of startup you must . . .
3. CI stationary RICE	a. Reduce CO emissions by 70 percent or more; or	
	b. Limit concentration of formaldehyde in the stationary RICE exhaust to 580 ppbvd or less at 15 percent O ₂	

¹Sources can petition the Administrator pursuant to the requirements of 40 CFR 63.6(g) for alternative work practices.

[75 FR 9680, Mar. 3, 2010]

Table 2b to Subpart ZZZZ of Part 63—Operating Limitations for New and Reconstructed 2SLB and CI Stationary RICE >500 HP Located at a Major Source of HAP Emissions, New and Reconstructed 4SLB Stationary RICE ≥250 HP Located at a Major Source of HAP Emissions, Existing CI Stationary RICE >500 HP

As stated in §§63.6600, 63.6601, 63.6603, 63.6630, and 63.6640, you must comply with the following operating limitations for new and reconstructed 2SLB and CI stationary RICE >500 HP located at a major source of HAP emissions; new and reconstructed 4SLB stationary RICE ≥250 HP located at a major source of HAP emissions; and existing CI stationary RICE >500 HP:

For each . . .	You must meet the following operating limitation, except during periods of startup . . .
1. New and reconstructed 2SLB and CI stationary RICE >500 HP located at a major source of HAP emissions and new and reconstructed 4SLB stationary RICE ≥250 HP located at a major source of HAP emissions complying with the requirement to reduce CO emissions and using an oxidation catalyst; and New and reconstructed 2SLB and CI stationary RICE >500 HP located at a major source of HAP emissions and new and reconstructed 4SLB stationary RICE ≥250 HP located at a major source of HAP emissions complying with the requirement to limit the concentration of formaldehyde in the stationary RICE exhaust and using an oxidation catalyst.	a. maintain your catalyst so that the pressure drop across the catalyst does not change by more than 2 inches of water at 100 percent load plus or minus 10 percent from the pressure drop across the catalyst that was measured during the initial performance test; and b. maintain the temperature of your stationary RICE exhaust so that the catalyst inlet temperature is greater than or equal to 450 °F and less than or equal to 1350 °F. ¹
2. Existing CI stationary RICE >500 HP complying with the requirement to limit or reduce the concentration of CO in the stationary RICE exhaust and using an oxidation catalyst	a. maintain your catalyst so that the pressure drop across the catalyst does not change by more than 2 inches of water from the pressure drop across the catalyst that was measured during the initial performance test; and
	b. maintain the temperature of your stationary RICE exhaust so that the catalyst inlet temperature is greater than or equal to 450 °F and less than or equal to 1350 °F. ¹
3. New and reconstructed 2SLB and CI stationary RICE >500 HP located at a major source of HAP emissions and new and reconstructed 4SLB stationary RICE ≥250 HP located at a major source of HAP emissions complying with the requirement to reduce CO emissions and not using an oxidation catalyst; and	Comply with any operating limitations approved by the Administrator.
New and reconstructed 2SLB and CI stationary RICE >500 HP located at a major source of HAP emissions and new and reconstructed 4SLB stationary RICE ≥250 HP located at a major source of HAP emissions complying with the requirement to limit the concentration of formaldehyde in the stationary RICE exhaust and not using an oxidation catalyst; and	

For each . . .	You must meet the following operating limitation, except during periods of startup . . .
existing CI stationary RICE >500 HP complying with the requirement to limit or reduce the concentration of CO in the stationary RICE exhaust and not using an oxidation catalyst.	

¹Sources can petition the Administrator pursuant to the requirements of 40 CFR 63.8(f) for a different temperature range.

[78 FR 6707, Jan. 30, 2013]

Table 2c to Subpart ZZZZ of Part 63—Requirements for Existing Compression Ignition Stationary RICE Located at a Major Source of HAP Emissions and Existing Spark Ignition Stationary RICE ≤500 HP Located at a Major Source of HAP Emissions

As stated in §§63.6600, 63.6602, and 63.6640, you must comply with the following requirements for existing compression ignition stationary RICE located at a major source of HAP emissions and existing spark ignition stationary RICE ≤500 HP located at a major source of HAP emissions:

For each . . .	You must meet the following requirement, except during periods of startup . . .	During periods of startup you must . . .
1. Emergency stationary CI RICE and black start stationary CI RICE ¹	a. Change oil and filter every 500 hours of operation or annually, whichever comes first. ² b. Inspect air cleaner every 1,000 hours of operation or annually, whichever comes first, and replace as necessary; c. Inspect all hoses and belts every 500 hours of operation or annually, whichever comes first, and replace as necessary. ³	Minimize the engine's time spent at idle and minimize the engine's startup time at startup to a period needed for appropriate and safe loading of the engine, not to exceed 30 minutes, after which time the non-startup emission limitations apply. ³
2. Non-Emergency, non-black start stationary CI RICE <100 HP	a. Change oil and filter every 1,000 hours of operation or annually, whichever comes first. ² b. Inspect air cleaner every 1,000 hours of operation or annually, whichever comes first, and replace as necessary; c. Inspect all hoses and belts every 500 hours of operation or annually, whichever comes first, and replace as necessary. ³	
3. Non-Emergency, non-black start CI stationary RICE 100≤HP≤300 HP	Limit concentration of CO in the stationary RICE exhaust to 230 ppmvd or less at 15 percent O ₂ .	

For each . . .	You must meet the following requirement, except during periods of startup . . .	During periods of startup you must . . .
4. Non-Emergency, non-black start CI stationary RICE 300<HP≤500	a. Limit concentration of CO in the stationary RICE exhaust to 49 ppmvd or less at 15 percent O ₂ ; or b. Reduce CO emissions by 70 percent or more.	
5. Non-Emergency, non-black start stationary CI RICE >500 HP	a. Limit concentration of CO in the stationary RICE exhaust to 23 ppmvd or less at 15 percent O ₂ ; or b. Reduce CO emissions by 70 percent or more.	
6. Emergency stationary SI RICE and black start stationary SI RICE. ¹	a. Change oil and filter every 500 hours of operation or annually, whichever comes first; ² b. Inspect spark plugs every 1,000 hours of operation or annually, whichever comes first, and replace as necessary; c. Inspect all hoses and belts every 500 hours of operation or annually, whichever comes first, and replace as necessary. ³	
7. Non-Emergency, non-black start stationary SI RICE <100 HP that are not 2SLB stationary RICE	a. Change oil and filter every 1,440 hours of operation or annually, whichever comes first; ² b. Inspect spark plugs every 1,440 hours of operation or annually, whichever comes first, and replace as necessary;	
	c. Inspect all hoses and belts every 1,440 hours of operation or annually, whichever comes first, and replace as necessary. ³	
8. Non-Emergency, non-black start 2SLB stationary SI RICE <100 HP	a. Change oil and filter every 4,320 hours of operation or annually, whichever comes first; ² b. Inspect spark plugs every 4,320 hours of operation or annually, whichever comes first, and replace as necessary;	
	c. Inspect all hoses and belts every 4,320 hours of operation or annually, whichever comes first, and replace as necessary. ³	

For each . . .	You must meet the following requirement, except during periods of startup . . .	During periods of startup you must . . .
9. Non-emergency, non-black start 2SLB stationary RICE 100≤HP≤500	Limit concentration of CO in the stationary RICE exhaust to 225 ppmvd or less at 15 percent O ₂ .	
10. Non-emergency, non-black start 4SLB stationary RICE 100≤HP≤500	Limit concentration of CO in the stationary RICE exhaust to 47 ppmvd or less at 15 percent O ₂ .	
11. Non-emergency, non-black start 4SRB stationary RICE 100≤HP≤500	Limit concentration of formaldehyde in the stationary RICE exhaust to 10.3 ppmvd or less at 15 percent O ₂ .	
12. Non-emergency, non-black start stationary RICE 100≤HP≤500 which combusts landfill or digester gas equivalent to 10 percent or more of the gross heat input on an annual basis	Limit concentration of CO in the stationary RICE exhaust to 177 ppmvd or less at 15 percent O ₂ .	

¹If an emergency engine is operating during an emergency and it is not possible to shut down the engine in order to perform the work practice requirements on the schedule required in Table 2c of this subpart, or if performing the work practice on the required schedule would otherwise pose an unacceptable risk under federal, state, or local law, the work practice can be delayed until the emergency is over or the unacceptable risk under federal, state, or local law has abated. The work practice should be performed as soon as practicable after the emergency has ended or the unacceptable risk under federal, state, or local law has abated. Sources must report any failure to perform the work practice on the schedule required and the federal, state or local law under which the risk was deemed unacceptable.

²Sources have the option to utilize an oil analysis program as described in §63.6625(i) or (j) in order to extend the specified oil change requirement in Table 2c of this subpart.

³Sources can petition the Administrator pursuant to the requirements of 40 CFR 63.6(g) for alternative work practices.

[78 FR 6708, Jan. 30, 2013, as amended at 78 FR 14457, Mar. 6, 2013]

Table 2d to Subpart ZZZZ of Part 63—Requirements for Existing Stationary RICE Located at Area Sources of HAP Emissions

As stated in §§63.6603 and 63.6640, you must comply with the following requirements for existing stationary RICE located at area sources of HAP emissions:

For each . . .	You must meet the following requirement, except during periods of startup . . .	During periods of startup you must . . .
1. Non-Emergency, non-black start CI stationary RICE ≤300 HP	a. Change oil and filter every 1,000 hours of operation or annually, whichever comes first; ¹ b. Inspect air cleaner every 1,000 hours of operation or annually, whichever comes first, and replace as necessary; c. Inspect all hoses and belts every 500 hours of operation or annually, whichever comes first, and replace as necessary.	Minimize the engine's time spent at idle and minimize the engine's startup time at startup to a period needed for appropriate and safe loading of the engine, not to exceed 30 minutes, after which time the non-startup emission limitations apply.
2. Non-Emergency, non-black start CI stationary RICE 300<HP≤500	a. Limit concentration of CO in the stationary RICE exhaust to 49 ppmvd at 15 percent O ₂ ; or	
	b. Reduce CO emissions by 70 percent or more.	
3. Non-Emergency, non-black start CI stationary RICE >500 HP	a. Limit concentration of CO in the stationary RICE exhaust to 23 ppmvd at 15 percent O ₂ ; or	
	b. Reduce CO emissions by 70 percent or more.	
4. Emergency stationary CI RICE and black start stationary CI RICE. ²	a. Change oil and filter every 500 hours of operation or annually, whichever comes first; ¹	
	b. Inspect air cleaner every 1,000 hours of operation or annually, whichever comes first, and replace as necessary; and	
	c. Inspect all hoses and belts every 500 hours of operation or annually, whichever comes first, and replace as necessary.	

For each . . .	You must meet the following requirement, except during periods of startup . . .	During periods of startup you must . . .
5. Emergency stationary SI RICE; black start stationary SI RICE; non-emergency, non-black start 4SLB stationary RICE >500 HP that operate 24 hours or less per calendar year; non-emergency, non-black start 4SRB stationary RICE >500 HP that operate 24 hours or less per calendar year. ²	a. Change oil and filter every 500 hours of operation or annually, whichever comes first; ¹ ; b. Inspect spark plugs every 1,000 hours of operation or annually, whichever comes first, and replace as necessary; and c. Inspect all hoses and belts every 500 hours of operation or annually, whichever comes first, and replace as necessary.	
6. Non-emergency, non-black start 2SLB stationary RICE	a. Change oil and filter every 4,320 hours of operation or annually, whichever comes first; ¹	
	b. Inspect spark plugs every 4,320 hours of operation or annually, whichever comes first, and replace as necessary; and	
	c. Inspect all hoses and belts every 4,320 hours of operation or annually, whichever comes first, and replace as necessary.	
7. Non-emergency, non-black start 4SLB stationary RICE ≤500 HP	a. Change oil and filter every 1,440 hours of operation or annually, whichever comes first; ¹	
	b. Inspect spark plugs every 1,440 hours of operation or annually, whichever comes first, and replace as necessary; and	
	c. Inspect all hoses and belts every 1,440 hours of operation or annually, whichever comes first, and replace as necessary.	
8. Non-emergency, non-black start 4SLB remote stationary RICE >500 HP	a. Change oil and filter every 2,160 hours of operation or annually, whichever comes first; ¹	
	b. Inspect spark plugs every 2,160 hours of operation or annually, whichever comes first, and replace as necessary; and	

For each . . .	You must meet the following requirement, except during periods of startup . . .	During periods of startup you must . . .
	c. Inspect all hoses and belts every 2,160 hours of operation or annually, whichever comes first, and replace as necessary.	
9. Non-emergency, non-black start 4SLB stationary RICE >500 HP that are not remote stationary RICE and that operate more than 24 hours per calendar year	Install an oxidation catalyst to reduce HAP emissions from the stationary RICE.	
10. Non-emergency, non-black start 4SRB stationary RICE ≤500 HP	a. Change oil and filter every 1,440 hours of operation or annually, whichever comes first; ¹	
	b. Inspect spark plugs every 1,440 hours of operation or annually, whichever comes first, and replace as necessary; and	
	c. Inspect all hoses and belts every 1,440 hours of operation or annually, whichever comes first, and replace as necessary.	
11. Non-emergency, non-black start 4SRB remote stationary RICE >500 HP	a. Change oil and filter every 2,160 hours of operation or annually, whichever comes first; ¹	
	b. Inspect spark plugs every 2,160 hours of operation or annually, whichever comes first, and replace as necessary; and	
	c. Inspect all hoses and belts every 2,160 hours of operation or annually, whichever comes first, and replace as necessary.	
12. Non-emergency, non-black start 4SRB stationary RICE >500 HP that are not remote stationary RICE and that operate more than 24 hours per calendar year	Install NSCR to reduce HAP emissions from the stationary RICE.	
13. Non-emergency, non-black start stationary RICE which combusts landfill or digester gas equivalent to 10 percent or more of the gross heat input on an annual basis	a. Change oil and filter every 1,440 hours of operation or annually, whichever comes first; ¹ b. Inspect spark plugs every 1,440 hours of operation or annually, whichever comes first, and replace as necessary; and	

For each . . .	You must meet the following requirement, except during periods of startup . . .	During periods of startup you must . . .
	c. Inspect all hoses and belts every 1,440 hours of operation or annually, whichever comes first, and replace as necessary.	

¹Sources have the option to utilize an oil analysis program as described in §63.6625(i) or (j) in order to extend the specified oil change requirement in Table 2d of this subpart.

²If an emergency engine is operating during an emergency and it is not possible to shut down the engine in order to perform the management practice requirements on the schedule required in Table 2d of this subpart, or if performing the management practice on the required schedule would otherwise pose an unacceptable risk under federal, state, or local law, the management practice can be delayed until the emergency is over or the unacceptable risk under federal, state, or local law has abated. The management practice should be performed as soon as practicable after the emergency has ended or the unacceptable risk under federal, state, or local law has abated. Sources must report any failure to perform the management practice on the schedule required and the federal, state or local law under which the risk was deemed unacceptable.

[78 FR 6709, Jan. 30, 2013]

Table 3 to Subpart ZZZZ of Part 63—Subsequent Performance Tests

As stated in §§63.6615 and 63.6620, you must comply with the following subsequent performance test requirements:

For each . . .	Complying with the requirement to . . .	You must . . .
1. New or reconstructed 2SLB stationary RICE >500 HP located at major sources; new or reconstructed 4SLB stationary RICE ≥250 HP located at major sources; and new or reconstructed CI stationary RICE >500 HP located at major sources	Reduce CO emissions and not using a CEMS	Conduct subsequent performance tests semiannually. ¹
2. 4SRB stationary RICE ≥5,000 HP located at major sources	Reduce formaldehyde emissions	Conduct subsequent performance tests semiannually. ¹
3. Stationary RICE >500 HP located at major sources and new or reconstructed 4SLB stationary RICE 250≤HP≤500 located at major sources	Limit the concentration of formaldehyde in the stationary RICE exhaust	Conduct subsequent performance tests semiannually. ¹
4. Existing non-emergency, non-black start CI stationary RICE >500 HP that are not limited use stationary RICE	Limit or reduce CO emissions and not using a CEMS	Conduct subsequent performance tests every 8,760 hours or 3 years, whichever comes first.
5. Existing non-emergency, non-black start CI stationary RICE >500 HP that are limited use stationary RICE	Limit or reduce CO emissions and not using a CEMS	Conduct subsequent performance tests every 8,760 hours or 5 years, whichever comes first.

¹After you have demonstrated compliance for two consecutive tests, you may reduce the frequency of subsequent performance tests to annually. If the results of any subsequent annual performance test indicate the stationary RICE is not in compliance with the CO or formaldehyde emission limitation, or you deviate from any of your operating limitations, you must resume semiannual performance tests.

[78 FR 6711, Jan. 30, 2013]

Table 4 to Subpart ZZZZ of Part 63—Requirements for Performance Tests

As stated in §§63.6610, 63.6611, 63.6620, and 63.6640, you must comply with the following requirements for performance tests for stationary RICE:

Table 4 to Subpart ZZZZ of Part 63—Requirements for Performance Tests

For each . . .	Complying with the requirement to . . .	You must . . .	Using . . .	According to the following requirements . . .
1. 2SLB, 4SLB, and CI stationary RICE	a. reduce CO emissions	i. Select the sampling port location and the number/location of traverse points at the inlet and outlet of the control device; and		(a) For CO and O ₂ measurement, ducts ≤6 inches in diameter may be sampled at a single point located at the duct centroid and ducts >6 and ≤12 inches in diameter may be sampled at 3 traverse points located at 16.7, 50.0, and 83.3% of the measurement line ('3-point long line'). If the duct is >12 inches in diameter <i>and</i> the sampling port location meets the two and half-diameter criterion of Section 11.1.1 of Method 1 of 40 CFR part 60, appendix A-1, the duct may be sampled at '3-point long line'; otherwise, conduct the stratification testing and select sampling points according to Section 8.1.2 of Method 7E of 40 CFR part 60, appendix A-4.
		ii. Measure the O ₂ at the inlet and outlet of the control device; and	(1) Method 3 or 3A or 3B of 40 CFR part 60, appendix A-2, or ASTM Method D6522-00 (Reapproved 2005) ^{ac} (heated probe not necessary)	(b) Measurements to determine O ₂ must be made at the same time as the measurements for CO concentration.
		iii. Measure the CO at the inlet and the outlet of the control device	(1) ASTM D6522-00 (Reapproved 2005) ^{abc} (heated probe not necessary) or Method 10 of 40 CFR part 60, appendix A-4	(c) The CO concentration must be at 15 percent O ₂ , dry basis.

For each . . .	Complying with the requirement to . . .	You must . . .	Using . . .	According to the following requirements . . .
2. 4SRB stationary RICE	a. reduce formaldehyde emissions	i. Select the sampling port location and the number/location of traverse points at the inlet and outlet of the control device; and		(a) For formaldehyde, O ₂ , and moisture measurement, ducts ≤6 inches in diameter may be sampled at a single point located at the duct centroid and ducts >6 and ≤12 inches in diameter may be sampled at 3 traverse points located at 16.7, 50.0, and 83.3% of the measurement line (‘3-point long line’). If the duct is >12 inches in diameter <i>and</i> the sampling port location meets the two and half-diameter criterion of Section 11.1.1 of Method 1 of 40 CFR part 60, appendix A, the duct may be sampled at ‘3-point long line’; otherwise, conduct the stratification testing and select sampling points according to Section 8.1.2 of Method 7E of 40 CFR part 60, appendix A.
		ii. Measure O ₂ at the inlet and outlet of the control device; and	(1) Method 3 or 3A or 3B of 40 CFR part 60, appendix A-2, or ASTM Method D6522-00 (Reapproved 2005) ^a (heated probe not necessary)	(a) Measurements to determine O ₂ concentration must be made at the same time as the measurements for formaldehyde or THC concentration.
		iii. Measure moisture content at the inlet and outlet of the control device; and	(1) Method 4 of 40 CFR part 60, appendix A-3, or Method 320 of 40 CFR part 63, appendix A, or ASTM D 6348-03 ^a	(a) Measurements to determine moisture content must be made at the same time and location as the measurements for formaldehyde or THC concentration.
		iv. If demonstrating compliance with the formaldehyde percent reduction requirement, measure formaldehyde at the inlet and the outlet of the control device	(1) Method 320 or 323 of 40 CFR part 63, appendix A; or ASTM D6348-03 ^a , provided in ASTM D6348-03 Annex A5 (Analyte Spiking Technique), the percent R must be greater than or equal to 70 and less than or equal to 130	(a) Formaldehyde concentration must be at 15 percent O ₂ , dry basis. Results of this test consist of the average of the three 1-hour or longer runs.
		v. If demonstrating compliance with the THC percent reduction requirement, measure THC at the inlet and the outlet of the control device	(1) Method 25A, reported as propane, of 40 CFR part 60, appendix A-7	(a) THC concentration must be at 15 percent O ₂ , dry basis. Results of this test consist of the average of the three 1-hour or longer runs.

For each . . .	Complying with the requirement to . . .	You must . . .	Using . . .	According to the following requirements . . .
3. Stationary RICE	a. limit the concentration of formaldehyde or CO in the stationary RICE exhaust	i. Select the sampling port location and the number/location of traverse points at the exhaust of the stationary RICE; and		(a) For formaldehyde, CO, O ₂ , and moisture measurement, ducts ≤6 inches in diameter may be sampled at a single point located at the duct centroid and ducts >6 and ≤12 inches in diameter may be sampled at 3 traverse points located at 16.7, 50.0, and 83.3% of the measurement line ('3-point long line'). If the duct is >12 inches in diameter <i>and</i> the sampling port location meets the two and half-diameter criterion of Section 11.1.1 of Method 1 of 40 CFR part 60, appendix A, the duct may be sampled at '3-point long line'; otherwise, conduct the stratification testing and select sampling points according to Section 8.1.2 of Method 7E of 40 CFR part 60, appendix A. If using a control device, the sampling site must be located at the outlet of the control device.
		ii. Determine the O ₂ concentration of the stationary RICE exhaust at the sampling port location; and	(1) Method 3 or 3A or 3B of 40 CFR part 60, appendix A-2, or ASTM Method D6522-00 (Reapproved 2005) ^a (heated probe not necessary)	(a) Measurements to determine O ₂ concentration must be made at the same time and location as the measurements for formaldehyde or CO concentration.
		iii. Measure moisture content of the stationary RICE exhaust at the sampling port location; and	(1) Method 4 of 40 CFR part 60, appendix A-3, or Method 320 of 40 CFR part 63, appendix A, or ASTM D 6348-03 ^a	(a) Measurements to determine moisture content must be made at the same time and location as the measurements for formaldehyde or CO concentration.
		iv. Measure formaldehyde at the exhaust of the stationary RICE; or	(1) Method 320 or 323 of 40 CFR part 63, appendix A; or ASTM D6348-03 ^a , provided in ASTM D6348-03 Annex A5 (Analyte Spiking Technique), the percent R must be greater than or equal to 70 and less than or equal to 130	(a) Formaldehyde concentration must be at 15 percent O ₂ , dry basis. Results of this test consist of the average of the three 1-hour or longer runs.
		v. measure CO at the exhaust of the stationary RICE	(1) Method 10 of 40 CFR part 60, appendix A-4, ASTM Method D6522-00 (2005) ^{ac} , Method 320 of 40 CFR part 63, appendix A, or ASTM D6348-03 ^a	(a) CO concentration must be at 15 percent O ₂ , dry basis. Results of this test consist of the average of the three 1-hour or longer runs.

^aYou may also use Methods 3A and 10 as options to ASTM-D6522-00 (2005). You may obtain a copy of ASTM-D6522-00 (2005) from at least one of the following addresses: American Society for Testing and Materials, 100 Barr Harbor Drive, West Conshohocken, PA 19428-2959, or University Microfilms International, 300 North Zeeb Road, Ann Arbor, MI 48106.

^bYou may obtain a copy of ASTM-D6348-03 from at least one of the following addresses: American Society for Testing and Materials, 100 Barr Harbor Drive, West Conshohocken, PA 19428-2959, or University Microfilms International, 300 North Zeeb Road, Ann Arbor, MI 48106.

[79 FR 11290, Feb. 27, 2014]

Table 5 to Subpart ZZZZ of Part 63—Initial Compliance With Emission Limitations, Operating Limitations, and Other Requirements

As stated in §§63.6612, 63.6625 and 63.6630, you must initially comply with the emission and operating limitations as required by the following:

For each . . .	Complying with the requirement to . . .	You have demonstrated initial compliance if . . .
1. New or reconstructed non-emergency 2SLB stationary RICE >500 HP located at a major source of HAP, new or reconstructed non-emergency 4SLB stationary RICE ≥250 HP located at a major source of HAP, non-emergency stationary CI RICE >500 HP located at a major source of HAP, and existing non-emergency stationary CI RICE >500 HP located at an area source of HAP	a. Reduce CO emissions and using oxidation catalyst, and using a CPMS	i. The average reduction of emissions of CO determined from the initial performance test achieves the required CO percent reduction; and ii. You have installed a CPMS to continuously monitor catalyst inlet temperature according to the requirements in §63.6625(b); and iii. You have recorded the catalyst pressure drop and catalyst inlet temperature during the initial performance test.
2. Non-emergency stationary CI RICE >500 HP located at a major source of HAP, and existing non-emergency stationary CI RICE >500 HP located at an area source of HAP	a. Limit the concentration of CO, using oxidation catalyst, and using a CPMS	i. The average CO concentration determined from the initial performance test is less than or equal to the CO emission limitation; and
		ii. You have installed a CPMS to continuously monitor catalyst inlet temperature according to the requirements in §63.6625(b); and
		iii. You have recorded the catalyst pressure drop and catalyst inlet temperature during the initial performance test.
3. New or reconstructed non-emergency 2SLB stationary RICE >500 HP located at a major source of HAP, new or reconstructed non-emergency 4SLB stationary RICE ≥250 HP located at a major source of HAP, non-emergency stationary CI RICE >500 HP located at a major source of HAP, and existing non-emergency stationary CI RICE >500 HP located at an area source of HAP	a. Reduce CO emissions and not using oxidation catalyst	i. The average reduction of emissions of CO determined from the initial performance test achieves the required CO percent reduction; and ii. You have installed a CPMS to continuously monitor operating parameters approved by the Administrator (if any) according to the requirements in §63.6625(b); and iii. You have recorded the approved operating parameters (if any) during the initial performance test.

For each . . .	Complying with the requirement to . . .	You have demonstrated initial compliance if . . .
4. Non-emergency stationary CI RICE >500 HP located at a major source of HAP, and existing non-emergency stationary CI RICE >500 HP located at an area source of HAP	a. Limit the concentration of CO, and not using oxidation catalyst	i. The average CO concentration determined from the initial performance test is less than or equal to the CO emission limitation; and ii. You have installed a CPMS to continuously monitor operating parameters approved by the Administrator (if any) according to the requirements in §63.6625(b); and
		iii. You have recorded the approved operating parameters (if any) during the initial performance test.
5. New or reconstructed non-emergency 2SLB stationary RICE >500 HP located at a major source of HAP, new or reconstructed non-emergency 4SLB stationary RICE ≥250 HP located at a major source of HAP, non-emergency stationary CI RICE >500 HP located at a major source of HAP, and existing non-emergency stationary CI RICE >500 HP located at an area source of HAP	a. Reduce CO emissions, and using a CEMS	i. You have installed a CEMS to continuously monitor CO and either O ₂ or CO ₂ at both the inlet and outlet of the oxidation catalyst according to the requirements in §63.6625(a); and ii. You have conducted a performance evaluation of your CEMS using PS 3 and 4A of 40 CFR part 60, appendix B; and
		iii. The average reduction of CO calculated using §63.6620 equals or exceeds the required percent reduction. The initial test comprises the first 4-hour period after successful validation of the CEMS. Compliance is based on the average percent reduction achieved during the 4-hour period.
6. Non-emergency stationary CI RICE >500 HP located at a major source of HAP, and existing non-emergency stationary CI RICE >500 HP located at an area source of HAP	a. Limit the concentration of CO, and using a CEMS	i. You have installed a CEMS to continuously monitor CO and either O ₂ or CO ₂ at the outlet of the oxidation catalyst according to the requirements in §63.6625(a); and
		ii. You have conducted a performance evaluation of your CEMS using PS 3 and 4A of 40 CFR part 60, appendix B; and
		iii. The average concentration of CO calculated using §63.6620 is less than or equal to the CO emission limitation. The initial test comprises the first 4-hour period after successful validation of the CEMS. Compliance is based on the average concentration measured during the 4-hour period.
7. Non-emergency 4SRB stationary RICE >500 HP located at a major source of HAP	a. Reduce formaldehyde emissions and using NSCR	i. The average reduction of emissions of formaldehyde determined from the initial performance test is equal to or greater than the required formaldehyde percent reduction, or the average reduction of emissions of THC determined from the initial performance test is equal to or greater than 30 percent; and

For each . . .	Complying with the requirement to . . .	You have demonstrated initial compliance if . . .
		ii. You have installed a CPMS to continuously monitor catalyst inlet temperature according to the requirements in §63.6625(b); and
		iii. You have recorded the catalyst pressure drop and catalyst inlet temperature during the initial performance test.
8. Non-emergency 4SRB stationary RICE >500 HP located at a major source of HAP	a. Reduce formaldehyde emissions and not using NSCR	i. The average reduction of emissions of formaldehyde determined from the initial performance test is equal to or greater than the required formaldehyde percent reduction or the average reduction of emissions of THC determined from the initial performance test is equal to or greater than 30 percent; and
		ii. You have installed a CPMS to continuously monitor operating parameters approved by the Administrator (if any) according to the requirements in §63.6625(b); and
		iii. You have recorded the approved operating parameters (if any) during the initial performance test.
9. New or reconstructed non-emergency stationary RICE >500 HP located at a major source of HAP, new or reconstructed non-emergency 4SLB stationary RICE 250≤HP≤500 located at a major source of HAP, and existing non-emergency 4SRB stationary RICE >500 HP located at a major source of HAP	a. Limit the concentration of formaldehyde in the stationary RICE exhaust and using oxidation catalyst or NSCR	i. The average formaldehyde concentration, corrected to 15 percent O ₂ , dry basis, from the three test runs is less than or equal to the formaldehyde emission limitation; and ii. You have installed a CPMS to continuously monitor catalyst inlet temperature according to the requirements in §63.6625(b); and
		iii. You have recorded the catalyst pressure drop and catalyst inlet temperature during the initial performance test.
10. New or reconstructed non-emergency stationary RICE >500 HP located at a major source of HAP, new or reconstructed non-emergency 4SLB stationary RICE 250≤HP≤500 located at a major source of HAP, and existing non-emergency 4SRB stationary RICE >500 HP located at a major source of HAP	a. Limit the concentration of formaldehyde in the stationary RICE exhaust and not using oxidation catalyst or NSCR	i. The average formaldehyde concentration, corrected to 15 percent O ₂ , dry basis, from the three test runs is less than or equal to the formaldehyde emission limitation; and ii. You have installed a CPMS to continuously monitor operating parameters approved by the Administrator (if any) according to the requirements in §63.6625(b); and
		iii. You have recorded the approved operating parameters (if any) during the initial performance test.
11. Existing non-emergency stationary RICE 100≤HP≤500 located at a major source of HAP, and existing non-emergency stationary CI RICE 300<HP≤500 located at an area source of HAP	a. Reduce CO emissions	i. The average reduction of emissions of CO or formaldehyde, as applicable determined from the initial performance test is equal to or greater than the required CO or formaldehyde, as applicable, percent reduction.

For each . . .	Complying with the requirement to . . .	You have demonstrated initial compliance if . . .
12. Existing non-emergency stationary RICE 100≤HP≤500 located at a major source of HAP, and existing non-emergency stationary CI RICE 300<HP≤500 located at an area source of HAP	a. Limit the concentration of formaldehyde or CO in the stationary RICE exhaust	i. The average formaldehyde or CO concentration, as applicable, corrected to 15 percent O ₂ , dry basis, from the three test runs is less than or equal to the formaldehyde or CO emission limitation, as applicable.
13. Existing non-emergency 4SLB stationary RICE >500 HP located at an area source of HAP that are not remote stationary RICE and that are operated more than 24 hours per calendar year	a. Install an oxidation catalyst	i. You have conducted an initial compliance demonstration as specified in §63.6630(e) to show that the average reduction of emissions of CO is 93 percent or more, or the average CO concentration is less than or equal to 47 ppmvd at 15 percent O ₂ ;
		ii. You have installed a CPMS to continuously monitor catalyst inlet temperature according to the requirements in §63.6625(b), or you have installed equipment to automatically shut down the engine if the catalyst inlet temperature exceeds 1350 °F.
14. Existing non-emergency 4SRB stationary RICE >500 HP located at an area source of HAP that are not remote stationary RICE and that are operated more than 24 hours per calendar year	a. Install NSCR	i. You have conducted an initial compliance demonstration as specified in §63.6630(e) to show that the average reduction of emissions of CO is 75 percent or more, the average CO concentration is less than or equal to 270 ppmvd at 15 percent O ₂ , or the average reduction of emissions of THC is 30 percent or more;
		ii. You have installed a CPMS to continuously monitor catalyst inlet temperature according to the requirements in §63.6625(b), or you have installed equipment to automatically shut down the engine if the catalyst inlet temperature exceeds 1250 °F.

[78 FR 6712, Jan. 30, 2013]

Table 6 to Subpart ZZZZ of Part 63—Continuous Compliance With Emission Limitations, and Other Requirements

As stated in §63.6640, you must continuously comply with the emissions and operating limitations and work or management practices as required by the following:

For each . . .	Complying with the requirement to . . .	You must demonstrate continuous compliance by . . .
1. New or reconstructed non-emergency 2SLB stationary RICE >500 HP located at a major source of HAP, new or reconstructed non-emergency 4SLB stationary RICE ≥250 HP located at a major source of HAP, and new or reconstructed non-emergency CI stationary RICE >500 HP located at a major source of HAP	a. Reduce CO emissions and using an oxidation catalyst, and using a CPMS	i. Conducting semiannual performance tests for CO to demonstrate that the required CO percent reduction is achieved ^a ; and ii. Collecting the catalyst inlet temperature data according to §63.6625(b); and iii. Reducing these data to 4-hour rolling averages; and

For each . . .	Complying with the requirement to . . .	You must demonstrate continuous compliance by . . .
		iv. Maintaining the 4-hour rolling averages within the operating limitations for the catalyst inlet temperature; and
		v. Measuring the pressure drop across the catalyst once per month and demonstrating that the pressure drop across the catalyst is within the operating limitation established during the performance test.
2. New or reconstructed non-emergency 2SLB stationary RICE >500 HP located at a major source of HAP, new or reconstructed non-emergency 4SLB stationary RICE ≥250 HP located at a major source of HAP, and new or reconstructed non-emergency CI stationary RICE >500 HP located at a major source of HAP	a. Reduce CO emissions and not using an oxidation catalyst, and using a CPMS	i. Conducting semiannual performance tests for CO to demonstrate that the required CO percent reduction is achieved ^a ; and ii. Collecting the approved operating parameter (if any) data according to §63.6625(b); and iii. Reducing these data to 4-hour rolling averages; and
		iv. Maintaining the 4-hour rolling averages within the operating limitations for the operating parameters established during the performance test.
3. New or reconstructed non-emergency 2SLB stationary RICE >500 HP located at a major source of HAP, new or reconstructed non-emergency 4SLB stationary RICE ≥250 HP located at a major source of HAP, new or reconstructed non-emergency stationary CI RICE >500 HP located at a major source of HAP, and existing non-emergency stationary CI RICE >500 HP	a. Reduce CO emissions or limit the concentration of CO in the stationary RICE exhaust, and using a CEMS	i. Collecting the monitoring data according to §63.6625(a), reducing the measurements to 1-hour averages, calculating the percent reduction or concentration of CO emissions according to §63.6620; and ii. Demonstrating that the catalyst achieves the required percent reduction of CO emissions over the 4-hour averaging period, or that the emission remain at or below the CO concentration limit; and
		iii. Conducting an annual RATA of your CEMS using PS 3 and 4A of 40 CFR part 60, appendix B, as well as daily and periodic data quality checks in accordance with 40 CFR part 60, appendix F, procedure 1.
4. Non-emergency 4SRB stationary RICE >500 HP located at a major source of HAP	a. Reduce formaldehyde emissions and using NSCR	i. Collecting the catalyst inlet temperature data according to §63.6625(b); and
		ii. Reducing these data to 4-hour rolling averages; and
		iii. Maintaining the 4-hour rolling averages within the operating limitations for the catalyst inlet temperature; and
		iv. Measuring the pressure drop across the catalyst once per month and demonstrating that the pressure drop across the catalyst is within the operating limitation established during the performance test.

For each . . .	Complying with the requirement to . . .	You must demonstrate continuous compliance by . . .
5. Non-emergency 4SRB stationary RICE >500 HP located at a major source of HAP	a. Reduce formaldehyde emissions and not using NSCR	i. Collecting the approved operating parameter (if any) data according to §63.6625(b); and
		ii. Reducing these data to 4-hour rolling averages; and
		iii. Maintaining the 4-hour rolling averages within the operating limitations for the operating parameters established during the performance test.
6. Non-emergency 4SRB stationary RICE with a brake HP ≥5,000 located at a major source of HAP	a. Reduce formaldehyde emissions	Conducting semiannual performance tests for formaldehyde to demonstrate that the required formaldehyde percent reduction is achieved, or to demonstrate that the average reduction of emissions of THC determined from the performance test is equal to or greater than 30 percent. ^a
7. New or reconstructed non-emergency stationary RICE >500 HP located at a major source of HAP and new or reconstructed non-emergency 4SLB stationary RICE 250≤HP≤500 located at a major source of HAP	a. Limit the concentration of formaldehyde in the stationary RICE exhaust and using oxidation catalyst or NSCR	i. Conducting semiannual performance tests for formaldehyde to demonstrate that your emissions remain at or below the formaldehyde concentration limit ^a ; and
		ii. Collecting the catalyst inlet temperature data according to §63.6625(b); and
		iii. Reducing these data to 4-hour rolling averages; and
		iv. Maintaining the 4-hour rolling averages within the operating limitations for the catalyst inlet temperature; and
		v. Measuring the pressure drop across the catalyst once per month and demonstrating that the pressure drop across the catalyst is within the operating limitation established during the performance test.
8. New or reconstructed non-emergency stationary RICE >500 HP located at a major source of HAP and new or reconstructed non-emergency 4SLB stationary RICE 250≤HP≤500 located at a major source of HAP	a. Limit the concentration of formaldehyde in the stationary RICE exhaust and not using oxidation catalyst or NSCR	i. Conducting semiannual performance tests for formaldehyde to demonstrate that your emissions remain at or below the formaldehyde concentration limit ^a ; and
		ii. Collecting the approved operating parameter (if any) data according to §63.6625(b); and
		iii. Reducing these data to 4-hour rolling averages; and
		iv. Maintaining the 4-hour rolling averages within the operating limitations for the operating parameters established during the performance test.

For each . . .	Complying with the requirement to . . .	You must demonstrate continuous compliance by . . .
<p>9. Existing emergency and black start stationary RICE ≤500 HP located at a major source of HAP, existing non-emergency stationary RICE <100 HP located at a major source of HAP, existing emergency and black start stationary RICE located at an area source of HAP, existing non-emergency stationary CI RICE ≤300 HP located at an area source of HAP, existing non-emergency 2SLB stationary RICE located at an area source of HAP, existing non-emergency stationary SI RICE located at an area source of HAP which combusts landfill or digester gas equivalent to 10 percent or more of the gross heat input on an annual basis, existing non-emergency 4SLB and 4SRB stationary RICE ≤500 HP located at an area source of HAP, existing non-emergency 4SLB and 4SRB stationary RICE >500 HP located at an area source of HAP that operate 24 hours or less per calendar year, and existing non-emergency 4SLB and 4SRB stationary RICE >500 HP located at an area source of HAP that are remote stationary RICE</p>	<p>a. Work or Management practices</p>	<p>i. Operating and maintaining the stationary RICE according to the manufacturer's emission-related operation and maintenance instructions; or ii. Develop and follow your own maintenance plan which must provide to the extent practicable for the maintenance and operation of the engine in a manner consistent with good air pollution control practice for minimizing emissions.</p>
<p>10. Existing stationary CI RICE >500 HP that are not limited use stationary RICE</p>	<p>a. Reduce CO emissions, or limit the concentration of CO in the stationary RICE exhaust, and using oxidation catalyst</p>	<p>i. Conducting performance tests every 8,760 hours or 3 years, whichever comes first, for CO or formaldehyde, as appropriate, to demonstrate that the required CO or formaldehyde, as appropriate, percent reduction is achieved or that your emissions remain at or below the CO or formaldehyde concentration limit; and</p>
		<p>ii. Collecting the catalyst inlet temperature data according to §63.6625(b); and</p>
		<p>iii. Reducing these data to 4-hour rolling averages; and</p>
		<p>iv. Maintaining the 4-hour rolling averages within the operating limitations for the catalyst inlet temperature; and</p>
		<p>v. Measuring the pressure drop across the catalyst once per month and demonstrating that the pressure drop across the catalyst is within the operating limitation established during the performance test.</p>
<p>11. Existing stationary CI RICE >500 HP that are not limited use stationary RICE</p>	<p>a. Reduce CO emissions, or limit the concentration of CO in the stationary RICE exhaust, and not using oxidation catalyst</p>	<p>i. Conducting performance tests every 8,760 hours or 3 years, whichever comes first, for CO or formaldehyde, as appropriate, to demonstrate that the required CO or formaldehyde, as appropriate, percent reduction is achieved or that your emissions remain at or below the CO or formaldehyde concentration limit; and</p>
		<p>ii. Collecting the approved operating parameter (if any) data according to §63.6625(b); and</p>

For each . . .	Complying with the requirement to . . .	You must demonstrate continuous compliance by . . .
		iii. Reducing these data to 4-hour rolling averages; and
		iv. Maintaining the 4-hour rolling averages within the operating limitations for the operating parameters established during the performance test.
12. Existing limited use CI stationary RICE >500 HP	a. Reduce CO emissions or limit the concentration of CO in the stationary RICE exhaust, and using an oxidation catalyst	i. Conducting performance tests every 8,760 hours or 5 years, whichever comes first, for CO or formaldehyde, as appropriate, to demonstrate that the required CO or formaldehyde, as appropriate, percent reduction is achieved or that your emissions remain at or below the CO or formaldehyde concentration limit; and
		ii. Collecting the catalyst inlet temperature data according to §63.6625(b); and
		iii. Reducing these data to 4-hour rolling averages; and
		iv. Maintaining the 4-hour rolling averages within the operating limitations for the catalyst inlet temperature; and
		v. Measuring the pressure drop across the catalyst once per month and demonstrating that the pressure drop across the catalyst is within the operating limitation established during the performance test.
13. Existing limited use CI stationary RICE >500 HP	a. Reduce CO emissions or limit the concentration of CO in the stationary RICE exhaust, and not using an oxidation catalyst	i. Conducting performance tests every 8,760 hours or 5 years, whichever comes first, for CO or formaldehyde, as appropriate, to demonstrate that the required CO or formaldehyde, as appropriate, percent reduction is achieved or that your emissions remain at or below the CO or formaldehyde concentration limit; and
		ii. Collecting the approved operating parameter (if any) data according to §63.6625(b); and
		iii. Reducing these data to 4-hour rolling averages; and
		iv. Maintaining the 4-hour rolling averages within the operating limitations for the operating parameters established during the performance test.

For each . . .	Complying with the requirement to . . .	You must demonstrate continuous compliance by . . .
<p>14. Existing non-emergency 4SLB stationary RICE >500 HP located at an area source of HAP that are not remote stationary RICE and that are operated more than 24 hours per calendar year</p>	<p>a. Install an oxidation catalyst</p>	<p>i. Conducting annual compliance demonstrations as specified in §63.6640(c) to show that the average reduction of emissions of CO is 93 percent or more, or the average CO concentration is less than or equal to 47 ppmvd at 15 percent O₂; and either ii. Collecting the catalyst inlet temperature data according to §63.6625(b), reducing these data to 4-hour rolling averages; and maintaining the 4-hour rolling averages within the limitation of greater than 450 °F and less than or equal to 1350 °F for the catalyst inlet temperature; or iii. Immediately shutting down the engine if the catalyst inlet temperature exceeds 1350 °F.</p>
<p>15. Existing non-emergency 4SRB stationary RICE >500 HP located at an area source of HAP that are not remote stationary RICE and that are operated more than 24 hours per calendar year</p>	<p>a. Install NSCR</p>	<p>i. Conducting annual compliance demonstrations as specified in §63.6640(c) to show that the average reduction of emissions of CO is 75 percent or more, the average CO concentration is less than or equal to 270 ppmvd at 15 percent O₂, or the average reduction of emissions of THC is 30 percent or more; and either ii. Collecting the catalyst inlet temperature data according to §63.6625(b), reducing these data to 4-hour rolling averages; and maintaining the 4-hour rolling averages within the limitation of greater than or equal to 750 °F and less than or equal to 1250 °F for the catalyst inlet temperature; or iii. Immediately shutting down the engine if the catalyst inlet temperature exceeds 1250 °F.</p>

^aAfter you have demonstrated compliance for two consecutive tests, you may reduce the frequency of subsequent performance tests to annually. If the results of any subsequent annual performance test indicate the stationary RICE is not in compliance with the CO or formaldehyde emission limitation, or you deviate from any of your operating limitations, you must resume semiannual performance tests.

[78 FR 6715, Jan. 30, 2013]

Table 7 to Subpart ZZZZ of Part 63—Requirements for Reports

As stated in §63.6650, you must comply with the following requirements for reports:

For each . . .	You must submit a . . .	The report must contain . . .	You must submit the report . . .
<p>1. Existing non-emergency, non-black start stationary RICE 100≤HP≤500 located at a major source of HAP; existing non-emergency, non-black start stationary CI RICE >500 HP located at a major source of HAP; existing non-emergency 4SRB stationary RICE >500 HP located at a major source of HAP; existing non-emergency, non-black start stationary CI RICE >300 HP located at an area source of HAP; new or reconstructed non-emergency stationary RICE >500 HP located at a major source of HAP; and new or reconstructed non-emergency 4SLB stationary RICE 250≤HP≤500 located at a major source of HAP</p>	<p>Compliance report</p>	<p>a. If there are no deviations from any emission limitations or operating limitations that apply to you, a statement that there were no deviations from the emission limitations or operating limitations during the reporting period. If there were no periods during which the CMS, including CEMS and CPMS, was out-of-control, as specified in §63.8(c)(7), a statement that there were not periods during which the CMS was out-of-control during the reporting period; or</p>	<p>i. Semiannually according to the requirements in §63.6650(b)(1)-(5) for engines that are not limited use stationary RICE subject to numerical emission limitations; and ii. Annually according to the requirements in §63.6650(b)(6)-(9) for engines that are limited use stationary RICE subject to numerical emission limitations.</p>
		<p>b. If you had a deviation from any emission limitation or operating limitation during the reporting period, the information in §63.6650(d). If there were periods during which the CMS, including CEMS and CPMS, was out-of-control, as specified in §63.8(c)(7), the information in §63.6650(e); or</p>	<p>i. Semiannually according to the requirements in §63.6650(b).</p>
		<p>c. If you had a malfunction during the reporting period, the information in §63.6650(c)(4).</p>	<p>i. Semiannually according to the requirements in §63.6650(b).</p>
<p>2. New or reconstructed non-emergency stationary RICE that combusts landfill gas or digester gas equivalent to 10 percent or more of the gross heat input on an annual basis</p>	<p>Report</p>	<p>a. The fuel flow rate of each fuel and the heating values that were used in your calculations, and you must demonstrate that the percentage of heat input provided by landfill gas or digester gas, is equivalent to 10 percent or more of the gross heat input on an annual basis; and</p>	<p>i. Annually, according to the requirements in §63.6650.</p>
		<p>b. The operating limits provided in your federally enforceable permit, and any deviations from these limits; and</p>	<p>i. See item 2.a.i.</p>
		<p>c. Any problems or errors suspected with the meters.</p>	<p>i. See item 2.a.i.</p>
<p>3. Existing non-emergency, non-black start 4SLB and 4SRB stationary RICE >500 HP located at an area source of HAP that are not remote stationary RICE and that operate more than 24 hours per calendar year</p>	<p>Compliance report</p>	<p>a. The results of the annual compliance demonstration, if conducted during the reporting period.</p>	<p>i. Semiannually according to the requirements in §63.6650(b)(1)-(5).</p>

For each . . .	You must submit a . . .	The report must contain . . .	You must submit the report . . .
4. Emergency stationary RICE that operate or are contractually obligated to be available for more than 15 hours per year for the purposes specified in §63.6640(f)(2)(ii) and (iii) or that operate for the purposes specified in §63.6640(f)(4)(ii)	Report	a. The information in §63.6650(h)(1)	i. annually according to the requirements in §63.6650(h)(2)-(3).

[78 FR 6719, Jan. 30, 2013]

Table 8 to Subpart ZZZZ of Part 63—Applicability of General Provisions to Subpart ZZZZ.

As stated in §63.6665, you must comply with the following applicable general provisions.

General provisions citation	Subject of citation	Applies to subpart	Explanation
§63.1	General applicability of the General Provisions	Yes.	
§63.2	Definitions	Yes	Additional terms defined in §63.6675.
§63.3	Units and abbreviations	Yes.	
§63.4	Prohibited activities and circumvention	Yes.	
§63.5	Construction and reconstruction	Yes.	
§63.6(a)	Applicability	Yes.	
§63.6(b)(1)-(4)	Compliance dates for new and reconstructed sources	Yes.	
§63.6(b)(5)	Notification	Yes.	
§63.6(b)(6)	[Reserved]		
§63.6(b)(7)	Compliance dates for new and reconstructed area sources that become major sources	Yes.	
§63.6(c)(1)-(2)	Compliance dates for existing sources	Yes.	
§63.6(c)(3)-(4)	[Reserved]		
§63.6(c)(5)	Compliance dates for existing area sources that become major sources	Yes.	
§63.6(d)	[Reserved]		
§63.6(e)	Operation and maintenance	No.	
§63.6(f)(1)	Applicability of standards	No.	
§63.6(f)(2)	Methods for determining compliance	Yes.	
§63.6(f)(3)	Finding of compliance	Yes.	
§63.6(g)(1)-(3)	Use of alternate standard	Yes.	
§63.6(h)	Opacity and visible emission standards	No	Subpart ZZZZ does not contain opacity or visible emission standards.
§63.6(i)	Compliance extension procedures and criteria	Yes.	

General provisions citation	Subject of citation	Applies to subpart	Explanation
§63.6(j)	Presidential compliance exemption	Yes.	
§63.7(a)(1)-(2)	Performance test dates	Yes	Subpart ZZZZ contains performance test dates at §§63.6610, 63.6611, and 63.6612.
§63.7(a)(3)	CAA section 114 authority	Yes.	
§63.7(b)(1)	Notification of performance test	Yes	Except that §63.7(b)(1) only applies as specified in §63.6645.
§63.7(b)(2)	Notification of rescheduling	Yes	Except that §63.7(b)(2) only applies as specified in §63.6645.
§63.7(c)	Quality assurance/test plan	Yes	Except that §63.7(c) only applies as specified in §63.6645.
§63.7(d)	Testing facilities	Yes.	
§63.7(e)(1)	Conditions for conducting performance tests	No.	Subpart ZZZZ specifies conditions for conducting performance tests at §63.6620.
§63.7(e)(2)	Conduct of performance tests and reduction of data	Yes	Subpart ZZZZ specifies test methods at §63.6620.
§63.7(e)(3)	Test run duration	Yes.	
§63.7(e)(4)	Administrator may require other testing under section 114 of the CAA	Yes.	
§63.7(f)	Alternative test method provisions	Yes.	
§63.7(g)	Performance test data analysis, recordkeeping, and reporting	Yes.	
§63.7(h)	Waiver of tests	Yes.	
§63.8(a)(1)	Applicability of monitoring requirements	Yes	Subpart ZZZZ contains specific requirements for monitoring at §63.6625.
§63.8(a)(2)	Performance specifications	Yes.	
§63.8(a)(3)	[Reserved]		
§63.8(a)(4)	Monitoring for control devices	No.	
§63.8(b)(1)	Monitoring	Yes.	
§63.8(b)(2)-(3)	Multiple effluents and multiple monitoring systems	Yes.	
§63.8(c)(1)	Monitoring system operation and maintenance	Yes.	
§63.8(c)(1)(i)	Routine and predictable SSM	No	
§63.8(c)(1)(ii)	SSM not in Startup Shutdown Malfunction Plan	Yes.	
§63.8(c)(1)(iii)	Compliance with operation and maintenance requirements	No	
§63.8(c)(2)-(3)	Monitoring system installation	Yes.	
§63.8(c)(4)	Continuous monitoring system (CMS) requirements	Yes	Except that subpart ZZZZ does not require Continuous Opacity Monitoring System (COMS).
§63.8(c)(5)	COMS minimum procedures	No	Subpart ZZZZ does not require COMS.
§63.8(c)(6)-(8)	CMS requirements	Yes	Except that subpart ZZZZ does not require COMS.

General provisions citation	Subject of citation	Applies to subpart	Explanation
§63.8(d)	CMS quality control	Yes.	
§63.8(e)	CMS performance evaluation	Yes	Except for §63.8(e)(5)(ii), which applies to COMS.
		Except that §63.8(e) only applies as specified in §63.6645.	
§63.8(f)(1)-(5)	Alternative monitoring method	Yes	Except that §63.8(f)(4) only applies as specified in §63.6645.
§63.8(f)(6)	Alternative to relative accuracy test	Yes	Except that §63.8(f)(6) only applies as specified in §63.6645.
§63.8(g)	Data reduction	Yes	Except that provisions for COMS are not applicable. Averaging periods for demonstrating compliance are specified at §§63.6635 and 63.6640.
§63.9(a)	Applicability and State delegation of notification requirements	Yes.	
§63.9(b)(1)-(5)	Initial notifications	Yes	Except that §63.9(b)(3) is reserved.
		Except that §63.9(b) only applies as specified in §63.6645.	
§63.9(c)	Request for compliance extension	Yes	Except that §63.9(c) only applies as specified in §63.6645.
§63.9(d)	Notification of special compliance requirements for new sources	Yes	Except that §63.9(d) only applies as specified in §63.6645.
§63.9(e)	Notification of performance test	Yes	Except that §63.9(e) only applies as specified in §63.6645.
§63.9(f)	Notification of visible emission (VE)/opacity test	No	Subpart ZZZZ does not contain opacity or VE standards.
§63.9(g)(1)	Notification of performance evaluation	Yes	Except that §63.9(g) only applies as specified in §63.6645.
§63.9(g)(2)	Notification of use of COMS data	No	Subpart ZZZZ does not contain opacity or VE standards.
§63.9(g)(3)	Notification that criterion for alternative to RATA is exceeded	Yes	If alternative is in use.
		Except that §63.9(g) only applies as specified in §63.6645.	
§63.9(h)(1)-(6)	Notification of compliance status	Yes	Except that notifications for sources using a CEMS are due 30 days after completion of performance evaluations. §63.9(h)(4) is reserved.
			Except that §63.9(h) only applies as specified in §63.6645.
§63.9(i)	Adjustment of submittal deadlines	Yes.	
§63.9(j)	Change in previous information	Yes.	
§63.10(a)	Administrative provisions for recordkeeping/reporting	Yes.	

General provisions citation	Subject of citation	Applies to subpart	Explanation
§63.10(b)(1)	Record retention	Yes	Except that the most recent 2 years of data do not have to be retained on site.
§63.10(b)(2)(i)-(v)	Records related to SSM	No.	
§63.10(b)(2)(vi)-(xi)	Records	Yes.	
§63.10(b)(2)(xii)	Record when under waiver	Yes.	
§63.10(b)(2)(xiii)	Records when using alternative to RATA	Yes	For CO standard if using RATA alternative.
§63.10(b)(2)(xiv)	Records of supporting documentation	Yes.	
§63.10(b)(3)	Records of applicability determination	Yes.	
§63.10(c)	Additional records for sources using CEMS	Yes	Except that §63.10(c)(2)-(4) and (9) are reserved.
§63.10(d)(1)	General reporting requirements	Yes.	
§63.10(d)(2)	Report of performance test results	Yes.	
§63.10(d)(3)	Reporting opacity or VE observations	No	Subpart ZZZZ does not contain opacity or VE standards.
§63.10(d)(4)	Progress reports	Yes.	
§63.10(d)(5)	Startup, shutdown, and malfunction reports	No.	
§63.10(e)(1) and (2)(i)	Additional CMS Reports	Yes.	
§63.10(e)(2)(ii)	COMS-related report	No	Subpart ZZZZ does not require COMS.
§63.10(e)(3)	Excess emission and parameter exceedances reports	Yes.	Except that §63.10(e)(3)(i) (C) is reserved.
§63.10(e)(4)	Reporting COMS data	No	Subpart ZZZZ does not require COMS.
§63.10(f)	Waiver for recordkeeping/reporting	Yes.	
§63.11	Flares	No.	
§63.12	State authority and delegations	Yes.	
§63.13	Addresses	Yes.	
§63.14	Incorporation by reference	Yes.	
§63.15	Availability of information	Yes.	

[75 FR 9688, Mar. 3, 2010, as amended at 78 FR 6720, Jan. 30, 2013]

Appendix A—Protocol for Using an Electrochemical Analyzer to Determine Oxygen and Carbon Monoxide Concentrations From Certain Engines

1.0 Scope and Application. What is this Protocol?

This protocol is a procedure for using portable electrochemical (EC) cells for measuring carbon monoxide (CO) and oxygen (O₂) concentrations in controlled and uncontrolled emissions from existing stationary 4-stroke lean burn and 4-stroke rich burn reciprocating internal combustion engines as specified in the applicable rule.

1.1 Analytes. What does this protocol determine?

This protocol measures the engine exhaust gas concentrations of carbon monoxide (CO) and oxygen (O₂).

Analyte	CAS No.	Sensitivity
Carbon monoxide (CO)	630-08-0	Minimum detectable limit should be 2 percent of the nominal range or 1 ppm, whichever is less restrictive.
Oxygen (O ₂)	7782-44-7	

1.2 Applicability. When is this protocol acceptable?

This protocol is applicable to 40 CFR part 63, subpart ZZZZ. Because of inherent cross sensitivities of EC cells, you must not apply this protocol to other emissions sources without specific instruction to that effect.

1.3 Data Quality Objectives. How good must my collected data be?

Refer to Section 13 to verify and document acceptable analyzer performance.

1.4 Range. What is the targeted analytical range for this protocol?

The measurement system and EC cell design(s) conforming to this protocol will determine the analytical range for each gas component. The nominal ranges are defined by choosing up-scale calibration gas concentrations near the maximum anticipated flue gas concentrations for CO and O₂, or no more than twice the permitted CO level.

1.5 Sensitivity. What minimum detectable limit will this protocol yield for a particular gas component?

The minimum detectable limit depends on the nominal range and resolution of the specific EC cell used, and the signal to noise ratio of the measurement system. The minimum detectable limit should be 2 percent of the nominal range or 1 ppm, whichever is less restrictive.

2.0 Summary of Protocol

In this protocol, a gas sample is extracted from an engine exhaust system and then conveyed to a portable EC analyzer for measurement of CO and O₂ gas concentrations. This method provides measurement system performance specifications and sampling protocols to ensure reliable data. You may use additions to, or modifications of vendor supplied measurement systems (e.g., heated or unheated sample lines, thermocouples, flow meters, selective gas scrubbers, etc.) to meet the design specifications of this protocol. Do not make changes to the measurement system from the as-verified configuration (Section 3.12).

3.0 Definitions

3.1 Measurement System. The total equipment required for the measurement of CO and O₂ concentrations. The measurement system consists of the following major subsystems:

3.1.1 Data Recorder. A strip chart recorder, computer or digital recorder for logging measurement data from the analyzer output. You may record measurement data from the digital data display manually or electronically.

3.1.2 Electrochemical (EC) Cell. A device, similar to a fuel cell, used to sense the presence of a specific analyte and generate an electrical current output proportional to the analyte concentration.

3.1.3 Interference Gas Scrubber. A device used to remove or neutralize chemical compounds that may interfere with the selective operation of an EC cell.

3.1.4 Moisture Removal System. Any device used to reduce the concentration of moisture in the sample stream so as to protect the EC cells from the damaging effects of condensation and to minimize errors in measurements caused by the scrubbing of soluble gases.

3.1.5 Sample Interface. The portion of the system used for one or more of the following: sample acquisition; sample transport; sample conditioning or protection of the EC cell from any degrading effects of the engine exhaust effluent; removal of particulate matter and condensed moisture.

3.2 Nominal Range. The range of analyte concentrations over which each EC cell is operated (normally 25 percent to 150 percent of up-scale calibration gas value). Several nominal ranges can be used for any given cell so long as the calibration and repeatability checks for that range remain within specifications.

3.3 Calibration Gas. A vendor certified concentration of a specific analyte in an appropriate balance gas.

3.4 Zero Calibration Error. The analyte concentration output exhibited by the EC cell in response to zero-level calibration gas.

3.5 Up-Scale Calibration Error. The mean of the difference between the analyte concentration exhibited by the EC cell and the certified concentration of the up-scale calibration gas.

3.6 Interference Check. A procedure for quantifying analytical interference from components in the engine exhaust gas other than the targeted analytes.

3.7 Repeatability Check. A protocol for demonstrating that an EC cell operated over a given nominal analyte concentration range provides a stable and consistent response and is not significantly affected by repeated exposure to that gas.

3.8 Sample Flow Rate. The flow rate of the gas sample as it passes through the EC cell. In some situations, EC cells can experience drift with changes in flow rate. The flow rate must be monitored and documented during all phases of a sampling run.

3.9 Sampling Run. A timed three-phase event whereby an EC cell's response rises and plateaus in a sample conditioning phase, remains relatively constant during a measurement data phase, then declines during a refresh phase. The sample conditioning phase exposes the EC cell to the gas sample for a length of time sufficient to reach a constant response. The measurement data phase is the time interval during which gas sample measurements can be made that meet the acceptance criteria of this protocol. The refresh phase then purges the EC cells with CO-free air. The refresh phase replenishes requisite O₂ and moisture in the electrolyte reserve and provides a mechanism to de-gas or desorb any interference gas scrubbers or filters so as to enable a stable CO EC cell response. There are four primary types of sampling runs: pre-sampling calibrations; stack gas sampling; post-sampling calibration checks; and measurement system repeatability checks. Stack gas sampling runs can be chained together for extended evaluations, providing all other procedural specifications are met.

3.10 Sampling Day. A time not to exceed twelve hours from the time of the pre-sampling calibration to the post-sampling calibration check. During this time, stack gas sampling runs can be repeated without repeated recalibrations, providing all other sampling specifications have been met.

3.11 Pre-Sampling Calibration/Post-Sampling Calibration Check. The protocols executed at the beginning and end of each sampling day to bracket measurement readings with controlled performance checks.

3.12 Performance-Established Configuration. The EC cell and sampling system configuration that existed at the time that it initially met the performance requirements of this protocol.

4.0 Interferences.

When present in sufficient concentrations, NO and NO₂ are two gas species that have been reported to interfere with CO concentration measurements. In the likelihood of this occurrence, it is the protocol user's responsibility to employ and properly maintain an appropriate CO EC cell filter or scrubber for removal of these gases, as described in Section 6.2.12.

5.0 Safety. [Reserved]

6.0 Equipment and Supplies.

6.1 What equipment do I need for the measurement system?

The system must maintain the gas sample at conditions that will prevent moisture condensation in the sample transport lines, both before and as the sample gas contacts the EC cells. The essential components of the measurement system are described below.

6.2 Measurement System Components.

6.2.1 Sample Probe. A single extraction-point probe constructed of glass, stainless steel or other non-reactive material, and of length sufficient to reach any designated sampling point. The sample probe must be designed to prevent plugging due to condensation or particulate matter.

6.2.2 Sample Line. Non-reactive tubing to transport the effluent from the sample probe to the EC cell.

6.2.3 Calibration Assembly (optional). A three-way valve assembly or equivalent to introduce calibration gases at ambient pressure at the exit end of the sample probe during calibration checks. The assembly must be designed such that only stack gas or calibration gas flows in the sample line and all gases flow through any gas path filters.

6.2.4 Particulate Filter (optional). Filters before the inlet of the EC cell to prevent accumulation of particulate material in the measurement system and extend the useful life of the components. All filters must be fabricated of materials that are non-reactive to the gas mixtures being sampled.

6.2.5 Sample Pump. A leak-free pump to provide undiluted sample gas to the system at a flow rate sufficient to minimize the response time of the measurement system. If located upstream of the EC cells, the pump must be constructed of a material that is non-reactive to the gas mixtures being sampled.

6.2.8 Sample Flow Rate Monitoring. An adjustable rotameter or equivalent device used to adjust and maintain the sample flow rate through the analyzer as prescribed.

6.2.9 Sample Gas Manifold (optional). A manifold to divert a portion of the sample gas stream to the analyzer and the remainder to a by-pass discharge vent. The sample gas manifold may also include provisions for introducing calibration gases directly to the analyzer. The manifold must be constructed of a material that is non-reactive to the gas mixtures being sampled.

6.2.10 EC cell. A device containing one or more EC cells to determine the CO and O₂ concentrations in the sample gas stream. The EC cell(s) must meet the applicable performance specifications of Section 13 of this protocol.

6.2.11 Data Recorder. A strip chart recorder, computer or digital recorder to make a record of analyzer output data. The data recorder resolution (i.e., readability) must be no greater than 1 ppm for CO; 0.1 percent for O₂; and one degree (either °C or °F) for temperature. Alternatively, you may use a digital or analog meter having the same resolution to observe and manually record the analyzer responses.

6.2.12 Interference Gas Filter or Scrubber. A device to remove interfering compounds upstream of the CO EC cell. Specific interference gas filters or scrubbers used in the performance-established configuration of the analyzer must continue to be used. Such a filter or scrubber must have a means to determine when the removal agent is exhausted. Periodically replace or replenish it in accordance with the manufacturer's recommendations.

7.0 Reagents and Standards. What calibration gases are needed?

7.1 Calibration Gases. CO calibration gases for the EC cell must be CO in nitrogen or CO in a mixture of nitrogen and O₂. Use CO calibration gases with labeled concentration values certified by the manufacturer to be within ± 5 percent of the label value. Dry ambient air (20.9 percent O₂) is acceptable for calibration of the O₂ cell. If needed, any lower percentage O₂ calibration gas must be a mixture of O₂ in nitrogen.

7.1.1 Up-Scale CO Calibration Gas Concentration. Choose one or more up-scale gas concentrations such that the average of the stack gas measurements for each stack gas sampling run are between 25 and 150 percent of those concentrations. Alternatively, choose an up-scale gas that does not exceed twice the concentration of the applicable outlet standard. If a measured gas value exceeds 150 percent of the up-scale CO calibration gas value at any time during the stack gas sampling run, the run must be discarded and repeated.

7.1.2 Up-Scale O₂ Calibration Gas Concentration.

Select an O₂ gas concentration such that the difference between the gas concentration and the average stack gas measurement or reading for each sample run is less than 15 percent O₂. When the average exhaust gas O₂ readings are above 6 percent, you may use dry ambient air (20.9 percent O₂) for the up-scale O₂ calibration gas.

7.1.3 Zero Gas. Use an inert gas that contains less than 0.25 percent of the up-scale CO calibration gas concentration. You may use dry air that is free from ambient CO and other combustion gas products (e.g., CO₂).

8.0 Sample Collection and Analysis

8.1 Selection of Sampling Sites.

8.1.1 Control Device Inlet. Select a sampling site sufficiently downstream of the engine so that the combustion gases should be well mixed. Use a single sampling extraction point near the center of the duct (e.g., within the 10 percent centroidal area), unless instructed otherwise.

8.1.2 Exhaust Gas Outlet. Select a sampling site located at least two stack diameters downstream of any disturbance (e.g., turbocharger exhaust, crossover junction or recirculation take-off) and at least one-half stack diameter upstream of the gas discharge to the atmosphere. Use a single sampling extraction point near the center of the duct (e.g., within the 10 percent centroidal area), unless instructed otherwise.

8.2 Stack Gas Collection and Analysis. Prior to the first stack gas sampling run, conduct that the pre-sampling calibration in accordance with Section 10.1. Use Figure 1 to record all data. Zero the analyzer with zero gas. Confirm and record that the scrubber media color is correct and not exhausted. Then position the probe at the sampling point and begin the sampling run at the same flow rate used during the up-scale calibration. Record the start time. Record all EC cell output responses and the flow rate during the "sample conditioning phase" once per minute until constant readings are obtained. Then begin the "measurement data phase" and record readings every 15 seconds for at least two minutes (or eight readings), or as otherwise required to achieve two continuous minutes of data that meet the specification given in Section 13.1. Finally, perform the "refresh phase" by introducing dry air, free from CO and other combustion gases, until several minute-to-minute readings of consistent value have been obtained. For each run use the "measurement data phase" readings to calculate the average stack gas CO and O₂ concentrations.

8.3 EC Cell Rate. Maintain the EC cell sample flow rate so that it does not vary by more than ± 10 percent throughout the pre-sampling calibration, stack gas sampling and post-sampling calibration check. Alternatively, the EC cell sample flow rate can be maintained within a tolerance range that does not affect the gas concentration readings by more than ± 3 percent, as instructed by the EC cell manufacturer.

9.0 Quality Control (Reserved)

10.0 Calibration and Standardization

10.1 Pre-Sampling Calibration. Conduct the following protocol once for each nominal range to be used on each EC cell before performing a stack gas sampling run on each field sampling day. Repeat the calibration if you replace an EC cell before completing all of the sampling runs. There is no prescribed order for calibration of the EC cells; however, each cell must complete the measurement data phase during calibration. Assemble the measurement system by following the manufacturer's recommended protocols including for preparing and preconditioning the EC cell. Assure the measurement system has no leaks and verify the gas scrubbing agent is not depleted. Use Figure 1 to record all data.

10.1.1 Zero Calibration. For both the O₂ and CO cells, introduce zero gas to the measurement system (e.g., at the calibration assembly) and record the concentration reading every minute until readings are constant for at least two consecutive minutes. Include the time and sample flow rate. Repeat the steps in this section at least once to verify the zero calibration for each component gas.

10.1.2 Zero Calibration Tolerance. For each zero gas introduction, the zero level output must be less than or equal to ± 3 percent of the up-scale gas value or ± 1 ppm, whichever is less restrictive, for the CO channel and less than or equal to ± 0.3 percent O₂ for the O₂ channel.

10.1.3 Up-Scale Calibration. Individually introduce each calibration gas to the measurement system (e.g., at the calibration assembly) and record the start time. Record all EC cell output responses and the flow rate during this "sample conditioning phase" once per minute until readings are constant for at least two minutes. Then begin the "measurement data phase" and record readings every 15 seconds for a total of two minutes, or as otherwise required. Finally, perform the "refresh phase" by introducing dry air, free from CO and other combustion gases, until readings are constant for at least two consecutive minutes. Then repeat the steps in this section at least once to verify the calibration for each component gas. Introduce all gases to flow through the entire sample handling system (i.e., at the exit end of the sampling probe or the calibration assembly).

10.1.4 Up-Scale Calibration Error. The mean of the difference of the "measurement data phase" readings from the reported standard gas value must be less than or equal to ± 5 percent or ± 1 ppm for CO or ± 0.5 percent O₂, whichever is less restrictive, respectively. The maximum allowable deviation from the mean measured value of any single "measurement data phase" reading must be less than or equal to ± 2 percent or ± 1 ppm for CO or ± 0.5 percent O₂, whichever is less restrictive, respectively.

10.2 Post-Sampling Calibration Check. Conduct a stack gas post-sampling calibration check after the stack gas sampling run or set of runs and within 12 hours of the initial calibration. Conduct up-scale and zero calibration checks using the protocol in Section 10.1. Make no changes to the sampling system or EC cell calibration until all post-sampling calibration checks have been recorded. If either the zero or up-scale calibration error exceeds the respective specification in Sections 10.1.2 and 10.1.4 then all measurement data collected since the previous successful calibrations are invalid and re-calibration and re-sampling are required. If the sampling system is disassembled or the EC cell calibration is adjusted, repeat the calibration check before conducting the next analyzer sampling run.

11.0 Analytical Procedure

The analytical procedure is fully discussed in Section 8.

12.0 Calculations and Data Analysis

Determine the CO and O₂ concentrations for each stack gas sampling run by calculating the mean gas concentrations of the data recorded during the "measurement data phase".

13.0 Protocol Performance

Use the following protocols to verify consistent analyzer performance during each field sampling day.

13.1 Measurement Data Phase Performance Check. Calculate the mean of the readings from the "measurement data phase". The maximum allowable deviation from the mean for each of the individual readings is ± 2 percent, or ± 1 ppm,

whichever is less restrictive. Record the mean value and maximum deviation for each gas monitored. Data must conform to Section 10.1.4. The EC cell flow rate must conform to the specification in Section 8.3.

Example: A measurement data phase is invalid if the maximum deviation of any single reading comprising that mean is greater than ± 2 percent or ± 1 ppm (the default criteria). For example, if the mean = 30 ppm, single readings of below 29 ppm and above 31 ppm are disallowed).

13.2 Interference Check. Before the initial use of the EC cell and interference gas scrubber in the field, and semi-annually thereafter, challenge the interference gas scrubber with NO and NO₂ gas standards that are generally recognized as representative of diesel-fueled engine NO and NO₂ emission values. Record the responses displayed by the CO EC cell and other pertinent data on Figure 1 or a similar form.

13.2.1 Interference Response. The combined NO and NO₂ interference response should be less than or equal to ± 5 percent of the up-scale CO calibration gas concentration.

13.3 Repeatability Check. Conduct the following check once for each nominal range that is to be used on the CO EC cell within 5 days prior to each field sampling program. If a field sampling program lasts longer than 5 days, repeat this check every 5 days. Immediately repeat the check if the EC cell is replaced or if the EC cell is exposed to gas concentrations greater than 150 percent of the highest up-scale gas concentration.

13.3.1 Repeatability Check Procedure. Perform a complete EC cell sampling run (all three phases) by introducing the CO calibration gas to the measurement system and record the response. Follow Section 10.1.3. Use Figure 1 to record all data. Repeat the run three times for a total of four complete runs. During the four repeatability check runs, do not adjust the system except where necessary to achieve the correct calibration gas flow rate at the analyzer.

13.3.2 Repeatability Check Calculations. Determine the highest and lowest average "measurement data phase" CO concentrations from the four repeatability check runs and record the results on Figure 1 or a similar form. The absolute value of the difference between the maximum and minimum average values recorded must not vary more than ± 3 percent or ± 1 ppm of the up-scale gas value, whichever is less restrictive.

14.0 Pollution Prevention (Reserved)

15.0 Waste Management (Reserved)

16.0 Alternative Procedures (Reserved)

17.0 References

- (1) "Development of an Electrochemical Cell Emission Analyzer Test Protocol", Topical Report, Phil Juneau, Emission Monitoring, Inc., July 1997.
- (2) "Determination of Nitrogen Oxides, Carbon Monoxide, and Oxygen Emissions from Natural Gas-Fired Engines, Boilers, and Process Heaters Using Portable Analyzers", EMC Conditional Test Protocol 30 (CTM-30), Gas Research Institute Protocol GRI-96/0008, Revision 7, October 13, 1997.
- (3) "ICAC Test Protocol for Periodic Monitoring", EMC Conditional Test Protocol 34 (CTM-034), The Institute of Clean Air Companies, September 8, 1999.
- (4) "Code of Federal Regulations", Protection of Environment, 40 CFR, Part 60, Appendix A, Methods 1-4; 10.

Table 1: Appendix A—Sampling Run Data.

Facility _____ Engine I.D. _____ Date _____											
Run Type:	()				()				()		()
(X)	Pre-Sample Calibration				Stack Gas Sample				Post-Sample Cal. Check		Repeatability Check
Run #	1	1	2	2	3	3	4	4	Time	Scrub. OK	Flow- Rate
Gas	O ₂	CO	O ₂	CO	O ₂	CO	O ₂	CO			
Sample Cond. Phase											
"											
"											
"											
"											
Measurement Data Phase											
"											
"											
"											
"											
"											
"											
"											
"											
"											
Mean											
Refresh Phase											
"											
"											
"											
"											

[78 FR 6721, Jan. 30, 2013]

Attachment F

Part 70 Operating Permit No: T111-35606-00017

[Downloaded from the eCFR on August 25, 2014]

Electronic Code of Federal Regulations

Title 40: Protection of Environment

PART 60—STANDARDS OF PERFORMANCE FOR NEW STATIONARY SOURCES

Subpart JJJJ—Standards of Performance for Stationary Spark Ignition Internal Combustion Engines

SOURCE: 73 FR 3591, Jan. 18, 2008, unless otherwise noted.

What This Subpart Covers

§60.4230 Am I subject to this subpart?

(a) The provisions of this subpart are applicable to manufacturers, owners, and operators of stationary spark ignition (SI) internal combustion engines (ICE) as specified in paragraphs (a)(1) through (6) of this section. For the purposes of this subpart, the date that construction commences is the date the engine is ordered by the owner or operator.

(1) Manufacturers of stationary SI ICE with a maximum engine power less than or equal to 19 kilowatt (KW) (25 horsepower (HP)) that are manufactured on or after July 1, 2008.

(2) Manufacturers of stationary SI ICE with a maximum engine power greater than 19 KW (25 HP) that are gasoline fueled or that are rich burn engines fueled by liquefied petroleum gas (LPG), where the date of manufacture is:

(i) On or after July 1, 2008; or

(ii) On or after January 1, 2009, for emergency engines.

(3) Manufacturers of stationary SI ICE with a maximum engine power greater than 19 KW (25 HP) that are not gasoline fueled and are not rich burn engines fueled by LPG, where the manufacturer participates in the voluntary manufacturer certification program described in this subpart and where the date of manufacture is:

(i) On or after July 1, 2007, for engines with a maximum engine power greater than or equal to 500 HP (except lean burn engines with a maximum engine power greater than or equal to 500 HP and less than 1,350 HP);

(ii) On or after January 1, 2008, for lean burn engines with a maximum engine power greater than or equal to 500 HP and less than 1,350 HP;

(iii) On or after July 1, 2008, for engines with a maximum engine power less than 500 HP; or

(iv) On or after January 1, 2009, for emergency engines.

(4) Owners and operators of stationary SI ICE that commence construction after June 12, 2006, where the stationary SI ICE are manufactured:

(i) On or after July 1, 2007, for engines with a maximum engine power greater than or equal to 500 HP (except lean burn engines with a maximum engine power greater than or equal to 500 HP and less than 1,350 HP);

- (ii) on or after January 1, 2008, for lean burn engines with a maximum engine power greater than or equal to 500 HP and less than 1,350 HP;
 - (iii) on or after July 1, 2008, for engines with a maximum engine power less than 500 HP; or
 - (iv) on or after January 1, 2009, for emergency engines with a maximum engine power greater than 19 KW (25 HP).
- (5) Owners and operators of stationary SI ICE that are modified or reconstructed after June 12, 2006, and any person that modifies or reconstructs any stationary SI ICE after June 12, 2006.
- (6) The provisions of §60.4236 of this subpart are applicable to all owners and operators of stationary SI ICE that commence construction after June 12, 2006.
- (b) The provisions of this subpart are not applicable to stationary SI ICE being tested at an engine test cell/stand.
- (c) If you are an owner or operator of an area source subject to this subpart, you are exempt from the obligation to obtain a permit under 40 CFR part 70 or 40 CFR part 71, provided you are not required to obtain a permit under 40 CFR 70.3(a) or 40 CFR 71.3(a) for a reason other than your status as an area source under this subpart. Notwithstanding the previous sentence, you must continue to comply with the provisions of this subpart as applicable.
- (d) For the purposes of this subpart, stationary SI ICE using alcohol-based fuels are considered gasoline engines.
- (e) Stationary SI ICE may be eligible for exemption from the requirements of this subpart as described in 40 CFR part 1068, subpart C (or the exemptions described in 40 CFR parts 90 and 1048, for engines that would need to be certified to standards in those parts), except that owners and operators, as well as manufacturers, may be eligible to request an exemption for national security.
- (f) Owners and operators of facilities with internal combustion engines that are acting as temporary replacement units and that are located at a stationary source for less than 1 year and that have been properly certified as meeting the standards that would be applicable to such engine under the appropriate nonroad engine provisions, are not required to meet any other provisions under this subpart with regard to such engines.

[73 FR 3591, Jan. 18, 2008, as amended at 76 FR 37972, June 28, 2011]

Emission Standards for Manufacturers

§60.4231 What emission standards must I meet if I am a manufacturer of stationary SI internal combustion engines or equipment containing such engines?

(a) Stationary SI internal combustion engine manufacturers must certify their stationary SI ICE with a maximum engine power less than or equal to 19 KW (25 HP) manufactured on or after July 1, 2008 to the certification emission standards and other requirements for new nonroad SI engines in 40 CFR part 90 or 1054, as follows:

If engine displacement is * * *	and manufacturing dates are * * *	the engine must meet emission standards and related requirements for nonhandheld engines under * * *
(1) below 225 cc	July 1, 2008 to December 31, 2011	40 CFR part 90.
(2) below 225 cc	January 1, 2012 or later	40 CFR part 1054.
(3) at or above 225 cc	July 1, 2008 to December 31, 2010	40 CFR part 90.
(4) at or above 225 cc	January 1, 2011 or later	40 CFR part 1054.

(b) Stationary SI internal combustion engine manufacturers must certify their stationary SI ICE with a maximum engine power greater than 19 KW (25 HP) (except emergency stationary ICE with a maximum engine power greater than 25 HP and less than 130 HP) that use gasoline and that are manufactured on or after the applicable date in

§60.4230(a)(2), or manufactured on or after the applicable date in §60.4230(a)(4) for emergency stationary ICE with a maximum engine power greater than or equal to 130 HP, to the certification emission standards and other requirements for new nonroad SI engines in 40 CFR part 1048. Stationary SI internal combustion engine manufacturers must certify their emergency stationary SI ICE with a maximum engine power greater than 25 HP and less than 130 HP that use gasoline and that are manufactured on or after the applicable date in §60.4230(a)(4) to the Phase 1 emission standards in 40 CFR 90.103, applicable to class II engines, and other requirements for new nonroad SI engines in 40 CFR part 90. Stationary SI internal combustion engine manufacturers may certify their stationary SI ICE with a maximum engine power less than or equal to 30 KW (40 HP) with a total displacement less than or equal to 1,000 cubic centimeters (cc) that use gasoline to the certification emission standards and other requirements for new nonroad SI engines in 40 CFR part 90 or 1054, as appropriate.

(c) Stationary SI internal combustion engine manufacturers must certify their stationary SI ICE with a maximum engine power greater than 19 KW (25 HP) (except emergency stationary ICE with a maximum engine power greater than 25 HP and less than 130 HP) that are rich burn engines that use LPG and that are manufactured on or after the applicable date in §60.4230(a)(2), or manufactured on or after the applicable date in §60.4230(a)(4) for emergency stationary ICE with a maximum engine power greater than or equal to 130 HP, to the certification emission standards and other requirements for new nonroad SI engines in 40 CFR part 1048. Stationary SI internal combustion engine manufacturers must certify their emergency stationary SI ICE greater than 25 HP and less than 130 HP that are rich burn engines that use LPG and that are manufactured on or after the applicable date in §60.4230(a)(4) to the Phase 1 emission standards in 40 CFR 90.103, applicable to class II engines, and other requirements for new nonroad SI engines in 40 CFR part 90. Stationary SI internal combustion engine manufacturers may certify their stationary SI ICE with a maximum engine power less than or equal to 30 KW (40 HP) with a total displacement less than or equal to 1,000 cc that are rich burn engines that use LPG to the certification emission standards and other requirements for new nonroad SI engines in 40 CFR part 90 or 1054, as appropriate.

(d) Stationary SI internal combustion engine manufacturers who choose to certify their stationary SI ICE with a maximum engine power greater than 19 KW (25 HP) and less than 75 KW (100 HP) (except gasoline and rich burn engines that use LPG and emergency stationary ICE with a maximum engine power greater than 25 HP and less than 130 HP) under the voluntary manufacturer certification program described in this subpart must certify those engines to the certification emission standards for new nonroad SI engines in 40 CFR part 1048. Stationary SI internal combustion engine manufacturers who choose to certify their emergency stationary SI ICE greater than 25 HP and less than 130 HP (except gasoline and rich burn engines that use LPG), must certify those engines to the Phase 1 emission standards in 40 CFR 90.103, applicable to class II engines, for new nonroad SI engines in 40 CFR part 90. Stationary SI internal combustion engine manufacturers may certify their stationary SI ICE with a maximum engine power less than or equal to 30 KW (40 HP) with a total displacement less than or equal to 1,000 cc (except gasoline and rich burn engines that use LPG) to the certification emission standards for new nonroad SI engines in 40 CFR part 90 or 1054, as appropriate. For stationary SI ICE with a maximum engine power greater than 19 KW (25 HP) and less than 75 KW (100 HP) (except gasoline and rich burn engines that use LPG and emergency stationary ICE with a maximum engine power greater than 25 HP and less than 130 HP) manufactured prior to January 1, 2011, manufacturers may choose to certify these engines to the standards in Table 1 to this subpart applicable to engines with a maximum engine power greater than or equal to 100 HP and less than 500 HP.

(e) Stationary SI internal combustion engine manufacturers who choose to certify their stationary SI ICE with a maximum engine power greater than or equal to 75 KW (100 HP) (except gasoline and rich burn engines that use LPG) under the voluntary manufacturer certification program described in this subpart must certify those engines to the emission standards in Table 1 to this subpart. Stationary SI internal combustion engine manufacturers may certify their stationary SI ICE with a maximum engine power greater than or equal to 75 KW (100 HP) that are lean burn engines that use LPG to the certification emission standards for new nonroad SI engines in 40 CFR part 1048. For stationary SI ICE with a maximum engine power greater than or equal to 100 HP (75 KW) and less than 500 HP (373 KW) manufactured prior to January 1, 2011, and for stationary SI ICE with a maximum engine power greater than or equal to 500 HP (373 KW) manufactured prior to July 1, 2010, manufacturers may choose to certify these engines to the certification emission standards for new nonroad SI engines in 40 CFR part 1048 applicable to engines that are not severe duty engines.

(f) Manufacturers of equipment containing stationary SI internal combustion engines meeting the provisions of 40 CFR part 1054 must meet the provisions of 40 CFR part 1060, to the extent they apply to equipment manufacturers.

(g) Notwithstanding the requirements in paragraphs (a) through (c) of this section, stationary SI internal combustion engine manufacturers are not required to certify reconstructed engines; however manufacturers may elect to do so. The reconstructed engine must be certified to the emission standards specified in paragraphs (a) through (e) of this

section that are applicable to the model year, maximum engine power and displacement of the reconstructed stationary SI ICE.

[73 FR 3591, Jan. 18, 2008, as amended at 73 FR 59175, Oct. 8, 2008; 76 FR 37973, June 28, 2011; 78 FR 6697, Jan. 30, 2013]

§60.4232 How long must my engines meet the emission standards if I am a manufacturer of stationary SI internal combustion engines?

Engines manufactured by stationary SI internal combustion engine manufacturers must meet the emission standards as required in §60.4231 during the certified emissions life of the engines.

Emission Standards for Owners and Operators

§60.4233 What emission standards must I meet if I am an owner or operator of a stationary SI internal combustion engine?

(a) Owners and operators of stationary SI ICE with a maximum engine power less than or equal to 19 KW (25 HP) manufactured on or after July 1, 2008, must comply with the emission standards in §60.4231(a) for their stationary SI ICE.

(b) Owners and operators of stationary SI ICE with a maximum engine power greater than 19 KW (25 HP) manufactured on or after the applicable date in §60.4230(a)(4) that use gasoline must comply with the emission standards in §60.4231(b) for their stationary SI ICE.

(c) Owners and operators of stationary SI ICE with a maximum engine power greater than 19 KW (25 HP) manufactured on or after the applicable date in §60.4230(a)(4) that are rich burn engines that use LPG must comply with the emission standards in §60.4231(c) for their stationary SI ICE.

(d) Owners and operators of stationary SI ICE with a maximum engine power greater than 19 KW (25 HP) and less than 75 KW (100 HP) (except gasoline and rich burn engines that use LPG) must comply with the emission standards for field testing in 40 CFR 1048.101(c) for their non-emergency stationary SI ICE and with the emission standards in Table 1 to this subpart for their emergency stationary SI ICE. Owners and operators of stationary SI ICE with a maximum engine power greater than 19 KW (25 HP) and less than 75 KW (100 HP) manufactured prior to January 1, 2011, that were certified to the standards in Table 1 to this subpart applicable to engines with a maximum engine power greater than or equal to 100 HP and less than 500 HP, may optionally choose to meet those standards.

(e) Owners and operators of stationary SI ICE with a maximum engine power greater than or equal to 75 KW (100 HP) (except gasoline and rich burn engines that use LPG) must comply with the emission standards in Table 1 to this subpart for their stationary SI ICE. For owners and operators of stationary SI ICE with a maximum engine power greater than or equal to 100 HP (except gasoline and rich burn engines that use LPG) manufactured prior to January 1, 2011 that were certified to the certification emission standards in 40 CFR part 1048 applicable to engines that are not severe duty engines, if such stationary SI ICE was certified to a carbon monoxide (CO) standard above the standard in Table 1 to this subpart, then the owners and operators may meet the CO certification (not field testing) standard for which the engine was certified.

(f) Owners and operators of any modified or reconstructed stationary SI ICE subject to this subpart must meet the requirements as specified in paragraphs (f)(1) through (5) of this section.

(1) Owners and operators of stationary SI ICE with a maximum engine power less than or equal to 19 KW (25 HP), that are modified or reconstructed after June 12, 2006, must comply with emission standards in §60.4231(a) for their stationary SI ICE. Engines with a date of manufacture prior to July 1, 2008 must comply with the emission standards specified in §60.4231(a) applicable to engines manufactured on July 1, 2008.

(2) Owners and operators of stationary SI ICE with a maximum engine power greater than 19 KW (25 HP) that are gasoline engines and are modified or reconstructed after June 12, 2006, must comply with the emission standards in §60.4231(b) for their stationary SI ICE. Engines with a date of manufacture prior to July 1, 2008 (or January 1, 2009

for emergency engines) must comply with the emission standards specified in §60.4231(b) applicable to engines manufactured on July 1, 2008 (or January 1, 2009 for emergency engines).

(3) Owners and operators of stationary SI ICE with a maximum engine power greater than 19 KW (25 HP) that are rich burn engines that use LPG, that are modified or reconstructed after June 12, 2006, must comply with the same emission standards as those specified in §60.4231(c). Engines with a date of manufacture prior to July 1, 2008 (or January 1, 2009 for emergency engines) must comply with the emission standards specified in §60.4231(c) applicable to engines manufactured on July 1, 2008 (or January 1, 2009 for emergency engines).

(4) Owners and operators of stationary SI natural gas and lean burn LPG engines with a maximum engine power greater than 19 KW (25 HP), that are modified or reconstructed after June 12, 2006, must comply with the same emission standards as those specified in paragraph (d) or (e) of this section, except that such owners and operators of non-emergency engines and emergency engines greater than or equal to 130 HP must meet a nitrogen oxides (NO_x) emission standard of 3.0 grams per HP-hour (g/HP-hr), a CO emission standard of 4.0 g/HP-hr (5.0 g/HP-hr for non-emergency engines less than 100 HP), and a volatile organic compounds (VOC) emission standard of 1.0 g/HP-hr, or a NO_x emission standard of 250 ppmvd at 15 percent oxygen (O₂), a CO emission standard 540 ppmvd at 15 percent O₂ (675 ppmvd at 15 percent O₂ for non-emergency engines less than 100 HP), and a VOC emission standard of 86 ppmvd at 15 percent O₂, where the date of manufacture of the engine is:

(i) Prior to July 1, 2007, for non-emergency engines with a maximum engine power greater than or equal to 500 HP (except lean burn natural gas engines and LPG engines with a maximum engine power greater than or equal to 500 HP and less than 1,350 HP);

(ii) Prior to July 1, 2008, for non-emergency engines with a maximum engine power less than 500 HP;

(iii) Prior to January 1, 2009, for emergency engines;

(iv) Prior to January 1, 2008, for non-emergency lean burn natural gas engines and LPG engines with a maximum engine power greater than or equal to 500 HP and less than 1,350 HP.

(5) Owners and operators of stationary SI landfill/digester gas ICE engines with a maximum engine power greater than 19 KW (25 HP), that are modified or reconstructed after June 12, 2006, must comply with the same emission standards as those specified in paragraph (e) of this section for stationary landfill/digester gas engines. Engines with maximum engine power less than 500 HP and a date of manufacture prior to July 1, 2008 must comply with the emission standards specified in paragraph (e) of this section for stationary landfill/digester gas ICE with a maximum engine power less than 500 HP manufactured on July 1, 2008. Engines with a maximum engine power greater than or equal to 500 HP (except lean burn engines greater than or equal to 500 HP and less than 1,350 HP) and a date of manufacture prior to July 1, 2007 must comply with the emission standards specified in paragraph (e) of this section for stationary landfill/digester gas ICE with a maximum engine power greater than or equal to 500 HP (except lean burn engines greater than or equal to 500 HP and less than 1,350 HP) manufactured on July 1, 2007. Lean burn engines greater than or equal to 500 HP and less than 1,350 HP with a date of manufacture prior to January 1, 2008 must comply with the emission standards specified in paragraph (e) of this section for stationary landfill/digester gas ICE that are lean burn engines greater than or equal to 500 HP and less than 1,350 HP and manufactured on January 1, 2008.

(g) Owners and operators of stationary SI wellhead gas ICE engines may petition the Administrator for approval on a case-by-case basis to meet emission standards no less stringent than the emission standards that apply to stationary emergency SI engines greater than 25 HP and less than 130 HP due to the presence of high sulfur levels in the fuel, as specified in Table 1 to this subpart. The request must, at a minimum, demonstrate that the fuel has high sulfur levels that prevent the use of aftertreatment controls and also that the owner has reasonably made all attempts possible to obtain an engine that will meet the standards without the use of aftertreatment controls. The petition must request the most stringent standards reasonably applicable to the engine using the fuel.

(h) Owners and operators of stationary SI ICE that are required to meet standards that reference 40 CFR 1048.101 must, if testing their engines in use, meet the standards in that section applicable to field testing, except as indicated in paragraph (e) of this section.

[73 FR 3591, Jan. 18, 2008, as amended at 76 FR 37973, June 28, 2011]

§60.4234 How long must I meet the emission standards if I am an owner or operator of a stationary SI internal combustion engine?

Owners and operators of stationary SI ICE must operate and maintain stationary SI ICE that achieve the emission standards as required in §60.4233 over the entire life of the engine.

Other Requirements for Owners and Operators

§60.4235 What fuel requirements must I meet if I am an owner or operator of a stationary SI gasoline fired internal combustion engine subject to this subpart?

Owners and operators of stationary SI ICE subject to this subpart that use gasoline must use gasoline that meets the per gallon sulfur limit in 40 CFR 80.195.

§60.4236 What is the deadline for importing or installing stationary SI ICE produced in previous model years?

(a) After July 1, 2010, owners and operators may not install stationary SI ICE with a maximum engine power of less than 500 HP that do not meet the applicable requirements in §60.4233.

(b) After July 1, 2009, owners and operators may not install stationary SI ICE with a maximum engine power of greater than or equal to 500 HP that do not meet the applicable requirements in §60.4233, except that lean burn engines with a maximum engine power greater than or equal to 500 HP and less than 1,350 HP that do not meet the applicable requirements in §60.4233 may not be installed after January 1, 2010.

(c) For emergency stationary SI ICE with a maximum engine power of greater than 19 KW (25 HP), owners and operators may not install engines that do not meet the applicable requirements in §60.4233 after January 1, 2011.

(d) In addition to the requirements specified in §§60.4231 and 60.4233, it is prohibited to import stationary SI ICE less than or equal to 19 KW (25 HP), stationary rich burn LPG SI ICE, and stationary gasoline SI ICE that do not meet the applicable requirements specified in paragraphs (a), (b), and (c) of this section, after the date specified in paragraph (a), (b), and (c) of this section.

(e) The requirements of this section do not apply to owners and operators of stationary SI ICE that have been modified or reconstructed, and they do not apply to engines that were removed from one existing location and reinstalled at a new location.

§60.4237 What are the monitoring requirements if I am an owner or operator of an emergency stationary SI internal combustion engine?

(a) Starting on July 1, 2010, if the emergency stationary SI internal combustion engine that is greater than or equal to 500 HP that was built on or after July 1, 2010, does not meet the standards applicable to non-emergency engines, the owner or operator must install a non-resettable hour meter.

(b) Starting on January 1, 2011, if the emergency stationary SI internal combustion engine that is greater than or equal to 130 HP and less than 500 HP that was built on or after January 1, 2011, does not meet the standards applicable to non-emergency engines, the owner or operator must install a non-resettable hour meter.

(c) If you are an owner or operator of an emergency stationary SI internal combustion engine that is less than 130 HP, was built on or after July 1, 2008, and does not meet the standards applicable to non-emergency engines, you must install a non-resettable hour meter upon startup of your emergency engine.

Compliance Requirements for Manufacturers

§60.4238 What are my compliance requirements if I am a manufacturer of stationary SI internal combustion engines ≤19 KW (25 HP) or a manufacturer of equipment containing such engines?

Stationary SI internal combustion engine manufacturers who are subject to the emission standards specified in §60.4231(a) must certify their stationary SI ICE using the certification procedures required in 40 CFR part 90, subpart B, or 40 CFR part 1054, subpart C, as applicable, and must test their engines as specified in those parts. Manufacturers of equipment containing stationary SI internal combustion engines meeting the provisions of 40 CFR part 1054 must meet the provisions of 40 CFR part 1060, subpart C, to the extent they apply to equipment manufacturers.

[73 FR 59176, Oct. 8, 2008]

§60.4239 What are my compliance requirements if I am a manufacturer of stationary SI internal combustion engines >19 KW (25 HP) that use gasoline or a manufacturer of equipment containing such engines?

Stationary SI internal combustion engine manufacturers who are subject to the emission standards specified in §60.4231(b) must certify their stationary SI ICE using the certification procedures required in 40 CFR part 1048, subpart C, and must test their engines as specified in that part. Stationary SI internal combustion engine manufacturers who certify their stationary SI ICE with a maximum engine power less than or equal to 30 KW (40 HP) with a total displacement less than or equal to 1,000 cc to the certification emission standards and other requirements for new nonroad SI engines in 40 CFR part 90 or 40 CFR part 1054, and manufacturers of stationary SI emergency engines that are greater than 25 HP and less than 130 HP who meet the Phase 1 emission standards in 40 CFR 90.103, applicable to class II engines, must certify their stationary SI ICE using the certification procedures required in 40 CFR part 90, subpart B, or 40 CFR part 1054, subpart C, as applicable, and must test their engines as specified in those parts. Manufacturers of equipment containing stationary SI internal combustion engines meeting the provisions of 40 CFR part 1054 must meet the provisions of 40 CFR part 1060, subpart C, to the extent they apply to equipment manufacturers.

[73 FR 59176, Oct. 8, 2008]

§60.4240 What are my compliance requirements if I am a manufacturer of stationary SI internal combustion engines >19 KW (25 HP) that are rich burn engines that use LPG or a manufacturer of equipment containing such engines?

Stationary SI internal combustion engine manufacturers who are subject to the emission standards specified in §60.4231(c) must certify their stationary SI ICE using the certification procedures required in 40 CFR part 1048, subpart C, and must test their engines as specified in that part. Stationary SI internal combustion engine manufacturers who certify their stationary SI ICE with a maximum engine power less than or equal to 30 KW (40 HP) with a total displacement less than or equal to 1,000 cc to the certification emission standards and other requirements for new nonroad SI engines in 40 CFR part 90 or 40 CFR part 1054, and manufacturers of stationary SI emergency engines that are greater than 25 HP and less than 130 HP who meet the Phase 1 emission standards in 40 CFR 90.103, applicable to class II engines, must certify their stationary SI ICE using the certification procedures required in 40 CFR part 90, subpart B, or 40 CFR part 1054, subpart C, as applicable, and must test their engines as specified in those parts. Manufacturers of equipment containing stationary SI internal combustion engines meeting the provisions of 40 CFR part 1054 must meet the provisions of 40 CFR part 1060, subpart C, to the extent they apply to equipment manufacturers.

[73 FR 59176, Oct. 8, 2008]

§60.4241 What are my compliance requirements if I am a manufacturer of stationary SI internal combustion engines participating in the voluntary certification program or a manufacturer of equipment containing such engines?

(a) Manufacturers of stationary SI internal combustion engines with a maximum engine power greater than 19 KW (25 HP) that do not use gasoline and are not rich burn engines that use LPG can choose to certify their engines to the emission standards in §60.4231(d) or (e), as applicable, under the voluntary certification program described in this

subpart. Manufacturers who certify their engines under the voluntary certification program must meet the requirements as specified in paragraphs (b) through (g) of this section. In addition, manufacturers of stationary SI internal combustion engines who choose to certify their engines under the voluntary certification program, must also meet the requirements as specified in §60.4247.

(b) Manufacturers of engines other than those certified to standards in 40 CFR part 90 or 40 CFR part 1054 must certify their stationary SI ICE using the certification procedures required in 40 CFR part 1048, subpart C, and must follow the same test procedures that apply to large SI nonroad engines under 40 CFR part 1048, but must use the D-1 cycle of International Organization of Standardization 8178-4: 1996(E) (incorporated by reference, see 40 CFR 60.17) or the test cycle requirements specified in Table 3 to 40 CFR 1048.505, except that Table 3 of 40 CFR 1048.505 applies to high load engines only. Stationary SI internal combustion engine manufacturers who certify their stationary SI ICE with a maximum engine power less than or equal to 30 KW (40 HP) with a total displacement less than or equal to 1,000 cc to the certification emission standards and other requirements for new nonroad SI engines in 40 CFR part 90 or 40 CFR part 1054, and manufacturers of emergency engines that are greater than 25 HP and less than 130 HP who meet the Phase 1 standards in 40 CFR 90.103, applicable to class II engines, must certify their stationary SI ICE using the certification procedures required in 40 CFR part 90, subpart B, or 40 CFR part 1054, subpart C, as applicable, and must test their engines as specified in those parts. Manufacturers of equipment containing stationary SI internal combustion engines meeting the provisions of 40 CFR part 1054 must meet the provisions of 40 CFR part 1060, subpart C, to the extent they apply to equipment manufacturers.

(c) Certification of stationary SI ICE to the emission standards specified in §60.4231(d) or (e), as applicable, is voluntary, but manufacturers who decide to certify are subject to all of the requirements indicated in this subpart with regard to the engines included in their certification. Manufacturers must clearly label their stationary SI engines as certified or non-certified engines.

(d) Manufacturers of natural gas fired stationary SI ICE who conduct voluntary certification of stationary SI ICE to the emission standards specified in §60.4231(d) or (e), as applicable, must certify their engines for operation using fuel that meets the definition of pipeline-quality natural gas. The fuel used for certifying stationary SI natural gas engines must meet the definition of pipeline-quality natural gas as described in §60.4248. In addition, the manufacturer must provide information to the owner and operator of the certified stationary SI engine including the specifications of the pipeline-quality natural gas to which the engine is certified and what adjustments the owner or operator must make to the engine when installed in the field to ensure compliance with the emission standards.

(e) Manufacturers of stationary SI ICE that are lean burn engines fueled by LPG who conduct voluntary certification of stationary SI ICE to the emission standards specified in §60.4231(d) or (e), as applicable, must certify their engines for operation using fuel that meets the specifications in 40 CFR 1065.720.

(f) Manufacturers may certify their engines for operation using gaseous fuels in addition to pipeline-quality natural gas; however, the manufacturer must specify the properties of that fuel and provide testing information showing that the engine will meet the emission standards specified in §60.4231(d) or (e), as applicable, when operating on that fuel. The manufacturer must also provide instructions for configuring the stationary engine to meet the emission standards on fuels that do not meet the pipeline-quality natural gas definition. The manufacturer must also provide information to the owner and operator of the certified stationary SI engine regarding the configuration that is most conducive to reduced emissions where the engine will be operated on gaseous fuels with different quality than the fuel that it was certified to.

(g) A stationary SI engine manufacturer may certify an engine family solely to the standards applicable to landfill/digester gas engines as specified in §60.4231(d) or (e), as applicable, but must certify their engines for operation using landfill/digester gas and must add a permanent label stating that the engine is for use only in landfill/digester gas applications. The label must be added according to the labeling requirements specified in 40 CFR 1048.135(b).

(h) For purposes of this subpart, when calculating emissions of volatile organic compounds, emissions of formaldehyde should not be included.

(i) For engines being certified to the voluntary certification standards in Table 1 of this subpart, the VOC measurement shall be made by following the procedures in 40 CFR 1065.260 and 1065.265 in order to determine the total NMHC emissions by using a flame-ionization detector and non-methane cutter. As an alternative to the

nonmethane cutter, manufacturers may use a gas chromatograph as allowed under 40 CFR 1065.267 and may measure ethane, as well as methane, for excluding such levels from the total VOC measurement.

[73 FR 3591, Jan. 18, 2008, as amended at 73 FR 59176, Oct. 8, 2008; 76 FR 37974, June 28, 2011]

§60.4242 What other requirements must I meet if I am a manufacturer of stationary SI internal combustion engines or equipment containing stationary SI internal combustion engines or a manufacturer of equipment containing such engines?

(a) Stationary SI internal combustion engine manufacturers must meet the provisions of 40 CFR part 90, 40 CFR part 1048, or 40 CFR part 1054, as applicable, as well as 40 CFR part 1068 for engines that are certified to the emission standards in 40 CFR part 1048 or 1054, except that engines certified pursuant to the voluntary certification procedures in §60.4241 are subject only to the provisions indicated in §60.4247 and are permitted to provide instructions to owners and operators allowing for deviations from certified configurations, if such deviations are consistent with the provisions of paragraphs §60.4241(c) through (f). Manufacturers of equipment containing stationary SI internal combustion engines meeting the provisions of 40 CFR part 1054 must meet the provisions of 40 CFR part 1060, as applicable. Labels on engines certified to 40 CFR part 1048 must refer to stationary engines, rather than or in addition to nonroad engines, as appropriate.

(b) An engine manufacturer certifying an engine family or families to standards under this subpart that are identical to standards applicable under 40 CFR part 90, 40 CFR part 1048, or 40 CFR part 1054 for that model year may certify any such family that contains both nonroad and stationary engines as a single engine family and/or may include any such family containing stationary engines in the averaging, banking and trading provisions applicable for such engines under those parts. This provision also applies to equipment or component manufacturers certifying to standards under 40 CFR part 1060.

(c) Manufacturers of engine families certified to 40 CFR part 1048 may meet the labeling requirements referred to in paragraph (a) of this section for stationary SI ICE by either adding a separate label containing the information required in paragraph (a) of this section or by adding the words "and stationary" after the word "nonroad" to the label.

(d) For all engines manufactured on or after January 1, 2011, and for all engines with a maximum engine power greater than 25 HP and less than 130 HP manufactured on or after July 1, 2008, a stationary SI engine manufacturer that certifies an engine family solely to the standards applicable to emergency engines must add a permanent label stating that the engines in that family are for emergency use only. The label must be added according to the labeling requirements specified in 40 CFR 1048.135(b).

(e) All stationary SI engines subject to mandatory certification that do not meet the requirements of this subpart must be labeled according to 40 CFR 1068.230 and must be exported under the provisions of 40 CFR 1068.230. Stationary SI engines subject to standards in 40 CFR part 90 may use the provisions in 40 CFR 90.909. Manufacturers of stationary engines with a maximum engine power greater than 25 HP that are not certified to standards and other requirements under 40 CFR part 1048 are subject to the labeling provisions of 40 CFR 1048.20 pertaining to excluded stationary engines.

(f) For manufacturers of gaseous-fueled stationary engines required to meet the warranty provisions in 40 CFR 90.1103 or 1054.120, we may establish an hour-based warranty period equal to at least the certified emissions life of the engines (in engine operating hours) if we determine that these engines are likely to operate for a number of hours greater than the applicable useful life within 24 months. We will not approve an alternate warranty under this paragraph (f) for nonroad engines. An alternate warranty period approved under this paragraph (f) will be the specified number of engine operating hours or two years, whichever comes first. The engine manufacturer shall request this alternate warranty period in its application for certification or in an earlier submission. We may approve an alternate warranty period for an engine family subject to the following conditions:

(1) The engines must be equipped with non-resettable hour meters.

(2) The engines must be designed to operate for a number of hours substantially greater than the applicable certified emissions life.

(3) The emission-related warranty for the engines may not be shorter than any published warranty offered by the manufacturer without charge for the engines. Similarly, the emission-related warranty for any component shall not be shorter than any published warranty offered by the manufacturer without charge for that component.

[73 FR 3591, Jan. 18, 2008, as amended at 73 FR 59177, Oct. 8, 2008]

Compliance Requirements for Owners and Operators

§60.4243 What are my compliance requirements if I am an owner or operator of a stationary SI internal combustion engine?

(a) If you are an owner or operator of a stationary SI internal combustion engine that is manufactured after July 1, 2008, and must comply with the emission standards specified in §60.4233(a) through (c), you must comply by purchasing an engine certified to the emission standards in §60.4231(a) through (c), as applicable, for the same engine class and maximum engine power. In addition, you must meet one of the requirements specified in (a)(1) and (2) of this section.

(1) If you operate and maintain the certified stationary SI internal combustion engine and control device according to the manufacturer's emission-related written instructions, you must keep records of conducted maintenance to demonstrate compliance, but no performance testing is required if you are an owner or operator. You must also meet the requirements as specified in 40 CFR part 1068, subparts A through D, as they apply to you. If you adjust engine settings according to and consistent with the manufacturer's instructions, your stationary SI internal combustion engine will not be considered out of compliance.

(2) If you do not operate and maintain the certified stationary SI internal combustion engine and control device according to the manufacturer's emission-related written instructions, your engine will be considered a non-certified engine, and you must demonstrate compliance according to (a)(2)(i) through (iii) of this section, as appropriate.

(i) If you are an owner or operator of a stationary SI internal combustion engine less than 100 HP, you must keep a maintenance plan and records of conducted maintenance to demonstrate compliance and must, to the extent practicable, maintain and operate the engine in a manner consistent with good air pollution control practice for minimizing emissions, but no performance testing is required if you are an owner or operator.

(ii) If you are an owner or operator of a stationary SI internal combustion engine greater than or equal to 100 HP and less than or equal to 500 HP, you must keep a maintenance plan and records of conducted maintenance and must, to the extent practicable, maintain and operate the engine in a manner consistent with good air pollution control practice for minimizing emissions. In addition, you must conduct an initial performance test within 1 year of engine startup to demonstrate compliance.

(iii) If you are an owner or operator of a stationary SI internal combustion engine greater than 500 HP, you must keep a maintenance plan and records of conducted maintenance and must, to the extent practicable, maintain and operate the engine in a manner consistent with good air pollution control practice for minimizing emissions. In addition, you must conduct an initial performance test within 1 year of engine startup and conduct subsequent performance testing every 8,760 hours or 3 years, whichever comes first, thereafter to demonstrate compliance.

(b) If you are an owner or operator of a stationary SI internal combustion engine and must comply with the emission standards specified in §60.4233(d) or (e), you must demonstrate compliance according to one of the methods specified in paragraphs (b)(1) and (2) of this section.

(1) Purchasing an engine certified according to procedures specified in this subpart, for the same model year and demonstrating compliance according to one of the methods specified in paragraph (a) of this section.

(2) Purchasing a non-certified engine and demonstrating compliance with the emission standards specified in §60.4233(d) or (e) and according to the requirements specified in §60.4244, as applicable, and according to paragraphs (b)(2)(i) and (ii) of this section.

(i) If you are an owner or operator of a stationary SI internal combustion engine greater than 25 HP and less than or equal to 500 HP, you must keep a maintenance plan and records of conducted maintenance and must, to the extent

practicable, maintain and operate the engine in a manner consistent with good air pollution control practice for minimizing emissions. In addition, you must conduct an initial performance test to demonstrate compliance.

(ii) If you are an owner or operator of a stationary SI internal combustion engine greater than 500 HP, you must keep a maintenance plan and records of conducted maintenance and must, to the extent practicable, maintain and operate the engine in a manner consistent with good air pollution control practice for minimizing emissions. In addition, you must conduct an initial performance test and conduct subsequent performance testing every 8,760 hours or 3 years, whichever comes first, thereafter to demonstrate compliance.

(c) If you are an owner or operator of a stationary SI internal combustion engine that must comply with the emission standards specified in §60.4233(f), you must demonstrate compliance according paragraph (b)(2)(i) or (ii) of this section, except that if you comply according to paragraph (b)(2)(i) of this section, you demonstrate that your non-certified engine complies with the emission standards specified in §60.4233(f).

(d) If you own or operate an emergency stationary ICE, you must operate the emergency stationary ICE according to the requirements in paragraphs (d)(1) through (3) of this section. In order for the engine to be considered an emergency stationary ICE under this subpart, any operation other than emergency operation, maintenance and testing, emergency demand response, and operation in non-emergency situations for 50 hours per year, as described in paragraphs (d)(1) through (3) of this section, is prohibited. If you do not operate the engine according to the requirements in paragraphs (d)(1) through (3) of this section, the engine will not be considered an emergency engine under this subpart and must meet all requirements for non-emergency engines.

(1) There is no time limit on the use of emergency stationary ICE in emergency situations.

(2) You may operate your emergency stationary ICE for any combination of the purposes specified in paragraphs (d)(2)(i) through (iii) of this section for a maximum of 100 hours per calendar year. Any operation for non-emergency situations as allowed by paragraph (d)(3) of this section counts as part of the 100 hours per calendar year allowed by this paragraph (d)(2).

(i) Emergency stationary ICE may be operated for maintenance checks and readiness testing, provided that the tests are recommended by federal, state or local government, the manufacturer, the vendor, the regional transmission organization or equivalent balancing authority and transmission operator, or the insurance company associated with the engine. The owner or operator may petition the Administrator for approval of additional hours to be used for maintenance checks and readiness testing, but a petition is not required if the owner or operator maintains records indicating that federal, state, or local standards require maintenance and testing of emergency ICE beyond 100 hours per calendar year.

(ii) Emergency stationary ICE may be operated for emergency demand response for periods in which the Reliability Coordinator under the North American Electric Reliability Corporation (NERC) Reliability Standard EOP-002-3, Capacity and Energy Emergencies (incorporated by reference, see §60.17), or other authorized entity as determined by the Reliability Coordinator, has declared an Energy Emergency Alert Level 2 as defined in the NERC Reliability Standard EOP-002-3.

(iii) Emergency stationary ICE may be operated for periods where there is a deviation of voltage or frequency of 5 percent or greater below standard voltage or frequency.

(3) Emergency stationary ICE may be operated for up to 50 hours per calendar year in non-emergency situations. The 50 hours of operation in non-emergency situations are counted as part of the 100 hours per calendar year for maintenance and testing and emergency demand response provided in paragraph (d)(2) of this section. Except as provided in paragraph (d)(3)(i) of this section, the 50 hours per year for non-emergency situations cannot be used for peak shaving or non-emergency demand response, or to generate income for a facility to an electric grid or otherwise supply power as part of a financial arrangement with another entity.

(i) The 50 hours per year for non-emergency situations can be used to supply power as part of a financial arrangement with another entity if all of the following conditions are met:

(A) The engine is dispatched by the local balancing authority or local transmission and distribution system operator;

(B) The dispatch is intended to mitigate local transmission and/or distribution limitations so as to avert potential voltage collapse or line overloads that could lead to the interruption of power supply in a local area or region.

(C) The dispatch follows reliability, emergency operation or similar protocols that follow specific NERC, regional, state, public utility commission or local standards or guidelines.

(D) The power is provided only to the facility itself or to support the local transmission and distribution system.

(E) The owner or operator identifies and records the entity that dispatches the engine and the specific NERC, regional, state, public utility commission or local standards or guidelines that are being followed for dispatching the engine. The local balancing authority or local transmission and distribution system operator may keep these records on behalf of the engine owner or operator.

(ii) [Reserved]

(e) Owners and operators of stationary SI natural gas fired engines may operate their engines using propane for a maximum of 100 hours per year as an alternative fuel solely during emergency operations, but must keep records of such use. If propane is used for more than 100 hours per year in an engine that is not certified to the emission standards when using propane, the owners and operators are required to conduct a performance test to demonstrate compliance with the emission standards of §60.4233.

(f) If you are an owner or operator of a stationary SI internal combustion engine that is less than or equal to 500 HP and you purchase a non-certified engine or you do not operate and maintain your certified stationary SI internal combustion engine and control device according to the manufacturer's written emission-related instructions, you are required to perform initial performance testing as indicated in this section, but you are not required to conduct subsequent performance testing unless the stationary engine is rebuilt or undergoes major repair or maintenance. A rebuilt stationary SI ICE means an engine that has been rebuilt as that term is defined in 40 CFR 94.11(a).

(g) It is expected that air-to-fuel ratio controllers will be used with the operation of three-way catalysts/non-selective catalytic reduction. The AFR controller must be maintained and operated appropriately in order to ensure proper operation of the engine and control device to minimize emissions at all times.

(h) If you are an owner/operator of an stationary SI internal combustion engine with maximum engine power greater than or equal to 500 HP that is manufactured after July 1, 2007 and before July 1, 2008, and must comply with the emission standards specified in sections 60.4233(b) or (c), you must comply by one of the methods specified in paragraphs (h)(1) through (h)(4) of this section.

(1) Purchasing an engine certified according to 40 CFR part 1048. The engine must be installed and configured according to the manufacturer's specifications.

(2) Keeping records of performance test results for each pollutant for a test conducted on a similar engine. The test must have been conducted using the same methods specified in this subpart and these methods must have been followed correctly.

(3) Keeping records of engine manufacturer data indicating compliance with the standards.

(4) Keeping records of control device vendor data indicating compliance with the standards.

(i) If you are an owner or operator of a modified or reconstructed stationary SI internal combustion engine and must comply with the emission standards specified in §60.4233(f), you must demonstrate compliance according to one of the methods specified in paragraphs (i)(1) or (2) of this section.

(1) Purchasing, or otherwise owning or operating, an engine certified to the emission standards in §60.4233(f), as applicable.

(2) Conducting a performance test to demonstrate initial compliance with the emission standards according to the requirements specified in §60.4244. The test must be conducted within 60 days after the engine commences operation after the modification or reconstruction.

[73 FR 3591, Jan. 18, 2008, as amended at 76 FR 37974, June 28, 2011; 78 FR 6697, Jan. 30, 2013]

Testing Requirements for Owners and Operators

§60.4244 What test methods and other procedures must I use if I am an owner or operator of a stationary SI internal combustion engine?

Owners and operators of stationary SI ICE who conduct performance tests must follow the procedures in paragraphs (a) through (f) of this section.

(a) Each performance test must be conducted within 10 percent of 100 percent peak (or the highest achievable) load and according to the requirements in §60.8 and under the specific conditions that are specified by Table 2 to this subpart.

(b) You may not conduct performance tests during periods of startup, shutdown, or malfunction, as specified in §60.8(c). If your stationary SI internal combustion engine is non-operational, you do not need to startup the engine solely to conduct a performance test; however, you must conduct the performance test immediately upon startup of the engine.

(c) You must conduct three separate test runs for each performance test required in this section, as specified in §60.8(f). Each test run must be conducted within 10 percent of 100 percent peak (or the highest achievable) load and last at least 1 hour.

(d) To determine compliance with the NO_x mass per unit output emission limitation, convert the concentration of NO_x in the engine exhaust using Equation 1 of this section:

$$ER = \frac{C_d \times 1.912 \times 10^{-3} \times Q \times T}{HP - hr} \quad (\text{Eq. 1})$$

Where:

ER = Emission rate of NO_x in g/HP-hr.

C_d = Measured NO_x concentration in parts per million by volume (ppmv).

1.912×10⁻³ = Conversion constant for ppm NO_x to grams per standard cubic meter at 20 degrees Celsius.

Q = Stack gas volumetric flow rate, in standard cubic meter per hour, dry basis.

T = Time of test run, in hours.

HP-hr = Brake work of the engine, horsepower-hour (HP-hr).

(e) To determine compliance with the CO mass per unit output emission limitation, convert the concentration of CO in the engine exhaust using Equation 2 of this section:

$$ER = \frac{C_d \times 1.164 \times 10^{-3} \times Q \times T}{HP - hr} \quad (\text{Eq. 2})$$

Where:

ER = Emission rate of CO in g/HP-hr.

C_d = Measured CO concentration in ppmv.

1.164×10^{-3} = Conversion constant for ppm CO to grams per standard cubic meter at 20 degrees Celsius.

Q = Stack gas volumetric flow rate, in standard cubic meters per hour, dry basis.

T = Time of test run, in hours.

HP-hr = Brake work of the engine, in HP-hr.

(f) For purposes of this subpart, when calculating emissions of VOC, emissions of formaldehyde should not be included. To determine compliance with the VOC mass per unit output emission limitation, convert the concentration of VOC in the engine exhaust using Equation 3 of this section:

$$ER = \frac{C_d \times 1.833 \times 10^{-3} \times Q \times T}{HP - hr} \quad (\text{Eq. 3})$$

Where:

ER = Emission rate of VOC in g/HP-hr.

C_d = VOC concentration measured as propane in ppmv.

1.833×10^{-3} = Conversion constant for ppm VOC measured as propane, to grams per standard cubic meter at 20 degrees Celsius.

Q = Stack gas volumetric flow rate, in standard cubic meters per hour, dry basis.

T = Time of test run, in hours.

HP-hr = Brake work of the engine, in HP-hr.

(g) If the owner/operator chooses to measure VOC emissions using either Method 18 of 40 CFR part 60, appendix A, or Method 320 of 40 CFR part 63, appendix A, then it has the option of correcting the measured VOC emissions to account for the potential differences in measured values between these methods and Method 25A. The results from Method 18 and Method 320 can be corrected for response factor differences using Equations 4 and 5 of this section. The corrected VOC concentration can then be placed on a propane basis using Equation 6 of this section.

$$RF_i = \frac{C_{Mi}}{C_{Ai}} \quad (\text{Eq. 4})$$

Where:

RF_i = Response factor of compound i when measured with EPA Method 25A.

C_{Mi} = Measured concentration of compound i in ppmv as carbon.

C_{Ai} = True concentration of compound i in ppmv as carbon.

$$C_{i,cor} = RF_i \times C_{i,meas} \quad (\text{Eq. 5})$$

Where:

$C_{i\text{corr}}$ = Concentration of compound i corrected to the value that would have been measured by EPA Method 25A, ppmv as carbon.

$C_{i\text{meas}}$ = Concentration of compound i measured by EPA Method 320, ppmv as carbon.

$$C_{\text{Peq}} = 0.6098 \times C_{i\text{corr}} \quad (\text{Eq. 6})$$

Where:

C_{Peq} = Concentration of compound i in mg of propane equivalent per DSCM.

C_{Peq} = Concentration of compound i in mg of propane equivalent per DSCM.

Notification, Reports, and Records for Owners and Operators

§60.4245 What are my notification, reporting, and recordkeeping requirements if I am an owner or operator of a stationary SI internal combustion engine?

Owners or operators of stationary SI ICE must meet the following notification, reporting and recordkeeping requirements.

(a) Owners and operators of all stationary SI ICE must keep records of the information in paragraphs (a)(1) through (4) of this section.

(1) All notifications submitted to comply with this subpart and all documentation supporting any notification.

(2) Maintenance conducted on the engine.

(3) If the stationary SI internal combustion engine is a certified engine, documentation from the manufacturer that the engine is certified to meet the emission standards and information as required in 40 CFR parts 90, 1048, 1054, and 1060, as applicable.

(4) If the stationary SI internal combustion engine is not a certified engine or is a certified engine operating in a non-certified manner and subject to §60.4243(a)(2), documentation that the engine meets the emission standards.

(b) For all stationary SI emergency ICE greater than or equal to 500 HP manufactured on or after July 1, 2010, that do not meet the standards applicable to non-emergency engines, the owner or operator of must keep records of the hours of operation of the engine that is recorded through the non-resettable hour meter. For all stationary SI emergency ICE greater than or equal to 130 HP and less than 500 HP manufactured on or after July 1, 2011 that do not meet the standards applicable to non-emergency engines, the owner or operator of must keep records of the hours of operation of the engine that is recorded through the non-resettable hour meter. For all stationary SI emergency ICE greater than 25 HP and less than 130 HP manufactured on or after July 1, 2008, that do not meet the standards applicable to non-emergency engines, the owner or operator of must keep records of the hours of operation of the engine that is recorded through the non-resettable hour meter. The owner or operator must document how many hours are spent for emergency operation, including what classified the operation as emergency and how many hours are spent for non-emergency operation.

(c) Owners and operators of stationary SI ICE greater than or equal to 500 HP that have not been certified by an engine manufacturer to meet the emission standards in §60.4231 must submit an initial notification as required in §60.7(a)(1). The notification must include the information in paragraphs (c)(1) through (5) of this section.

(1) Name and address of the owner or operator;

(2) The address of the affected source;

(3) Engine information including make, model, engine family, serial number, model year, maximum engine power, and engine displacement;

(4) Emission control equipment; and

(5) Fuel used.

(d) Owners and operators of stationary SI ICE that are subject to performance testing must submit a copy of each performance test as conducted in §60.4244 within 60 days after the test has been completed.

(e) If you own or operate an emergency stationary SI ICE with a maximum engine power more than 100 HP that operates or is contractually obligated to be available for more than 15 hours per calendar year for the purposes specified in §60.4243(d)(2)(ii) and (iii) or that operates for the purposes specified in §60.4243(d)(3)(i), you must submit an annual report according to the requirements in paragraphs (e)(1) through (3) of this section.

(1) The report must contain the following information:

(i) Company name and address where the engine is located.

(ii) Date of the report and beginning and ending dates of the reporting period.

(iii) Engine site rating and model year.

(iv) Latitude and longitude of the engine in decimal degrees reported to the fifth decimal place.

(v) Hours operated for the purposes specified in §60.4243(d)(2)(ii) and (iii), including the date, start time, and end time for engine operation for the purposes specified in §60.4243(d)(2)(ii) and (iii).

(vi) Number of hours the engine is contractually obligated to be available for the purposes specified in §60.4243(d)(2)(ii) and (iii).

(vii) Hours spent for operation for the purposes specified in §60.4243(d)(3)(i), including the date, start time, and end time for engine operation for the purposes specified in §60.4243(d)(3)(i). The report must also identify the entity that dispatched the engine and the situation that necessitated the dispatch of the engine.

(2) The first annual report must cover the calendar year 2015 and must be submitted no later than March 31, 2016. Subsequent annual reports for each calendar year must be submitted no later than March 31 of the following calendar year.

(3) The annual report must be submitted electronically using the subpart specific reporting form in the Compliance and Emissions Data Reporting Interface (CEDRI) that is accessed through EPA's Central Data Exchange (CDX) (www.epa.gov/cdx). However, if the reporting form specific to this subpart is not available in CEDRI at the time that the report is due, the written report must be submitted to the Administrator at the appropriate address listed in §60.4.

[73 FR 3591, Jan. 18, 2008, as amended at 73 FR 59177, Oct. 8, 2008; 78 FR 6697, Jan. 30, 2013]

General Provisions

§60.4246 What parts of the General Provisions apply to me?

Table 3 to this subpart shows which parts of the General Provisions in §§60.1 through 60.19 apply to you.

Mobile Source Provisions

§60.4247 What parts of the mobile source provisions apply to me if I am a manufacturer of stationary SI internal combustion engines or a manufacturer of equipment containing such engines?

(a) Manufacturers certifying to emission standards in 40 CFR part 90, including manufacturers certifying emergency engines below 130 HP, must meet the provisions of 40 CFR part 90. Manufacturers certifying to emission standards in 40 CFR part 1054 must meet the provisions of 40 CFR part 1054. Manufacturers of equipment containing stationary SI internal combustion engines meeting the provisions of 40 CFR part 1054 must meet the provisions of 40 CFR part 1060 to the extent they apply to equipment manufacturers.

(b) Manufacturers required to certify to emission standards in 40 CFR part 1048 must meet the provisions of 40 CFR part 1048. Manufacturers certifying to emission standards in 40 CFR part 1048 pursuant to the voluntary certification program must meet the requirements in Table 4 to this subpart as well as the standards in 40 CFR 1048.101.

(c) For manufacturers of stationary SI internal combustion engines participating in the voluntary certification program and certifying engines to Table 1 to this subpart, Table 4 to this subpart shows which parts of the mobile source provisions in 40 CFR parts 1048, 1065, and 1068 apply to you. Compliance with the deterioration factor provisions under 40 CFR 1048.205(n) and 1048.240 will be required for engines built new on and after January 1, 2010. Prior to January 1, 2010, manufacturers of stationary internal combustion engines participating in the voluntary certification program have the option to develop their own deterioration factors based on an engineering analysis.

[73 FR 3591, Jan. 18, 2008, as amended at 73 FR 59177, Oct. 8, 2008]

Definitions

§60.4248 What definitions apply to this subpart?

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

Certified emissions life means the period during which the engine is designed to properly function in terms of reliability and fuel consumption, without being remanufactured, specified as a number of hours of operation or calendar years, whichever comes first. The values for certified emissions life for stationary SI ICE with a maximum engine power less than or equal to 19 KW (25 HP) are given in 40 CFR 90.105, 40 CFR 1054.107, and 40 CFR 1060.101, as appropriate. The values for certified emissions life for stationary SI ICE with a maximum engine power greater than 19 KW (25 HP) certified to 40 CFR part 1048 are given in 40 CFR 1048.101(g). The certified emissions life for stationary SI ICE with a maximum engine power greater than 75 KW (100 HP) certified under the voluntary manufacturer certification program of this subpart is 5,000 hours or 7 years, whichever comes first. You may request in your application for certification that we approve a shorter certified emissions life for an engine family. We may approve a shorter certified emissions life, in hours of engine operation but not in years, if we determine that these engines will rarely operate longer than the shorter certified emissions life. If engines identical to those in the engine family have already been produced and are in use, your demonstration must include documentation from such in-use engines. In other cases, your demonstration must include an engineering analysis of information equivalent to such in-use data, such as data from research engines or similar engine models that are already in production. Your demonstration must also include any overhaul interval that you recommend, any mechanical warranty that you offer for the engine or its components, and any relevant customer design specifications. Your demonstration may include any other relevant information. The certified emissions life value may not be shorter than any of the following:

- (i) 1,000 hours of operation.
- (ii) Your recommended overhaul interval.
- (iii) Your mechanical warranty for the engine.

Certified stationary internal combustion engine means an engine that belongs to an engine family that has a certificate of conformity that complies with the emission standards and requirements in this part, or of 40 CFR part 90, 40 CFR part 1048, or 40 CFR part 1054, as appropriate.

Combustion turbine means all equipment, including but not limited to the turbine, the fuel, air, lubrication and exhaust gas systems, control systems (except emissions control equipment), and any ancillary components and sub-components comprising any simple cycle combustion turbine, any regenerative/recuperative cycle combustion turbine, the combustion turbine portion of any cogeneration cycle combustion system, or the combustion turbine portion of any combined cycle steam/electric generating system.

Compression ignition means relating to a type of stationary internal combustion engine that is not a spark ignition engine.

Date of manufacture means one of the following things:

- (1) For freshly manufactured engines and modified engines, date of manufacture means the date the engine is originally produced.
- (2) For reconstructed engines, date of manufacture means the date the engine was originally produced, except as specified in paragraph (3) of this definition.
- (3) Reconstructed engines are assigned a new date of manufacture if the fixed capital cost of the new and refurbished components exceeds 75 percent of the fixed capital cost of a comparable entirely new facility. An engine that is produced from a previously used engine block does not retain the date of manufacture of the engine in which the engine block was previously used if the engine is produced using all new components except for the engine block. In these cases, the date of manufacture is the date of reconstruction or the date the new engine is produced.

Diesel fuel means any liquid obtained from the distillation of petroleum with a boiling point of approximately 150 to 360 degrees Celsius. One commonly used form is number 2 distillate oil.

Digester gas means any gaseous by-product of wastewater treatment typically formed through the anaerobic decomposition of organic waste materials and composed principally of methane and carbon dioxide (CO₂).

Emergency stationary internal combustion engine means any stationary reciprocating internal combustion engine that meets all of the criteria in paragraphs (1) through (3) of this definition. All emergency stationary ICE must comply with the requirements specified in §60.4243(d) in order to be considered emergency stationary ICE. If the engine does not comply with the requirements specified in §60.4243(d), then it is not considered to be an emergency stationary ICE under this subpart.

- (1) The stationary ICE is operated to provide electrical power or mechanical work during an emergency situation. Examples include stationary ICE used to produce power for critical networks or equipment (including power supplied to portions of a facility) when electric power from the local utility (or the normal power source, if the facility runs on its own power production) is interrupted, or stationary ICE used to pump water in the case of fire or flood, etc.
- (2) The stationary ICE is operated under limited circumstances for situations not included in paragraph (1) of this definition, as specified in §60.4243(d).
- (3) The stationary ICE operates as part of a financial arrangement with another entity in situations not included in paragraph (1) of this definition only as allowed in §60.4243(d)(2)(ii) or (iii) and §60.4243(d)(3)(i).

Engine manufacturer means the manufacturer of the engine. See the definition of "manufacturer" in this section.

Four-stroke engine means any type of engine which completes the power cycle in two crankshaft revolutions, with intake and compression strokes in the first revolution and power and exhaust strokes in the second revolution.

Freshly manufactured engine means an engine that has not been placed into service. An engine becomes freshly manufactured when it is originally produced.

Gasoline means any fuel sold in any State for use in motor vehicles and motor vehicle engines, or nonroad or stationary engines, and commonly or commercially known or sold as gasoline.

Installed means the engine is placed and secured at the location where it is intended to be operated.

Landfill gas means a gaseous by-product of the land application of municipal refuse typically formed through the anaerobic decomposition of waste materials and composed principally of methane and CO₂.

Lean burn engine means any two-stroke or four-stroke spark ignited engine that does not meet the definition of a rich burn engine.

Liquefied petroleum gas means any liquefied hydrocarbon gas obtained as a by-product in petroleum refining or natural gas production.

Manufacturer has the meaning given in section 216(1) of the Clean Air Act. In general, this term includes any person who manufactures a stationary engine for sale in the United States or otherwise introduces a new stationary engine into commerce in the United States. This includes importers who import stationary engines for resale.

Maximum engine power means maximum engine power as defined in 40 CFR 1048.801.

Model year means the calendar year in which an engine is manufactured (see "date of manufacture"), except as follows:

(1) Model year means the annual new model production period of the engine manufacturer in which an engine is manufactured (see "date of manufacture"), if the annual new model production period is different than the calendar year and includes January 1 of the calendar year for which the model year is named. It may not begin before January 2 of the previous calendar year and it must end by December 31 of the named calendar year.

(2) For an engine that is converted to a stationary engine after being placed into service as a nonroad or other non-stationary engine, model year means the calendar year or new model production period in which the engine was manufactured (see "date of manufacture").

Natural gas means a naturally occurring mixture of hydrocarbon and non-hydrocarbon gases found in geologic formations beneath the Earth's surface, of which the principal constituent is methane. Natural gas may be field or pipeline quality.

Other internal combustion engine means any internal combustion engine, except combustion turbines, which is not a reciprocating internal combustion engine or rotary internal combustion engine.

Pipeline-quality natural gas means a naturally occurring fluid mixture of hydrocarbons (e.g., methane, ethane, or propane) produced in geological formations beneath the Earth's surface that maintains a gaseous state at standard atmospheric temperature and pressure under ordinary conditions, and which is provided by a supplier through a pipeline. Pipeline-quality natural gas must either be composed of at least 70 percent methane by volume or have a gross calorific value between 950 and 1,100 British thermal units per standard cubic foot.

Rich burn engine means any four-stroke spark ignited engine where the manufacturer's recommended operating air/fuel ratio divided by the stoichiometric air/fuel ratio at full load conditions is less than or equal to 1.1. Engines originally manufactured as rich burn engines, but modified prior to June 12, 2006, with passive emission control technology for NO_x (such as pre-combustion chambers) will be considered lean burn engines. Also, existing engines where there are no manufacturer's recommendations regarding air/fuel ratio will be considered a rich burn engine if the excess oxygen content of the exhaust at full load conditions is less than or equal to 2 percent.

Rotary internal combustion engine means any internal combustion engine which uses rotary motion to convert heat energy into mechanical work.

Spark ignition means relating to either: a gasoline-fueled engine; or any other type of engine with a spark plug (or other sparking device) and with operating characteristics significantly similar to the theoretical Otto combustion cycle. Spark ignition engines usually use a throttle to regulate intake air flow to control power during normal operation. Dual-fuel engines in which a liquid fuel (typically diesel fuel) is used for compression ignition and gaseous fuel (typically

natural gas) is used as the primary fuel at an annual average ratio of less than 2 parts diesel fuel to 100 parts total fuel on an energy equivalent basis are spark ignition engines.

Stationary internal combustion engine means any internal combustion engine, except combustion turbines, that converts heat energy into mechanical work and is not mobile. Stationary ICE differ from mobile ICE in that a stationary internal combustion engine is not a nonroad engine as defined at 40 CFR 1068.30 (excluding paragraph (2)(ii) of that definition), and is not used to propel a motor vehicle, aircraft, or a vehicle used solely for competition. Stationary ICE include reciprocating ICE, rotary ICE, and other ICE, except combustion turbines.

Stationary internal combustion engine test cell/stand means an engine test cell/stand, as defined in 40 CFR part 63, subpart PPPPP, that tests stationary ICE.

Stoichiometric means the theoretical air-to-fuel ratio required for complete combustion.

Subpart means 40 CFR part 60, subpart JJJJ.

Two-stroke engine means a type of engine which completes the power cycle in single crankshaft revolution by combining the intake and compression operations into one stroke and the power and exhaust operations into a second stroke. This system requires auxiliary scavenging and inherently runs lean of stoichiometric.

Volatile organic compounds means volatile organic compounds as defined in 40 CFR 51.100(s).

Voluntary certification program means an optional engine certification program that manufacturers of stationary SI internal combustion engines with a maximum engine power greater than 19 KW (25 HP) that do not use gasoline and are not rich burn engines that use LPG can choose to participate in to certify their engines to the emission standards in §60.4231(d) or (e), as applicable.

[73 FR 3591, Jan. 18, 2008, as amended at 73 FR 59177, Oct. 8, 2008; 76 FR 37974, June 28, 2011; 78 FR 6698, Jan. 30, 2013]

Table 1 to Subpart JJJJ of Part 60—NO_x, CO, and VOC Emission Standards for Stationary Non-Emergency SI Engines ≥100 HP (Except Gasoline and Rich Burn LPG), Stationary SI Landfill/Digester Gas Engines, and Stationary Emergency Engines >25 HP

Engine type and fuel	Maximum engine power	Manufacture date	Emission standards ^a					
			g/HP-hr			ppmvd at 15% O ₂		
			NO _x	CO	VOC ^d	NO _x	CO	VOC ^d
Non-Emergency SI Natural Gas ^b and Non-Emergency SI Lean Burn LPG ^b	100≤HP<500	7/1/2008	2.0	4.0	1.0	160	540	86
		1/1/2011	1.0	2.0	0.7	82	270	60
Non-Emergency SI Lean Burn Natural Gas and LPG	500≤HP<1,350	1/1/2008	2.0	4.0	1.0	160	540	86
		7/1/2010	1.0	2.0	0.7	82	270	60
Non-Emergency SI Natural Gas and Non-Emergency SI Lean Burn LPG (except lean burn 500≤HP<1,350)	HP≥500	7/1/2007	2.0	4.0	1.0	160	540	86
	HP≥500	7/1/2010	1.0	2.0	0.7	82	270	60
Landfill/Digester Gas (except lean burn 500≤HP<1,350)	HP<500	7/1/2008	3.0	5.0	1.0	220	610	80
		1/1/2011	2.0	5.0	1.0	150	610	80
	HP≥500	7/1/2007	3.0	5.0	1.0	220	610	80
		7/1/2010	2.0	5.0	1.0	150	610	80
Landfill/Digester Gas Lean Burn	500≤HP<1,350	1/1/2008	3.0	5.0	1.0	220	610	80

Engine type and fuel	Maximum engine power	Manufacture date	Emission standards ^a					
			g/HP-hr			ppmvd at 15% O ₂		
			NO _x	CO	VOC ^d	NO _x	CO	VOC ^d
		7/1/2010	2.0	5.0	1.0	150	610	80
Emergency	25<HP<130	1/1/2009	^c 10	387	N/A	N/A	N/A	N/A
	HP≥130		2.0	4.0	1.0	160	540	86

^aOwners and operators of stationary non-certified SI engines may choose to comply with the emission standards in units of either g/HP-hr or ppmvd at 15 percent O₂.

^bOwners and operators of new or reconstructed non-emergency lean burn SI stationary engines with a site rating of greater than or equal to 250 brake HP located at a major source that are meeting the requirements of 40 CFR part 63, subpart ZZZZ, Table 2a do not have to comply with the CO emission standards of Table 1 of this subpart.

^cThe emission standards applicable to emergency engines between 25 HP and 130 HP are in terms of NO_x + HC.

^dFor purposes of this subpart, when calculating emissions of volatile organic compounds, emissions of formaldehyde should not be included.

[76 FR 37975, June 28, 2011]

Table 2 to Subpart JJJJ of Part 60—Requirements for Performance Tests

As stated in §60.4244, you must comply with the following requirements for performance tests within 10 percent of 100 percent peak (or the highest achievable) load:

Table 2 to Subpart JJJJ of Part 60—Requirements for Performance Tests

For each	Complying with the requirement to	You must	Using	According to the following requirements
1. Stationary SI internal combustion engine demonstrating compliance according to §60.4244.	a. limit the concentration of NO _x in the stationary SI internal combustion engine exhaust.	i. Select the sampling port location and the number/location of traverse points at the exhaust of the stationary internal combustion engine;	(1) Method 1 or 1A of 40 CFR part 60, appendix A-1, if measuring flow rate.	(a) Alternatively, for NO _x , O ₂ , and moisture measurement, ducts ≤6 inches in diameter may be sampled at a single point located at the duct centroid and ducts >6 and ≤12 inches in diameter may be sampled at 3 traverse points located at 16.7, 50.0, and 83.3% of the measurement line ('3-point long line'). If the duct is >12 inches in diameter and the sampling port location meets the two and half-diameter criterion of Section 11.1.1 of Method 1 of 40 CFR part 60, Appendix A, the duct may be sampled at '3-point long line'; otherwise, conduct the stratification testing and select sampling points according to Section 8.1.2 of Method 7E of 40 CFR part 60, Appendix A.

For each	Complying with the requirement to	You must	Using	According to the following requirements
		ii. Determine the O ₂ concentration of the stationary internal combustion engine exhaust at the sampling port location;	(2) Method 3, 3A, or 3B ^b of 40 CFR part 60, appendix A-2 or ASTM Method D6522-00 (Reapproved 2005) ^{ae} .	(b) Measurements to determine O ₂ concentration must be made at the same time as the measurements for NO _x concentration.
		iii. If necessary, determine the exhaust flowrate of the stationary internal combustion engine exhaust;	(3) Method 2 or 2C of 40 CFR part 60, appendix A-1 or Method 19 of 40 CFR part 60, appendix A-7.	
		iv. If necessary, measure moisture content of the stationary internal combustion engine exhaust at the sampling port location; and	(4) Method 4 of 40 CFR part 60, appendix A-3, Method 320 of 40 CFR part 63, appendix A, or ASTM Method D 6348-03 ^e .	(c) Measurements to determine moisture must be made at the same time as the measurement for NO _x concentration.
		v. Measure NO _x at the exhaust of the stationary internal combustion engine; if using a control device, the sampling site must be located at the outlet of the control device.	(5) Method 7E of 40 CFR part 60, appendix A-4, ASTM Method D6522-00 (Reapproved 2005) ^{ae} , Method 320 of 40 CFR part 63, appendix A, or ASTM Method D 6348-03 ^e .	(d) Results of this test consist of the average of the three 1-hour or longer runs.
	b. limit the concentration of CO in the stationary SI internal combustion engine exhaust.	i. Select the sampling port location and the number/location of traverse points at the exhaust of the stationary internal combustion engine;	(1) Method 1 or 1A of 40 CFR part 60, appendix A-1, if measuring flow rate.	(a) Alternatively, for CO, O ₂ , and moisture measurement, ducts ≤6 inches in diameter may be sampled at a single point located at the duct centroid and ducts >6 and ≤12 inches in diameter may be sampled at 3 traverse points located at 16.7, 50.0, and 83.3% of the measurement line ('3-point long line'). If the duct is >12 inches in diameter <i>and</i> the sampling port location meets the two and half-diameter criterion of Section 11.1.1 of Method 1 of 40 CFR part 60, Appendix A, the duct may be sampled at '3-point long line'; otherwise, conduct the stratification testing and select sampling points according to Section 8.1.2 of Method 7E of 40 CFR part 60, Appendix A.

For each	Complying with the requirement to	You must	Using	According to the following requirements
		ii. Determine the O ₂ concentration of the stationary internal combustion engine exhaust at the sampling port location;	(2) Method 3, 3A, or 3B ^b of 40 CFR part 60, appendix A-2 or ASTM Method D6522-00 (Reapproved 2005) ^{ae} .	(b) Measurements to determine O ₂ concentration must be made at the same time as the measurements for CO concentration.
		iii. If necessary, determine the exhaust flowrate of the stationary internal combustion engine exhaust;	(3) Method 2 or 2C of 40 CFR part 60, appendix A-1 or Method 19 of 40 CFR part 60, appendix A-7.	
		iv. If necessary, measure moisture content of the stationary internal combustion engine exhaust at the sampling port location; and	(4) Method 4 of 40 CFR part 60, appendix A-3, Method 320 of 40 CFR part 63, appendix A, or ASTM Method D 6348-03 ^e .	(c) Measurements to determine moisture must be made at the same time as the measurement for CO concentration.
		v. Measure CO at the exhaust of the stationary internal combustion engine; if using a control device, the sampling site must be located at the outlet of the control device.	(5) Method 10 of 40 CFR part 60, appendix A4, ASTM Method D6522-00 (Reapproved 2005) ^{ae} , Method 320 of 40 CFR part 63, appendix A, or ASTM Method D 6348-03 ^e .	(d) Results of this test consist of the average of the three 1-hour or longer runs.
	c. limit the concentration of VOC in the stationary SI internal combustion engine exhaust	i. Select the sampling port location and the number/location of traverse points at the exhaust of the stationary internal combustion engine;	(1) Method 1 or 1A of 40 CFR part 60, appendix A-1, if measuring flow rate.	(a) Alternatively, for VOC, O ₂ , and moisture measurement, ducts ≤6 inches in diameter may be sampled at a single point located at the duct centroid and ducts >6 and ≤12 inches in diameter may be sampled at 3 traverse points located at 16.7, 50.0, and 83.3% of the measurement line ('3-point long line'). If the duct is >12 inches in diameter and the sampling port location meets the two and half-diameter criterion of Section 11.1.1 of Method 1 of 40 CFR part 60, Appendix A, the duct may be sampled at '3-point long line'; otherwise, conduct the stratification testing and select sampling points according to Section 8.1.2 of Method 7E of 40 CFR part 60, Appendix A.

For each	Complying with the requirement to	You must	Using	According to the following requirements
		ii. Determine the O ₂ concentration of the stationary internal combustion engine exhaust at the sampling port location;	(2) Method 3, 3A, or 3B ^b of 40 CFR part 60, appendix A-2 or ASTM Method D6522-00 (Reapproved 2005) ^{ae} .	(b) Measurements to determine O ₂ concentration must be made at the same time as the measurements for VOC concentration.
		iii. If necessary, determine the exhaust flowrate of the stationary internal combustion engine exhaust;	(3) Method 2 or 2C of 40 CFR part 60, appendix A-1 or Method 19 of 40 CFR part 60, appendix A-7.	
		iv. If necessary, measure moisture content of the stationary internal combustion engine exhaust at the sampling port location; and	(4) Method 4 of 40 CFR part 60, appendix A-3, Method 320 of 40 CFR part 63, appendix A, or ASTM Method D 6348-03 ^e .	(c) Measurements to determine moisture must be made at the same time as the measurement for VOC concentration.
		v. Measure VOC at the exhaust of the stationary internal combustion engine; if using a control device, the sampling site must be located at the outlet of the control device.	(5) Methods 25A and 18 of 40 CFR part 60, appendices A-6 and A-7, Method 25A with the use of a methane cutter as described in 40 CFR 1065.265, Method 18 of 40 CFR part 60, appendix A-6 ^{cd} , Method 320 of 40 CFR part 63, appendix A, or ASTM Method D 6348-03 ^e .	(d) Results of this test consist of the average of the three 1-hour or longer runs.

^aAlso, you may petition the Administrator for approval to use alternative methods for portable analyzer.

^bYou may use ASME PTC 19.10-1981, Flue and Exhaust Gas Analyses, for measuring the O₂ content of the exhaust gas as an alternative to EPA Method 3B. AMSE PTC 19.10-1981 incorporated by reference, see 40 CFR 60.17

^cYou may use EPA Method 18 of 40 CFR part 60, appendix A-6, provided that you conduct an adequate pre-survey test prior to the emissions test, such as the one described in OTM 11 on EPA's Web site (<http://www.epa.gov/ttn/emc/prelim/otm11.pdf>).

^dYou may use ASTM D6420-99 (2004), Test Method for Determination of Gaseous Organic Compounds by Direct Interface Gas Chromatography/Mass Spectrometry as an alternative to EPA Method 18 for measuring total nonmethane organic. ASTM D6420-99(2004) incorporated by reference; see 40 CFR 60.17.

^eIncorporated by reference; see 40 CFR 60.17.

Table 3 to Subpart JJJJ of Part 60—Applicability of General Provisions to Subpart JJJJ

[As stated in §60.4246, you must comply with the following applicable General Provisions]

General provisions citation	Subject of citation	Applies to subpart	Explanation
§60.1	General applicability of the General Provisions	Yes	
§60.2	Definitions	Yes	Additional terms defined in §60.4248.
§60.3	Units and abbreviations	Yes	
§60.4	Address	Yes	
§60.5	Determination of construction or modification	Yes	
§60.6	Review of plans	Yes	
§60.7	Notification and Recordkeeping	Yes	Except that §60.7 only applies as specified in §60.4245.
§60.8	Performance tests	Yes	Except that §60.8 only applies to owners and operators who are subject to performance testing in subpart JJJJ.
§60.9	Availability of information	Yes	
§60.10	State Authority	Yes	
§60.11	Compliance with standards and maintenance requirements	Yes	Requirements are specified in subpart JJJJ.
§60.12	Circumvention	Yes	
§60.13	Monitoring requirements	No	
§60.14	Modification	Yes	
§60.15	Reconstruction	Yes	
§60.16	Priority list	Yes	
§60.17	Incorporations by reference	Yes	
§60.18	General control device requirements	No	
§60.19	General notification and reporting requirements	Yes	

Table 4 to Subpart JJJJ of Part 60—Applicability of Mobile Source Provisions for Manufacturers Participating in the Voluntary Certification Program and Certifying Stationary SI ICE to Emission Standards in Table 1 of Subpart JJJJ

[As stated in §60.4247, you must comply with the following applicable mobile source provisions if you are a manufacturer participating in the voluntary certification program and certifying stationary SI ICE to emission standards in Table 1 of subpart JJJJ]

Mobile source provisions citation	Subject of citation	Applies to subpart	Explanation
1048 subpart A	Overview and Applicability	Yes	
1048 subpart B	Emission Standards and Related Requirements	Yes	Except for the specific sections below.
1048.101	Exhaust Emission Standards	No	
1048.105	Evaporative Emission Standards	No	
1048.110	Diagnosing Malfunctions	No	

Mobile source provisions citation	Subject of citation	Applies to subpart	Explanation
1048.140	Certifying Blue Sky Series Engines	No	
1048.145	Interim Provisions	No	
1048 subpart C	Certifying Engine Families	Yes	Except for the specific sections below.
1048.205(b)	AECD reporting	Yes	
1048.205(c)	OBD Requirements	No	
1048.205(n)	Deterioration Factors	Yes	Except as indicated in 60.4247(c).
1048.205(p)(1)	Deterioration Factor Discussion	Yes	
1048.205(p)(2)	Liquid Fuels as they require	No	
1048.240(b)(c)(d)	Deterioration Factors	Yes	
1048 subpart D	Testing Production-Line Engines	Yes	
1048 subpart E	Testing In-Use Engines	No	
1048 subpart F	Test Procedures	Yes	
1065.5(a)(4)	Raw sampling (refers reader back to the specific emissions regulation for guidance)	Yes	
1048 subpart G	Compliance Provisions	Yes	
1048 subpart H	Reserved		
1048 subpart I	Definitions and Other Reference Information	Yes	
1048 appendix I and II	Yes		
1065 (all subparts)	Engine Testing Procedures	Yes	Except for the specific section below.
1065.715	Test Fuel Specifications for Natural Gas	No	
1068 (all subparts)	General Compliance Provisions for Nonroad Programs	Yes	Except for the specific sections below.
1068.245	Hardship Provisions for Unusual Circumstances	No	
1068.250	Hardship Provisions for Small-Volume Manufacturers	No	
1068.255	Hardship Provisions for Equipment Manufacturers and Secondary Engine Manufacturers	No	

**Indiana Department of Environmental Management
Office of Air Quality**

**Technical Support Document (TSD) for a
Significant Source Modification and Part 70 Operating Permit Renewal**

Source Background and Description
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Source Name:	Newton County Landfill
Source Location:	2266 East 500 South Road, Brook, Indiana 47922
County:	Newton County, Jackson Township
SIC Code:	4953 (Refuse Systems)
Significant Source Modification No.:	111-35382-00017
Permit Renewal No.:	T111-35606-00017
Permit Reviewer:	David Matousek

The Office of Air Quality has reviewed the following applications submitted by Newton County Landfill relating to the modification and operation of a stationary municipal solid waste landfill:

- (1) On October 22, 2014, Newton County Landfill submitted an application (111-35062-00017) to IDEM, OAQ requesting a source modification to obtain authorization to construct and operate a 5,500 SCFM enclosed flare. The proposed flare is identified as emission unit #4 and was constructed and operated prior to receiving the required permits from IDEM, OAQ.
- (2) On January 21, 2015, Newton County Landfill submitted an application (111-35382-00017) to IDEM, OAQ requesting a source modification to obtain authorization to increase the permitted capacity of the landfill to a maximum of 102,030,469 Mg. The permitted volume of the landfill is 124,965,933 bank cubic yards and is not increasing. The increase in capacity by mass constitutes a source modification under 326 IAC 2-7-10.5 but does not constitute a modification under 40 CFR 60, Subpart WWW. An operational change such as an increase in the compaction of a landfill does not constitute a modification under 40 CFR 60, Subpart WWW.
- (3) On January 21, 2015, Newton County Landfill submitted an application (111-35375-00017) to IDEM, OAQ requesting an administrative amendment to obtain the authorization to add a control device to the 158,000 gallon leachate storage tank. The Permittee indicated the vent from the leachate storage tank will be connected to the landfill's active gas collection and combustion system or to a carbon canister.
- (4) On February 5, 2015, Newton County Landfill submitted an application (111-35428-00017) to IDEM, OAQ requesting an administrative amendment to include a higher operating value for temperature for landfill gas well #56R. Newton County Landfill requested an increase in the approved operating temperature of landfill gas well #56 from 190 °F to 210 °F.
- (5) On March 18, 2015, Newton County Landfill submitted an application (111-35606-00017) to IDEM, OAQ requesting to renew its operating permit. Newton County Landfill was issued its second Part 70 Operating Permit Renewal (T111-29224-00017) on March 11, 2011.
- (6) On October 5, 2015, Newton County Landfill submitted an application to IDEM, OAQ requesting an administrative amendment to obtain a higher operating value for temperature in Wells #22R and #24R and higher oxygen concentrations for the leachate cleanout risers CO01, CO02, CO03, CO04, CO05, CO06, horizontal trenches HT01, HT03, HT3A, HT3C, HT4A, HT4B, and leachate sumps LS01, LS02,

LS03, LS04, LS05, LS06, LS07 and LS08, and temporary liquid sump TLS2. This application was treated as additional information for the renewal.

- (7) On December 9, 2015, Newton County Landfill submitted an application to IDEM, OAQ requesting an administrative amendment to obtain a higher operating value for oxygen concentration for three (3) liquid sumps, identified as TLS7, TLS8, and PCS15. In addition, Newton County Landfill requested a higher operating value for temperature for two (2) landfill gas wells, identified as #26R and #79.
- (8) On December 28, 2015, Newton County Landfill submitted an application to IDEM, OAQ requesting an administrative amendment to obtain a higher operating value for temperature for landfill gas collection wells #143B, #168, and #178.
- (9) On January 21, 2016, Newton County Landfill submitted an application to IDEM, OAQ requesting an administrative amendment to install a 250,000 gallons per day leachate treatment process consisting of:
 - (a) One (1) 3,500 gallon influent reaction tank, identified as LTP-T1
 - (b) One (1) 3,500 gallon influent mix tank, identified as LTP-T2
 - (c) One (1) 1,450 gallon reaction effluent tank, identified as LTP-T3
 - (d) One (1) 8,000 gallon ultrafilter process tank, identified as LTP-T4
 - (e) Ultrafilter System, consisting of two filter banks, identified as UF-1000 and UF-1100, respectively
 - (f) One (1) 1,450 gallon permeate lift tank, identified as LTP-T5
 - (g) One (1) 9,000 gallon sludge storage tank, identified as LTP-T6
 - (h) One (1) centrifuge
 - (i) One (1) 760,454 gallon effluent storage tank, identified as EST-1
 - (j) One (1) caustic soda feed system for pH adjustment
 - (k) One (1) polymer feed system for dewatering
 - (l) One (1) chemical feed system for pH adjustment
 - (m) One (1) chemical feed system for filter cleaning
 - (n) One (1) 500 gallon centrate storage tank, identified as T-8810
 - (o) Two (2) 0.175 MMBtu/hr and one (1) 0.125 MMBtu/hr liquid propane-fired tube heaters for comfort heating in the leachate treatment process (LTP) building.
 - (p) One (1) 1,000 gallon LPG storage tank
 - (q) One (1) propane-fired emergency generator, with a maximum capacity of 70 kW (118 HP) output, 1.099 MMBtu/hr heat input, 6,670 cc total displacement (0.68 liters per cylinder), constructed in 2016. [40 CFR 63, Subpart ZZZZ]
[40 CFR 60, Subpart JJJJ]
- (10) On January 26, 2016, Newton County Landfill submitted an application to IDEM, OAQ requesting an administrative amendment to obtain a higher operating value for temperature for landfill collection wells #128A, #130A, and #179 and to obtain a higher operating value for oxygen for leachate cleanout riser CO7A.
- (11) On March 7, 2016, Newton County Landfill submitted an application to IDEM, OAQ requesting an administrative amendment to obtain a higher operating value for temperature for collection well #156, and to obtain a higher operating value for oxygen for liquid sumps TLS9, TLS10, and TLS11.
- (12) On April 1, 2016, Newton County Landfill submitted an application to IDEM, OAQ requesting an administrative amendment to obtain a higher operating value for temperature for collection wells #96A and #181 and to obtain a higher operating value for oxygen for temporary liquid sump TLS12.

- (13) On April 29, 2016, Newton County Landfill submitted an application to IDEM, OAQ requesting an administrative amendment to obtain a higher operating value for temperature for collection well 129B and to obtain a higher operating value for oxygen for temporary liquid sump TLS13.
- (14) On May 16, 2016, Newton County Landfill submitted an application to IDEM, OAQ requesting an administrative amendment to revise the material description in original Condition D.3.1 (PSD Minor Limit) to indicate ash, including coal fly ash and bottom ash, may be processed in the existing pug mill. This descriptive change also requires revisions to original condition D.3.7 (Record Keeping) and the reporting form shown on page 37 of 39 of the existing permit for the pug mill.
- (15) On May 26, 2016, Newton County Landfill submitted additional information for the renewal to IDEM, OAQ requesting a higher operating value for temperature for landfill gas wells 170, 186, and 155A. In addition, Newton County Landfill requested the permanent decommissioning of temporary leachate sumps LS08 and LS13.
- (16) On June 30, 2013, Newton County Landfill submitted an application to IDEM, OAQ requesting an administrative amendment to request a higher operating value for temperature for wells #83, #123, #160, #169, #173, #174, #70A, #103C, #104C, #105C, #107B, #50R, and #HR9 and the permanent abandonment of temporary leachate sumps LS06, LS07, and LS12.

IDEM, OAQ is combining the actions requested by the Permittee in the applications listed above into significant source modification 111-35382-00017 and the third Part 70 Operating Permit Renewal T111-35606-00017.

Source Definition

INIG, Inc. (INIG), source ID 111-00022, will produce egg cartons and will be located fifty (50) feet from the Newton County Landfill (Newton), source ID 111-00017. INIG will use landfill gas from Newton to power its dryers. OAQ has examined whether the INIG plant is part of the same major source as Newton. 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(s); and,
- (3) the sources must be located on contiguous or adjacent properties.

The two sources do not have a common owner, so common ownership does not exist.

IDEM's Nonrule Policy Document Air-005 sets out two independent tests to determine if common control exists. The first test is to determine whether one source performs an auxiliary activity which directly serves the purpose of a primary activity and whether the owner or operator of the primary activity has a major role in the day-to-day operations of the auxiliary activity. An auxiliary activity directly serves the purpose of a primary activity by supplying a necessary raw material to the primary activity or performing an integral part of the production process for the primary activity.

Newton produces landfill gas through a collection system throughout the landfill. The gas can be burned off by flaring. INIG is locating in an industrial park next to the landfill. The industrial park has a direct landfill gas pipeline connection to Newton. INIG will use the landfill gas to power its drying equipment as part of its production process. The fuel is a necessary raw material for INIG's process. However, supplying the fuel does not give Newton a major role in the day-to-day

operations of INIG. Newton will make fuel available to all the businesses located in the industrial park. Newton will function as a utility that provides service to many customers. This role does not give Newton a major role in INIG's day-to-day operations. The first control test is not met. The second common control test in the nonrule policy is the but/for test. This test focuses on whether the auxiliary activity would exist absent the needs of the primary activity. If all or a majority of the output of the auxiliary activity is consumed by the primary activity the but/for test is satisfied. Newton will continue to function as a landfill, so INIG will not be consuming a majority of Newton's output. None of INIG's products will go to Newton. If Newton were to stop supplying landfill gas to the industrial park, INIG could physically convert its dryers to run on other fuel. If the industrial park stops using landfill gas Newton could send all the gas to its flare. Therefore, the second common control test is not met. Newton and INIG are not under the common control. The SIC Code Manual of 1987 sets out how to determine the proper SIC Code for each type of business. More information about SIC Codes is available at http://www.osha.gov/pls/imis/sic_manual.html on the internet. Newton has the two-digit SIC code 49 for the Major Group of Electric, Gas, and Sanitary Services. INIG has the two-digit SIC Code 26 for the Major Group of Paper and Allied Products.

A plant is considered a support facility if at least fifty percent of its output is dedicated to another plant. INIG will provide no output to Newton. Newton's total output of landfill gas is less than 50% of its total output as a working landfill. Neither source qualifies as a support facility. Since the sources have different two-digit SIC Codes and neither is a support facility, they do not meet the second part of the major source definition.

The last criterion of the definition is whether Newton and INIG are on contiguous or adjacent properties. The sources are located on properties that are separated only by a roadway. The property boundaries touch under the roadway. The properties are therefore contiguous. The third part of the definition is met.

Since Newton and INIG do not meet the first and second parts of the major source definition, OAQ finds that the two sources are not part of the same major source. INIG should be permitted separately from Newton. This determination appeared in the TSD for exemption 111-28419-00022.

County Attainment Status

The source is located in Newton County.

Pollutant	Designation
SO ₂	Better than national standards.
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. Unclassifiable or attainment effective April 5, 2005, for PM _{2.5} .	

- (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. Newton 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}
Newton County has been classified as attainment for PM_{2.5}. Therefore, direct PM_{2.5}, SO₂, and NO_x emissions were reviewed pursuant to the requirements for Prevention of Significant Deterioration (PSD), 326 IAC 2-2.
- (c) Other Criteria Pollutants
Newton County has been classified as attainment or unclassifiable in Indiana for SO₂, CO, PM₁₀, NO₂ 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 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.

Description of Proposed Modification

The Indiana Department of Environmental Management (IDEM) has reviewed several applications from Newton County Landfill, located at 2266 East 500 South Road, Brook, Indiana 47922. IDEM, OAQ received permit applications from the landfill on October 22, 2014, January 21, 2015, February 5, 2015, March 18, 2015, October 5, 2015, December 9, 2015, December 28, 2015, January 21, 2016, January 26, 2016, March 7, 2016, April 1, 2016, April 29, 2016, May 16, 2016, and May 26, 2016. If approved by IDEM's Office of Air Quality (OAQ), these proposed modifications would allow Newton County Landfill to make certain changes at its existing source. In addition to the renewal of the Part 70 Operating Permit, Newton County Landfill applied to construct and operate a 5,500 SCFM landfill gas fired flare, to increase the permitted mass capacity but not volume capacity of the municipal solid waste landfill in accordance with 326 IAC 2-7-10.5 to 102,030,469 Mg, to revise emission unit descriptive information, to add an odor control device to an existing leachate storage tank, to add a 250,000 gallon a day leachate treatment system, to request a higher operating value for temperature and oxygen for several active landfill gas collection system components along with the permanent abandonment of others. The modified and unpermitted emission units are described below:

Modified Emission Units

- (a) One (1) municipal solid waste landfill, identified as emissions unit #1, constructed in 1995 and modified in 2006 in accordance with 40 CFR 60, Subpart WWW, and approved for modification in 2006 and 2016 in accordance with 326 IAC 2-7-10.5, but not 40 CFR 60, Subpart WWW, with a maximum design capacity of 102,030,469 megagrams (Mg) and 124,965,933 bank cubic yards. The landfill includes a gas treatment system installed in 2009. Landfill gas is sent offsite for sale or use and/or is combusted in one (1) or more of the enclosed combustors (emission units #3 and #4 and the leachate evaporator). [40 CFR 60, Subpart WWW] [40 CFR 63, Subpart AAAA] [40 CFR 61, Subpart M]

New Emission Units

- (a) One (1) leachate treatment process, approved for construction in 2016, with a maximum throughput of 250,000 gallons of leachate per day, odor and VOC/HAP emissions are controlled by a carbon canister or landfill gas collection system enclosed combustor, including the following process units:
- (1) One (1) 3,500 gallon influent reaction tank, identified as LTP-T1
 - (2) One (1) 3,500 gallon influent mix tank, identified as LTP-T2
 - (3) One (1) 1,450 gallon reaction effluent tank, identified as LTP-T3
 - (4) One (1) 8,000 gallon ultrafilter process tank, identified as LTP-T4
 - (5) Ultrafilter System, consisting of two filter banks, identified as UF-1000 and UF-1100, respectively
 - (6) One (1) 1,450 gallon permeate lift tank, identified as LTP-T5
 - (7) One (1) 9,000 gallon sludge storage tank, identified as LTP-T6
 - (8) One (1) centrifuge
 - (9) One (1) 760,454 gallon effluent storage tank, identified as EST-1
 - (10) One (1) caustic soda feed system for pH adjustment
 - (11) One (1) polymer feed system for dewatering
 - (12) One (1) chemical feed system for pH adjustment
 - (13) One (1) chemical feed system for filter cleaning
 - (14) One (1) 500 gallon centrate storage tank, identified as T-8810

Insignificant Activities

- (a) Two (2) 0.175 MMBtu/hr and one (1) 0.125 MMBtu/hr liquid propane-fired tube heaters for comfort heating in the leachate treatment process (LTP) building, firing fuel containing less than 0.5% sulfur by weight.
- (b) One (1) propane-fired emergency generator, with a maximum capacity of 70 kW (118 HP) output, 1.099 MMBtu/hr heat input, 6,670 cc total displacement (0.68 liters per cylinder), constructed in 2016. [40 CFR 63, Subpart ZZZZ]
[40 CFR 60, Subpart JJJJ]

Trivial Activities

- (a) One (1) 1,000 gallon LPG storage tank

Unpermitted Emission Units

- (a) One (1) enclosed combustor for landfill gas combustion, identified as emission unit #4, constructed in 2012, with a maximum capacity of 5,500 SCFM.
[40 CFR 60, Subpart WWW] [40 CFR 63, Subpart AAAA]

Emission Units and Pollution Control Equipment Removed From the Source

- (a) The following VOC and HAP storage containers storing lubricating oils, hydraulic oils, machining oils and machining fluids:
- (1) Three (3) 275 gallon used oil AST
 - (2) One (1) 1,000 gallon gasoline AST
- (b) Whisperwatt Generator, 40 HP

Permitted Emission Units and Pollution Control Equipment – After Issuance

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

- (a) One (1) municipal solid waste landfill, identified as emissions unit #1, constructed in 1995 and modified in 2006 in accordance with 40 CFR 60, Subpart WWW, and approved for modification in 2006 and 2016 in accordance with 326 IAC 2-7-10.5, but not 40 CFR 60, Subpart WWW, with a maximum design capacity of 102,030,469 megagrams (Mg) and 124,965,933 bank cubic yards. The landfill includes a gas treatment system installed in 2009. Landfill gas is sent offsite for sale or use and/or is combusted in one (1) or more of the enclosed combustors (emission units #3 and #4 and the leachate evaporator). [40 CFR 60, Subpart WWW] [40 CFR 63, Subpart AAAA] [40 CFR 61, Subpart M]
- (b) One (1) enclosed combustor for landfill gas combustion, identified as emissions unit #3, constructed in 2006, with a maximum capacity of 6,000 SCFM. [40 CFR 60, Subpart WWW] [40 CFR 63, Subpart AAAA]
- (c) One (1) enclosed combustor for landfill gas combustion, identified as emission unit #4, constructed in 2012, with a maximum capacity of 5,500 SCFM. [40 CFR 60, Subpart WWW] [40 CFR 63, Subpart AAAA]
- (d) One (1) landfill gas-fired leachate evaporator, approved in 2015 for construction, identified as LE1, with a maximum capacity of 30,000 gallons of leachate per day with a 13 MMBtu/hr burner, with PM emissions of less than 0.551 pound per hour, emissions are uncontrolled, the unit exhausts to stack S-LE1. [40 CFR 60, Subpart WWW] [40 CFR 63, Subpart AAAA]
- (e) One (1) Pug Mill operation, approved in 2013 for construction, identified as Pug Mill, with a maximum capacity of 40.5 tons per hour of ash, including two 425 ton ash storage silos each with a silo top dust collector, both units identified as DC1, and one pug mill with emissions controlled by a direct mount dust collector, identified as DC2.
- (f) One (1) leachate treatment process, approved for construction in 2016, with a maximum throughput of 250,000 gallons of leachate per day, odor and VOC/HAP emissions are controlled by a carbon canister or landfill gas collection system enclosed combustor, including the following process units:
 - (1) One (1) 3,500 gallon influent reaction tank, identified as LTP-T1
 - (2) One (1) 3,500 gallon influent mix tank, identified as LTP-T2
 - (3) One (1) 1,450 gallon reaction effluent tank, identified as LTP-T3
 - (4) One (1) 8,000 gallon ultrafilter process tank, identified as LTP-T4
 - (5) Ultrafilter System, consisting of two filter banks, identified as UF-1000 and UF-1100, respectively
 - (6) One (1) 1,450 gallon permeate lift tank, identified as LTP-T5
 - (7) One (1) 9,000 gallon sludge storage tank, identified as LTP-T6
 - (8) One (1) centrifuge
 - (9) One (1) 760,454 gallon effluent storage tank, identified as EST-1
 - (10) One (1) caustic soda feed system for pH adjustment
 - (11) One (1) polymer feed system for dewatering
 - (12) One (1) chemical feed system for pH adjustment
 - (13) One (1) chemical feed system for filter cleaning
 - (14) One (1) 500 gallon centrate storage tank, identified as T-8810

Emission Units and Pollution Control Equipment Constructed and/or Operated without a Permit

The source also consists of the following emission units that were constructed and are operating without a permit:

- (a) One (1) enclosed combustor for landfill gas combustion, identified as emission unit #4, constructed in 2012, with a maximum capacity of 5,500 SCFM. [40 CFR 60, Subpart WWW] [40 CFR 63, Subpart AAAA]

Insignificant Activities – After Issuance

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

- (a) Paved and unpaved roads and parking lots with public access. [326 IAC 6-4] [326 IAC 6-5]
- (b) One (1) 40 gallon parts washing machine with a quarterly throughput of 40 gallons, and an annual throughput of 160 gallons. [326 IAC 8-3-2] [326 IAC 8-3-8]
- (c) One (1) propane-fired emergency generator, with a maximum capacity of 70 kW (118 HP) output, 1.099 MMBtu/hr heat input, 6,670 cc total displacement (0.68 liters per cylinder), constructed in 2016. [40 CFR 63, Subpart ZZZZ] [40 CFR 60, Subpart JJJJ]
- (d) Three (3) propane-fired emergency generators, each with a maximum capacity of 17 kW (22.80 HP) output, 0.237 MMBtu/hr heat input, 992 cc total displacement (0.5 liters per cylinder), constructed in 2012. [40 CFR 63, Subpart ZZZZ]

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

- (a) Two (2) 500,000 gallon leachate storage tanks, identified as Tank 1 and Tank 2, approved in 2014 for construction, with a maximum design throughput capacity of 45.97 GPM, each, odor and VOC/HAP emissions are controlled by a carbon canister or landfill gas collection system enclosed combustor.
- (b) One (1) 319,000 gallon leachate storage tank, identified as Tank 3, constructed in 2012, with a maximum design throughput capacity of 45.97 GPM, odor and VOC/HAP emissions are controlled by a carbon canister or landfill gas collection system enclosed combustor.
- (c) Twelve (12) liquefied petroleum gas-fired combustion sources with a combined heat input equal to or less than six million (6,000,000) Btu per hour.
- (d) Two (2) 0.175 MMBtu/hr and one (1) 0.125 MMBtu/hr liquid propane-fired tube heaters for comfort heating in the leachate treatment process (LTP) building, firing fuel containing less than 0.5% sulfur by weight.
- (e) Activities not previously identified, with HAP emissions less than five (5) pounds per day and one (1) ton per year of a single HAP and less than twelve and five-tenths (12.5) pounds per day and two and five-tenths (2.5) ton per year of any combination of HAPs, and with VOC emissions less than three (3) pounds per hour or fifteen (15) pounds per day, including:

- (1) One (1) 57,000 gallon leachate storage tank.
 - (2) One (1) 158,000 gallon (598 cubic meters) leachate storage tanks, constructed in 1999, odor and VOC/HAP emissions are controlled by a carbon canister or landfill gas collection system enclosed combustor.
 - (3) One (1) solidification process.
 - (4) One (1) 2,500 gallons oil and water separator located in the CPL/Transmission Building.
- (f) A petroleum fuel (other than gasoline) dispensing facility, having a storage capacity of less than or equal to 10,500 gallons and dispensing less than or equal to 230,000 gallons per month:
- (1) One (1) above ground diesel fuel storage tank with a 1,100 gallon capacity, identified as Tank A-13.
- (g) The following VOC and HAP storage containers storing lubricating oils, hydraulic oils, machining oils and machining fluids:
- (1) One (1) used oil AST having a capacity of 500 gallons located in the new shop and identified as Tank A-7.
 - (2) One (1) 300 gallon transmission fluid AST, located in the new shop and identified as Tank A-24.
 - (3) Two (2) 55 gallon transmission fluid AST.
 - (4) One (1) 55 gallon transmission fluid drum, located in the new shop.
 - (5) One (1) 500 gallon spent oil AST, located in the transmission building, and identified as Tank A-4.
 - (6) One (1) 600 gallon compressor oil AST, located in the transmission building, and identified as Tank A-5.
 - (7) Four (4) 500 gallon oil AST, located in the transmission building, and identified as Tanks A-8 through A11.
 - (8) One (1) 12,000 gallon off-road diesel AST, identified as Tank A-5.
 - (9) One (1) 55 gallon automotive oil AST
 - (10) Three (3) 55 gallon gear oil AST
 - (11) Two (2) 55 gallon coolant AST
 - (12) One (1) 55 gallon hydraulic fluid AST
- (h) Production related activities, including the following:
- (1) Application of:
 - (i) oils;
 - (ii) greases;
 - (iii) lubricants; and
 - (iv) nonvolatile material as temporary protective coatings.
 - (2) Welding equipment related to manufacturing activities not resulting in the emission of HAPs.
- (i) Repair activities, including the replacement or repair of electrostatic precipitators, bags in baghouses, and filters in other air filtration equipment.
- (j) Emissions from a laboratory as defined in 326 IAC 2-7-1(21)(D), and identified as Unit 1.
- (k) One (1) 1,100 gallon gasoline AST, identified as Tank A-14, with a throughput of less than 10,000 gallons per month and 26,400 gallons per year.

- (l) One (1) diesel-fired tub grinder, with a throughput of 30,000 tons per year (3.42 ton/hr) of wood waste, with a 950 HP non-road engine, and one discharge conveyor, with PM emissions of less than 0.551 lb/hr.

Trivial Activities – After Issuance
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The source contains the following trivial activities, as defined in 326 IAC 2-7-1(42):

- (a) Any activity or emission unit:
 - (1) not regulated by a NESHAP, with potential uncontrolled emissions that are equal to or less than one (1) pound per day on an emission unit basis for any single HAP or combination of HAPs; and
 - (2) for which the potential uncontrolled emissions meet the exemption levels specified in the following:
 - (i) For VOC, potential uncontrolled emissions that are equal to or less than one (1) pound per day.
 - (ii) For PM10 or direct PM2.5, potential uncontrolled emissions that are equal to or less than one (1) pound per day.
- (b) Water related activities, including the following:
 - (1) Production of hot water for on-site personal use not related to any industrial or production process, consisting of two units.
 - (2) Pressure washing of equipment.
- (c) Combustion activities, including portable electrical generators that can be moved by hand from one (1) location to another. As used in this item, "moved by hand" means that it can be moved without the assistance of any motorized or nonmotorized vehicle, conveyance, or device, consisting of three units.
- (d) Activities related to ventilation, venting equipment, and refrigeration, including the following:
 - (1) Vents from continuous emissions monitors and other analyzers, one unit.
 - (2) Air vents from multiple air compressors.
- (e) Activities related to routine fabrication, maintenance, and repair of buildings, structures, equipment, or vehicles at the source where air emissions from those activities would not be associated with any commercial production process, including the following:
 - (1) Activities associated with the repair and maintenance of paved and unpaved roads, including paving or sealing, or both, of parking lots and roadways.
 - (2) Brazing, soldering, or welding operations and associated equipment.
 - (3) Lubrication, including the following:
 - (i) Hand-held spray can lubrication.
 - (ii) Dipping metal parts into lubricating oil.

- (iii) Manual or automated addition of cutting oil in machining operations.
- (f) Housekeeping and janitorial activities and supplies, including restrooms and associated cleanup operations and supplies.
- (g) Office related activities, including the following:
 - (1) Office supplies and equipment.
 - (2) Photocopying equipment and associated supplies.
- (h) Storage equipment and activities, including pressurized liquid natural gas storage tanks and associated piping, consisting of nine tanks.
- (i) Sampling and testing equipment and activities, including the following:
 - (1) Ground water monitoring wells and associated sample collection equipment.
 - (2) Sampling activities.
- (j) Use of consumer products and equipment where the product or equipment is:
 - (1) used at a source in the same manner as normal consumer use; and
 - (2) not associated with any production process.
- (k) Activities generating limited amounts of fugitive dust, including the following:
 - (1) Fugitive emissions related to movement of passenger vehicles, provided the emissions are not counted for applicability purposes under subdivision (22)(B), and any required fugitive dust control plan or its equivalent is submitted.
 - (2) Soil boring.
- (l) Activities associated with production, including air compressors and pneumatically operated equipment, including hand tools.
- (m) Miscellaneous equipment, but not emissions associated with the process for which the equipment is used, and activities, including the following:
 - (1) Condensate drains for natural gas and landfill gas.
 - (2) Soil borrow pits.

Non-Road Engines – After Issuance
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The source contains the following non-road engines, as defined in 40 CFR 1068.30:

- (a) Two (2) Water Pumps
- (b) Three (3) dual fuel-fired (gasoline/diesel) portable generators
 - (1) Whisperwatt Trailer Mounted Generator, 67.1 HP
 - (2) Rock River Portable Generator, 8 HP

- (3) Wacker G50 Trailer Mounted Generator, 40 HP
- (c) Tub Grinder Engine, 950 HP

Existing Approvals

Since the issuance of the Part 70 Operating Permit Renewal (T111-29224-00017) on March 11, 2011, the source has constructed or has been operating under the following additional approvals:

- (a) Administrative Amendment No. 111-30505-00017, issued on May 12, 2011
- (b) Administrative Amendment No. 111-30668-00017, issued on June 30, 2011
- (c) Administrative Amendment No. 111-30753-00017, issued on August 4, 2011
- (d) Administrative Amendment No. 111-30874-00017, issued on September 8, 2011
- (e) Administrative Amendment No. 111-31062-00017, issued on October 31, 2011
- (f) Administrative Amendment No. 111-31177-00017, issued on November 30, 2011
- (g) Administrative Amendment No. 111-31624-00017, issued on March 22, 2012
- (h) Administrative Amendment No. 111-31831-00017, issued on May 30, 2012
- (i) Administrative Amendment No. 111-32152-00017, issued on August 1, 2012
- (j) Administrative Amendment No. 111-32489-00017, issued on December 18, 2012
- (k) Administrative Amendment No. 111-32811-00017, issued on February 12, 2013
- (l) Administrative Amendment No. 111-33043-00017, issued on April 30, 2013
- (m) Interim Significant Source Modification No. 111-33012I-00017, issued on May 22, 2013
- (n) Significant Source Modification No. 111-33012-00017, issued on June 28, 2015
- (o) Significant Permit Modification No. 111-33065-00017, issued on July 16, 2013
- (p) Administrative Amendment No. 111-33483-00017, issued on September 5, 2013
- (q) Administrative Amendment No. 111-33676-00017, issued on October 23, 2013
- (r) Administrative Amendment No. 111-34065-00017, issued on January 28, 2014
- (s) Administrative Amendment No. 111-34252-00017, issued on April 1, 2014
- (t) Administrative Amendment No. 111-34627-00017, issued on June 30, 2014
- (u) Administrative Amendment No. 111-34846-00017, issued on September 17, 2014
- (v) Administrative Amendment No. 111-35038-00017, issued on December 8, 2014
- (w) Administrative Amendment No. 111-35223-00017, issued on January 15, 2015
- (x) Administrative Amendment No. 111-35377-00017, issued on May 27, 2015
- (y) Administrative Amendment No. 111-35897-00017, issued on June 11, 2015; and
- (z) Administrative Amendment No. 111-36205-00017, issued on September 1, 2015.

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

IDEM is aware that equipment has been constructed and operated prior to receipt of the proper permit. The subject equipment is listed in this Technical Support Document under the condition entitled "Emission Units and Pollution Control Equipment Constructed and/or Operated without a Permit". IDEM is reviewing this matter and will take appropriate action. This proposed permit is intended to satisfy the requirements of the construction permit rules.

Emission Calculations

See Appendix A of this document for detailed emission calculations.

Unrestricted Potential Emissions - After Issuance

This table reflects the unrestricted potential emissions of the source.

Unrestricted Potential to Emit	
Pollutant	tons/year
PM	685.57
PM10	250.82
Direct PM2.5	250.81
SO2	156.81
VOC	298.66
CO	263.00
NOx	101.26
Single HAP - Toluene	45.64
Total HAP	141.26

Hazardous Air Pollutants	
HAP	tons/year
Toluene	45.64
Xylene	16.53
Methylene Chloride	15.29
Hydrochloric Acid	12.49
Perchloroethylene	7.79
Hexane	7.14
Ethyl Benzene	6.21
Vinyl Chloride	5.77
Trichloroethylene	4.66
Acrylonitrile	4.22
1,1-Dichloroethane	2.93
Methyl Isobutyl Ketone	2.65
1,1,2,2-Tetrachloroethane	2.35
Benzene	1.95
Chloroethane	1.02
1,1,1-Trichloroethane	0.81
Other Minor HAP	3.81
Total HAP	141.26

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 PM₁₀, Direct PM_{2.5}, SO₂, VOC, CO, and NO_x are 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/or 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.

Permit Level Determination – Part 70 Modification to an Existing Source

Pursuant to 326 IAC 2-1.1-1(16), Potential to Emit is defined as “the maximum capacity of a stationary source or emission unit to emit any air pollutant under its physical and operational design. Any physical or operational limitation on the capacity of a source to emit an air pollutant, including air pollution control equipment and restrictions on hours of operation or type or amount of material combusted, stored, or processed shall be treated as part of its design if the limitation is enforceable by the U. S. EPA, IDEM, or the appropriate local air pollution control agency.” The following table is used to determine the appropriate permit level under 326 IAC 2-7-10.5. This table reflects the PTE before controls. Control equipment is not considered federally enforceable until it has been required in a federally enforceable permit. If the control equipment has been determined to be integral, the table reflects the PTE after consideration of the integral control device.

326 IAC 2-7-10.5 Analysis - Uncontrolled PTE (TPY) for Project									
Emission Unit	PM	PM ₁₀	Direct PM _{2.5}	SO ₂	VOC	CO	NO _x	Total HAP	Toluene
Landfill After Expansion	0.00	0.00	0.00	0.00	280.08	39.74	0.00	101.39	36.43
Landfill Before Expansion	0.00	0.00	0.00	0.00	135.69	19.25	0.00	49.11	17.64
Increase in PTE due to Landfill Expansion	0.00	0.00	0.00	0.00	144.39	20.49	0.00	52.28	18.79
Landfill Fugitive HAP After Expansion	0.00	0.00	0.00	0.00	0.00	0.00	0.00	25.35	9.11
Landfill Fugitive HAP Prior Expansion	0.00	0.00	0.00	0.00	0.00	0.00	0.00	12.28	4.41
Increase in Fugitive HAP PTE due to Landfill Expansion	0.00	0.00	0.00	0.00	0.00	0.00	0.00	13.07	4.70
Enclosed Combustor #4	11.88	11.88	11.88	70.90	3.81	65.70	44.68	5.65	0.00
Leachate Treatment System	0.00	0.00	0.00	0.00	5.71	0.00	0.00	0.86	0.00
Propane Generator	0.02	0.02	0.02	1.06E-03	0.25	0.39	0.42	0.00	0.00
Propane Heater*	neglig.	neglig.	neglig.	neglig.	neglig.	neglig.	neglig.	neglig.	neglig.
Total Emission Increase for Project	11.90	11.90	11.90	70.90	154.16	86.58	45.10	71.86	23.49

* neglig = negligible

Appendix A of this TSD reflects the unrestricted potential emissions of the modification.

This source modification is subject to 326 IAC 2-7-10.5(g)(4)(B), (C), and (D) because the modification has a potential to emit greater than twenty-five (25) tons per year of SO₂, VOC, and NO_x. This source modification is subject to 326 IAC 2-7-10.5(g)(6) because the modification has a potential to emit greater than ten (10) tons of a single HAP per year and greater than twenty-five (25) tons per year of a combination of HAP per year.

Additionally, the modification will be incorporated into the Part 70 Operating Permit as part of the sources Part 70 Operating Permit Renewal pursuant to 326 IAC 2-7-8.

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.

Limited / Controlled Potential to Emit - After 2015 Expansion (TPY)									
Emission Unit	PM	PM ₁₀	Direct PM _{2.5}	SO ₂	VOC	CO	NO _x	Total HAP	HCL
Municipal Solid Waste Landfill	0.00	0.00	0.00	0.00	5.60	235.89	0.00	2.03	0.00
Enclosed Combustor #3	12.96	12.96	12.96	77.35	4.16		48.73	6.16	6.16
Enclosed Combustor #4	11.88	11.88	11.88	70.90	3.81		44.68	5.65	5.65
Landfill Fugitive HAP	0.00	0.00	0.00	0.00	0.00	0.00	0.00	25.35	0.00
Pug Mill	55.65	18.90	18.90	0.00	0.00	0.00	0.00	0.00	0.00
Leachate Evaporator (Evaporation) - LE1	0.00	0.00	0.00	0.00	2.87	11.43	0.00	0.69	0.00
Leachate Evaporator (Combustion) - LE1	0.00	0.00	0.00	8.53	0.18		3.42	0.68	0.68
Leachate Evaporator (LFG Residuals) - LE1	0.00	0.00	0.00	0.00	0.00		0.00	0.09	0.00
Leachate Evaporator (Particulate) - LE1	2.07	2.07	2.07	0.00	0.00		0.00	0.00	0.00
Tub Grinder	0.32	0.17	0.17	0.00	0.00	0.00	0.00	0.00	0.00
Leachate Treatment System	0.00	0.00	0.00	0.00	5.71	0.00	0.00	0.86	0.00

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Limited / Controlled Potential to Emit - After 2015 Expansion (TPY)									
Emission Unit	PM	PM ₁₀	Direct PM _{2.5}	SO ₂	VOC	CO	NOx	Total HAP	HCL
Insignificant Activities									
Parts Washer	0.00	0.00	0.00	0.00	0.51	0.00	0.00	0.02	0.00
Gasoline AST - Tank A-14	0.00	0.00	0.00	0.00	0.32	0.00	0.00	0.02	0.00
Emergency Generators	0.03	0.03	0.03	1.75E-03	0.42	0.65	0.70	0.00	0.00
Leachate Storage Tank - Tank 1	0.00	0.00	0.00	0.00	8.47E-04	0.00	0.00	6.74E-04	0.00
Leachate Storage Tank - Tank 2	0.00	0.00	0.00	0.00	8.47E-04	0.00	0.00	6.74E-04	0.00
Leachate Storage Tank - Tank 3	0.00	0.00	0.00	0.00	8.50E-06	0.00	0.00	1.20E-06	0.00
Oil/Water Separator	0.00	0.00	0.00	0.00	5.90E-03	0.00	0.00	5.74E-03	0.00
Misc. Propane Combustion	0.20	0.20	0.20	0.03	0.23	2.15	3.73	0.00	0.00
Total PTE after Issuance	83.10	46.21	46.20	156.81	23.80	249.90	101.26	41.55	12.49
PSD Major Source Thresholds	250	250	250	250	250	250	250	NA	NA

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 a major source of HAPs, as defined in 40 CFR 63.2, because HAP emissions are greater than ten (10) tons per year for a single HAP and greater than twenty-five (25) tons per year for a combination of HAPs. Therefore, this source is a major source under Section 112 of the Clean Air Act (CAA).

Prevention of Significant Deterioration (PSD) Minor Limit - PM, PM10, PM2.5 [326 IAC 2-2]

The uncontrolled potential to emit of PM, PM10, and direct PM2.5 from the source are greater than 250 tons per year. Therefore, the source has accepted the following limits to ensure PM, PM10, and direct PM2.5 emissions are less than 250 tons per year:

In order to render the requirements of 326 IAC 2-2 (Prevention of Significant Deterioration (PSD)) not applicable, the Permittee shall comply with the following:

- (a) The pug mill operation ash throughput shall not exceed 30,000 tons per 12 consecutive month period, with compliance determined at the end of each month.
- (b) The PM, PM10, and PM2.5 emissions from the pug mill operation shall not exceed the emission limits specified in the following table:

Emission Unit (Control Device)	Emission Limit (lb/ton)		
	PM	PM10	PM2.5
Combined Silo Vents, 2 units (Silo Top Dust Collectors, DC1)	3.14	1.10	1.10
Pug Mill Dust Collector, 1 unit (Dust Collector DC2)	0.57	0.16	0.16

Compliance with the above limits, combined with the potential to emit PM, PM10, and PM2.5 from all other emission units and insignificant activities, shall limit PM, PM10, and PM2.5 emissions from the entire source to less than 250 tons per twelve (12) consecutive month period, each, and shall render the requirements of 326 IAC 2-2 (PSD) not applicable to the entire source.

The uncontrolled potential to emit of VOC and CO from the source are greater than 250 tons per year. Since Newton County Landfill has requested to remain a minor PSD source, VOC and CO emissions from the municipal solid waste landfill must be controlled or limited to reduce VOC and CO emissions to below 250 TPY. 40 CFR 60, Subpart WWW requires non-methane organic carbon (NMOC) emissions from the municipal solid waste landfill be controlled to achieve a 98% by weight reduction in NMOC or to reduce the outlet concentration of NMOC to equal to or less than 20 ppmv, dry, as hexane corrected to 3% oxygen for each of the enclosed flares (emission unit #3 and emission unit #4). Approximately 39% of NMOC is VOC. VOC emissions for the municipal solid waste landfill before control is 280.08 tons per year. After control (at 98% control efficiency), VOC emissions from the municipal solid waste landfill are 5.60 tons per year with source-wide VOC emissions at 17.72 tons per year. CO emissions from the flares are not regulated by 40 CFR 60, Subpart WWW. Therefore, the source has accepted the following PSD minor limits for VOC and CO:

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

In order to render the requirements of 326 IAC 2-2 (Prevention of Significant Deterioration (PSD)) not applicable, the Permittee shall comply with the following:

- (a) Combined CO emissions from the municipal solid waste landfill enclosed combustors emission unit #3 and emission unit #4 (measured at the exhaust stacks of emission unit #3 and emission unit #4) shall not exceed 235.97 tons per twelve (12) consecutive month period with compliance determined at the end of each month.
- (b) CO emissions from the leachate evaporator, identified as LE1 shall not exceed 2.60 lb CO per hour, based on a three-hour average.

Compliance with the above limits, combined with the potential to emit CO from all other emission units and insignificant activities, shall limit CO emissions from the entire source to less than 250 tons per twelve (12) consecutive month period and shall render the requirements of 326 IAC 2-2 (PSD) not applicable to the entire source.

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

In order to render the requirements of 326 IAC 2-2 (Prevention of Significant Deterioration (PSD)) not applicable, the Permittee shall comply with the following:

- (a) VOC in the landfill gas collected from the municipal solid waste landfill shall be controlled at all times by one (1) or more of the enclosed flares (emission units #3 and #4) and/or by sending the landfill gas offsite for sale or for beneficial reuse onsite in the leachate evaporator.
- (b) For any landfill gas that this not sent offsite for sale or used onsite for beneficial reuse in the leachate evaporator, VOC (measured as NMOC) in the landfill gas collected from the municipal solid waste landfill shall be controlled by one (1) or more of the enclosed flares (emission units #3 and #4) and each enclosed flare shall have at an NMOC control efficiency of 98% by weight or more or shall reduce the outlet concentration of NMOC to equal to or less than 20 ppmv, dry, as hexane corrected to 3% oxygen.

Compliance with the above limits, combined with the potential to emit VOC from all other emission units and insignificant activities, shall limit VOC emissions from the entire source to less than 250 tons per twelve consecutive month period and shall render the requirements of 326 IAC 2-2 (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, except as exempt per 40 CFR 64.2(b)(1):
 - (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.

CAM Analysis							
Emission Unit / Pollutant	Control Device	Emission Limit	Uncontrolled PTE (TPY)	Controlled PTE (TPY)	Major Source Threshold (TPY)	CAM Apply	Large Unit
Landfill - VOC	YES	YES	280.08	5.60	100	YES	NO
Landfill - Single HAP	YES	NO	36.43	0.73	10	NO	NO
Landfill - Combined HAP	YES	NO	101.39	2.03	25	NO	NO
Landfill - CO	YES	NO	39.74	0.79	100	NO	NO
Enclosed Combustor #3 - CO	NO	YES	143.33	143.33	100	NO	NO

CAM Analysis							
Emission Unit / Pollutant	Control Device	Emission Limit	Uncontrolled PTE (TPY)	Controlled PTE (TPY)	Major Source Threshold (TPY)	CAM Apply	Large Unit
Enclosed Combustor #4 - CO	NO	YES	65.70	65.70	100	NO	NO
Pug Mill - PM	YES	YES	658.12	55.65	100	YES	NO
Pug Mill - PM10	YES	YES	223.51	18.90	100	YES	NO
Pug Mill - Direct PM2.5	YES	YES	223.51	18.90	100	YES	NO

In regards to VOC, the landfill has an uncontrolled PTE greater than the major source threshold of 100 TPY. The landfill uses a control device to comply with the VOC emission limitation and the post-control PTE of VOC is less than the major source threshold. Therefore, the landfill is subject to CAM for VOC and it is not a large unit. The municipal solid waste landfill is subject to the requirements of 40 CFR 60, Subpart WWW (Standards of Performance for Municipal Solid Waste Landfills), 40 CFR 61, Subpart M (National Emissions Standards for Hazardous Air Pollutants for Asbestos Requirements) and 40 CFR 63, Subpart AAAA (National Emissions Standards for Hazardous Air Pollutants for Municipal Solid Waste Landfills Requirements). 40 CFR 60, Subpart WWW requires non-methane organic carbon (NMOC) emissions from the municipal solid waste landfill be controlled to achieve a 98% by weight reduction in NMOC or to reduce the outlet concentration of NMOC to equal to or less than 20 ppmv, dry, as hexane corrected to 3% oxygen for each of the enclosed flares (emission unit #3 and emission unit #4). However, the VOC emission limitation for the municipal solid waste landfill is pursuant to 326 IAC 2-2 (Prevention of Significant Deterioration (PSD)) and not a post-November 15, 1990 NESHAP or NSPS.

Based on this evaluation, the requirements of 40 CFR Part 64, CAM are applicable to the Pug Mill for PM, PM10, and PM2.5 and the municipal solid waste landfill for VOC upon issuance of the Title V Renewal. A CAM plan will be incorporated into this Part 70 permit renewal.

NSPS:

- (b) **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. Municipal solid waste landfills may be publicly or privately owned. An MSW landfill may also accept other types of RCRA Subtitle D wastes such as commercial solid waste, nonhazardous sludge, conditionally exempt small quantity generator waste, and industrial solid waste. Subpart Cc applies to each MSW landfill for which construction, reconstruction, or modification was commenced before May 30, 1991. Newton County Landfill was constructed in 1995 and was modified in 2006. Therefore, the provisions of 40 CFR 60, Subpart Cc 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. The subpart defines petroleum as the crude oil removed from the earth and the oils derived from tar sands, shale, and coal. The subpart defines a

petroleum liquid as petroleum, condensate and any finished or intermediate products manufactured in a petroleum refinery and excludes No. 2 through No. 6 fuel oil, No. 2-GT through No. 4-GT gas turbine fuel oil, and diesel fuel oils No. 2-D and No. 4-D. This source does not contain any petroleum liquid storage vessels with 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 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. This source does not contain any petroleum liquids storage vessels with a 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 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 Subpart Kb. The subpart defines a VOL as any organic liquid which can emit volatile organic compounds (as defined in 40 CFR 51.100) into the atmosphere. The source contains the following volatile organic liquid storage tanks with a storage volume greater than or equal to 19,812.90 gallons (75 cubic meters):
- (1) One (1) 765,000 gallon effluent storage tank, identified as EST-1
 - (2) Two (2) 500,000 gallon leachate storage tanks, identified as Tank 1 and Tank 2, approved in 2014 for construction, with a maximum design throughput capacity of 45.97 GPM, each, odor and VOC/HAP emissions are controlled by a carbon canister or landfill gas collection system enclosed combustor.
 - (3) One (1) 319,000 gallon leachate storage tank, identified as Tank 3, constructed in 2012, with a maximum design throughput capacity of 45.97 GPM, odor and VOC/HAP emissions are controlled by a carbon canister or landfill gas collection system enclosed combustor.
 - (4) Activities not previously identified, with HAP emissions less than five (5) pounds per day and one (1) ton per year of a single HAP and less than twelve and five-tenths (12.5) pounds per day and two and five-tenths (2.5) ton per year of any combination of HAPs, and with VOC emissions less than three (3) pounds per hour or fifteen (15) pounds per day, including:
 - (i) One (1) 57,000 gallon leachate storage tank.
 - (ii) One (1) 158,000 gallon (598 cubic meters) leachate storage tanks, constructed in 1999, odor and VOC/HAP emissions are controlled by a carbon canister or landfill gas collection system enclosed combustor.

The leachate storage tanks identified as Tank 1, Tank 2, Tank 3, the 57,000 gallon tank, the 765,000 gallon effluent storage tank in the leachate treatment system, and the 158,000 gallon tank were constructed after July 23, 1984, but contain a volatile organic liquid with a maximum true vapor pressure of less than 3.5 kPa (0.5076 psia) and are exempt. 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 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 requirements 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 B of the permit. The affected facilities to which Subpart WWW applies includes each municipal solid waste landfill that commenced construction, reconstruction, or modification on or after May 30, 1991. This municipal solid waste landfill was constructed in 1995 and was modified as defined in 40 CFR 60, Subpart WWW in 2006. The emission units subject to this subpart include the following:
- (1) One (1) municipal solid waste landfill, identified as emissions unit #1, constructed in 1995 and modified in 2006 in accordance with 40 CFR 60, Subpart WWW, and approved for modification in 2006 and 2016 in accordance with 326 IAC 2-7-10.5, but not 40 CFR 60, Subpart WWW, with a maximum design capacity of 102,030,469 megagrams (Mg) and 124,965,933 bank cubic yards. The landfill includes a gas treatment system installed in 2009. Landfill gas is sent offsite for sale or use and/or is combusted in one (1) or more of the enclosed combustors (emission units #3 and #4 and the leachate evaporator).
[40 CFR 60, Subpart WWW] [40 CFR 63, Subpart AAAA] [40 CFR 61, Subpart M]
 - (2) One (1) enclosed combustor for landfill gas combustion, identified as emissions unit #3, constructed in 2006, with a maximum capacity of 6,000 SCFM.
[40 CFR 60, Subpart WWW] [40 CFR 63, Subpart AAAA]
 - (3) One (1) enclosed combustor for landfill gas combustion, identified as emission unit #4, constructed in 2012, with a maximum capacity of 5,500 SCFM.
[40 CFR 60, Subpart WWW] [40 CFR 63, Subpart AAAA]
 - (4) One (1) landfill gas-fired leachate evaporator, approved in 2015 for construction, identified as LE1, with a maximum capacity of 30,000 gallons of leachate per day with a 13 MMBtu/hr burner, with PM emissions of less than 0.551 pound per hour, emissions are uncontrolled, the unit exhausts to stack S-LE1.
[40 CFR 60, Subpart WWW] [40 CFR 63, Subpart AAAA]

Nonapplicable portions of the NSPS will not be included in the permit. The facilities listed above are 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), (ii)(A), (iii)(B), (iii)(C), (iv), (v), (c)(1), and (d)(2);

- (4) 40 CFR 60.753;
- (5) 40 CFR 60.754(a)(1), (a)(2)(ii), (a)(3)(i), and (a)(3)(ii);
- (6) 40 CFR 60.754(b), (c), (d), and (e);
- (7) 40 CFR 60.755(a)(1 through 5), (b), (c), (d), and (e);
- (8) 40 CFR 60.756(a), (b)(1), (b)(2)(i), and (f);
- (9) 40 CFR 60.757(a)(1)(i), (a)(2), (a)(3), (b)(3), (c), (d), (e), (f), and (g);
- (10) 40 CFR 60.758(a), (b)(1), (b)(3), (c)(1)(i), (c)(2), (d), (e), and (f); and
- (11) 40 CFR 60.759.

Operational Standards for Collection and Control Systems [40 CFR 60.753]

In order to comply with 40 CFR 60.752(b)(2)(ii), 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).
- (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) A landfill gas temperature less than 60°C (140°F) for wells #134, #136, #140, and #169.
 - (2) A landfill gas temperature less than 62.8°C (145°F) for well #19.
 - (3) A landfill gas temperature less than 65.6°C (150°F) for wells #10R, #103C, #104C, #117, #129B, #139, #173, #181, and HR9.
 - (4) A landfill gas temperature less than 71.1°C (160°F) for wells #79, #123, #131, #137, #138, #170, and #174.
 - (5) A landfill gas temperature less than 73.9°C (165°F) for well #132 and #143B.
 - (6) A landfill gas temperature less than 76.7°C (170°F) for wells #31A, #36A, #89A, #107B, #113B, #128A, #130A, #147, #179, and #186.
 - (7) A landfill gas temperature less than 79.4°C (175°F) for wells #22R and #24R.

- (8) A landfill gas temperature less than 82.2°C (180°F) for wells #16A, #27R, #35A, #45A, #59B, #60A, #69R, #96A, #103B, #105C, #108R, #125, #143A, #145, and #160.
 - (9) A landfill gas temperature less than 85°C (185°F) for well #157 and #168.
 - (10) A landfill gas temperature less than 87.8°C (190°F) for wells #4B, #7B, #13R, #21A, #28A, #32A, #50R, #70A, #83, #88B, #97A, #100A, #101B, #109B, #111B, #124A, #127A, #146, #149, #150, #153, #164, and #167.
 - (11) A landfill gas temperature less than 90.6°C (195°F) for well #66A.
 - (12) A landfill gas temperature less than 93.33°C (200°F) for well #1C, #2B, #52R, #53R, #55R, #78A, #85B, #99A, #114A, #119A, and #155A.
 - (13) A landfill gas temperature less than 98.89°C (210°F) for wells #6B, #9B, #14R, #15R, #25R2, #26R, #33A, #46B, #51R, #54R, #56R, #57R, #58R2, #61B, #62R2, #63B, #65A, #67A, #68B, #71A, #72R2, #73R2, #74R2, #75B, #76A, #77A, #82A, #98B, #112B, #115A, #120A, #121A, #122A, #126A, #148, #154, #156, #163, #165, #166, and #178.
 - (14) A landfill gas oxygen concentration of less than 15% for horizontal collector HR8.
 - (15) A landfill gas oxygen concentration of less than 22% for horizontal collector HR9.
 - (16) A landfill gas oxygen concentration of less than 21.1% for the leachate cleanout risers CO02, CO03, CO04, CO05, CO06, horizontal trenches HT01, HT3A, HT3C, HT4B, and leachate sumps LS02, LS03, LS04, and LS05.
 - (17) A landfill gas oxygen concentration of less than 22% for the perimeter collection sumps CS13, CS14, PCS01, PCS02, PCS03, PCS04, PCS05, PCS06, PCS07, PCS08, PCS09, PCS10, PCS11, PCS12, PCS15 and leachate cleanout risers CO09, CO10, CO13, and CO7A.
 - (18) A landfill gas oxygen concentration of less than 22% for the horizontal trench HOZ2 and horizontal collectors HR5, HR6, HR7, HR11, and HR14.
 - (19) A landfill gas oxygen concentration of less than 22% for the temporary liquid sumps TLS1, TLS2, TLS3, TLS4, TLS5, TLS6, TLS7, TLS8, TLS9, TLS10, TLS11, TLS12, and TLS13.
- (d) The following active landfill gas collection and control system components have been permanently decommissioned:
- (1) Leachate sumps LS06, LS07, LS08, LS12 and LS13, decommissioned in 2016.

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) **40 CFR 60, Subpart IIII (Standards of Performance for Stationary Compression Ignition Internal Combustion Engines) (326 IAC 12):** The provisions of this subpart are applicable to owners, and operators of stationary compression ignition (CI) internal combustion engines (ICE), that commenced construction after July 11, 2005, where the stationary CI ICE are manufactured after April 1, 2006, and are not fire pump engines; or are manufactured as a certified National Fire Protection Association (NFPA) fire pump engine after July 1, 2006. The propane-fired emergency generators are spark ignition and not compression ignition. The two water pumps and three dual fuel-fired portable generators are considered non-road engines and are exempt from Subpart IIII pursuant to 40 CFR 60.4200(d). Therefore, the requirements of 40 CFR 60, Subpart IIII do not apply and are not included in the permit.
- (i) **40 CFR 60, Subpart JJJJ (Standards of Performance for Stationary Spark Ignition Internal Combustion Engines) (326 IAC 12):** The provisions of this subpart are applicable to owners and operators of stationary spark ignition (SI) internal combustion engines (ICE) that commence construction after June 12, 2006, where the stationary SI ICE are manufactured on or after January 1, 2009, for emergency engines with a maximum engine power greater than 25 HP. All owners or operators of stationary SI ICE that are modified or reconstructed after June 12, 2006 are subject to the provisions of Subpart JJJJ. The two water pumps and three dual-fuel fired portable generators are non-road engines and are exempt from 40 CFR 60, Subpart JJJJ pursuant to 40 CFR 60.4230(e). The propane-fired emergency generators were constructed in 2012 have spark ignition engines rated at 22.80 HP and are not subject to 40 CFR 60, Subpart JJJJ. The proposed propane-fired emergency generator located in the leachate treatment building was constructed in 2016 and has an output of 118 HP and is subject to Standards of Performance for Stationary Spark Ignition Internal Combustion Engines (40 CFR 60, Subpart JJJJ), which is incorporated by reference as 326 IAC 12, and included as Attachment F of this permit. The unit subject to 40 CFR 60, Subpart JJJJ is described below:
- (1) One (1) propane-fired emergency generator, with a maximum capacity of 70 kW (118 HP) output, 1.099 MMBtu/hr heat input, 6,670 cc total displacement (0.68 liters per cylinder), constructed in 2016. [40 CFR 63, Subpart ZZZZ]
[40 CFR 60, Subpart JJJJ]

Nonapplicable portions of 40 CFR 60, Subpart JJJJ will not be included in the permit. The facilities listed above are subject to the following provisions of 40 CFR 60, Subpart JJJJ:

- 1) 40 CFR 60.4230(a)(4)(iv), and (a)(6);
- 2) 40 CFR 60.4233(c);
- 3) 40 CFR 60.4234;
- 4) 40 CFR 60.4236(a), (d), and (e);
- 5) 40 CFR 60.4243(a)(1), and (d);
- 6) 40 CFR 60.4245(a);
- 7) 40 CFR 60.4246;
- 8) 40 CFR 60.4248; and
- 9) Table 3.

NESHAP:

- (j) **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 D of this permit. The affected facility is listed below:

- (1) One (1) municipal solid waste landfill, identified as emissions unit #1, constructed in 1995 and modified in 2006 in accordance with 40 CFR 60, Subpart WWW, and approved for modification in 2006 and 2016 in accordance with 326 IAC 2-7-10.5, but not 40 CFR 60, Subpart WWW, with a maximum design capacity of 102,030,469 megagrams (Mg) and 124,965,933 bank cubic yards. The landfill includes a gas treatment system installed in 2009. Landfill gas is sent offsite for sale or use and/or is combusted in one (1) or more of the enclosed combustors (emission units #3 and #4 and the leachate evaporator).
[40 CFR 60, Subpart WWW] [40 CFR 63, Subpart AAAA] [40 CFR 61, Subpart M]

Nonapplicable portions of the NESHAP will not be included in the permit. The municipal solid waste landfill is subject to the following portions of Subpart 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.

- (k) **40 CFR 63, Subpart T (National Emission Standards for Halogenated Solvent Cleaning) (326 IAC 20-6):** The provisions of this subpart apply to each individual batch vapor, in-line vapor, in-line cold, and batch cold solvent cleaning machine that uses any solvent containing methylene chloride, perchloroethylene, trichloroethylene, 1,1,1-trichloroethane, carbon tetrachloride, or chloroform, or any combination of these HAP solvents, in a total concentration greater than 5% by weight, as a cleaning or drying agent. The cleaning and degreasing operations at this location do not use one of the regulated solvents. Therefore, the requirements of 40 CFR 63, Subpart T are not included in the permit.
- (l) **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 landfill is a major source of HAP with estimated NMOC emissions of 50 megagrams or more. 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, identified as emissions unit #1, constructed in 1995 and modified in 2006 in accordance with 40 CFR 60, Subpart WWW, and approved for modification in 2006 and 2016 in accordance with 326 IAC 2-7-10.5, but not 40 CFR 60, Subpart WWW, with a maximum design capacity of 102,030,469 megagrams (Mg) and 124,965,933 bank cubic yards. The landfill includes a gas treatment system installed in 2009. Landfill gas is sent offsite for sale or use and/or is combusted in one (1) or more of the enclosed combustors (emission units #3 and #4 and the leachate evaporator).
[40 CFR 60, Subpart WWW] [40 CFR 63, Subpart AAAA] [40 CFR 61, Subpart M]
- (2) One (1) enclosed combustor for landfill gas combustion, identified as emissions unit #3, constructed in 2006, with a maximum capacity of 6,000 SCFM.
[40 CFR 60, Subpart WWW] [40 CFR 63, Subpart AAAA]
- (3) One (1) enclosed combustor for landfill gas combustion, identified as emission unit #4, constructed in 2012, with a maximum capacity of 5,500 SCFM.
[40 CFR 60, Subpart WWW] [40 CFR 63, Subpart AAAA]
- (4) One (1) landfill gas-fired leachate evaporator, approved in 2015 for construction, identified as LE1, with a maximum capacity of 30,000 gallons of leachate per day with a 13 MMBtu/hr burner, with PM emissions of less than 0.551 pound per hour, emissions are uncontrolled, the unit exhausts to stack S-LE1.
[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 Subpart AAAA:

- 1) 40 CFR 63.1930;
- 2) 40 CFR 63.1935(a)(1);
- 3) 40 CFR 63.1940(a), and (c);
- 4) 40 CFR 63.1945(b), and (d);
- 5) 40 CFR 63.1950;
- 6) 40 CFR 63.1955(a)(1), and (b);
- 7) 40 CFR 63.1960;
- 8) 40 CFR 63.1965;
- 9) 40 CFR 63.1975;
- 10) 40 CFR 63.1980(a), and (b);
- 11) 40 CFR 63.1985;
- 12) 40 CFR 63.1990; and
- 13) 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.

- (m) **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. An OLD operation is defined in the subpart as the combination of activities and equipment used to store or transfer organic liquids into, out of, or within a plant site regardless of the specific activity being performed. Activities include storage, transfer, blending, compounding, and packaging. An organic liquid is defined in Subpart EEEE as any non-crude oil liquid or

liquid mixture that contains 5% by weight or greater of an organic HAP listed in the Table 1 of the subpart. Organic liquids specifically excluded from the rule include:

- (1) Any crude oils downstream of the first point of custody transfer
- (2) Gasoline (including aviation gasoline)
- (3) Kerosene (No. 1 distillate oil)
- (4) Diesel (No. 2 distillate oil)
- (5) Asphalt
- (6) Heavier distillate oils and fuel oils
- (7) Any fuel consumed or dispensed on the plant site directly to users
- (8) Hazardous waste
- (9) Wastewater
- (10) Ballast water
- (11) Any non-crude oil liquid with an average true vapor pressure less than 0.1 psi

The majority of the organic liquid storage vessels at this location contain diesel fuel, motor oil, transmission fluid and antifreeze, which are all excluded from regulation by the rule or do not constitute an organic liquid. The leachate storage tanks contain an organic liquid but the mixture does not contain 5% or more by weight of a listed HAP. Therefore, the requirements of 40 CFR 63, Subpart EEEE are not included in the permit.

- (n) **40 CFR 63, Subpart ZZZZ (National Emission Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines) (326 IAC 20-82):** This source is subject to the National Emission Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines (40 CFR 63, Subpart ZZZZ), which is incorporated by reference as 326 IAC 20-82, and included as Attachment E to the permit. The provisions of 40 CFR 63, Subpart ZZZZ are applicable to owners and operators of stationary reciprocating internal combustion engines (RICE) located at a major or area source of hazardous air pollutants (HAP), except if the stationary RICE is being tested at a test cell or stand. Pursuant to 40 CFR 63.6675, a stationary RICE is defined as a reciprocating internal combustion engine which uses reciprocating motion to convert heat energy into mechanical work and which is not mobile. Stationary RICE differ from mobile RICE in that a stationary RICE is not a nonroad engine as defined in 40 CFR 1068.30, and is not used to propel a motor vehicle or a vehicle used solely for competition. Newton County Landfill contains propane-fired emergency generators subject to the provisions of 40 CFR 63, Subpart ZZZZ. The units subject to this rule include the following:

- (1) Three (3) propane-fired emergency generators, each with a maximum capacity of 17 kW (22.80 HP) power output, 0.237 MMBtu/hr heat input, 992 cc total displacement (0.5 liters per cylinder), constructed in 2012.
[40 CFR 63, Subpart ZZZZ]
- (2) One (1) propane-fired emergency generator, with a maximum capacity of 70 kW (118 HP) output, 1.099 MMBtu/hr heat input, 6,670 cc total displacement (0.68 liters per cylinder), constructed in 2016. [40 CFR 63, Subpart ZZZZ]
[40 CFR 60, Subpart JJJJ]

Nonapplicable portions of the NESHAP will not be included in the permit. The propane-fired emergency generators are subject to the following portions of 40 CFR 63, Subpart ZZZZ:

- 1) 40 CFR 63.6580;
- 2) 40 CFR 63.6585(a), and (b);
- 3) 40 CFR 63.6590(a)(2)(ii), and (c)(6);
- 4) 40 CFR 63.6660;

- 5) 40 CFR 63.6665;
 - 6) 40 CFR 63.6670;
 - 7) 40 CFR 63.6675; and
 - 8) Table 8.
- (o) **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. Newton County Landfill is a major source of HAP. Therefore, the requirements of Subpart CCCCCC are not included in the permit.

State Rule Applicability - Entire Source

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 contains an exhaust stack through which twenty-five tons per year or more of PM can pass. Therefore, the requirements of 326 IAC 1-7 are included in the permit.

326 IAC 2 (Prevention of Significant Deterioration)

PSD applicability is discussed under the Permit Level Determination – PSD section.

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, NO_x, 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, 2016, 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 5-1 (Opacity Limitations)

This source is subject to the opacity limitations specified in 326 IAC 5-1-2(1).

326 IAC 6-4 (Fugitive Dust Emissions)

This rule applies to all sources of fugitive dust. The landfill contains paved and unpaved roads and parking lots with public access that produce fugitive dust emissions. 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, as designated by the Air Pollution Control Board, 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 constructed in 1995, is located in an attainment county for PM, and has potential fugitive PM emissions of 25 TPY or more. Therefore, the source did not obtain all required permits prior to December 13, 1985 and the provisions of 326 IAC 6-5 are included in the permit. A fugitive dust plan is included as Attachment A to the permit.

326 IAC 6.5 PM Limitations Except Lake County

This source is not subject to 326 IAC 6.5 because it is not located in one of the following counties: Clark, Dearborn, Dubois, Howard, Marion, St. Joseph, Vanderburgh, Vigo or Wayne.

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 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 requirements 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 listed in the rule. Therefore, the requirements 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 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). The provisions of 326 IAC 2-4.1 are not applicable to electric utility steam generating units, a major source of HAP specifically regulated or exempted from regulation by a National Emission Standard for Hazardous Air Pollutants (HAP), stationary sources within a source category deleted from Section 112(c)(9) of the CAA, and research and development activities. The municipal solid waste landfill, constructed in 1995, is specifically regulated by a NESHAP, 40 CFR 63, Subpart AAAA. Therefore, the requirements of 326 IAC 2-4.1 do not apply to the landfill.

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). 326 IAC 8-1-6 requires source subject to the rule to reduce VOC emissions using the Best Available Control Technology (BACT). Newton County Landfill originally constructed a landfill in 1972 that was permitted under Solid Waste Permit No. 56-02. In 1995, the original landfill was excavated and the waste was deposited in the new and improved Newton County Landfill (permitted under new Solid Waste Permit No. 56-05). Therefore, IDEM, OAQ considers the current landfill to be constructed in 1995 and subject to 326 IAC 8-1-6, since it has potential emissions of twenty-five (25) tons per year or more of VOC. See Appendix B to this TSD for the 326 IAC 8-1-6 (Best Available Control Technology (BACT)) Review.

Pursuant to 326 IAC 8-1-6 (BACT) and significant source modification number 111-35382-00017, the Permittee shall control VOC emissions from the municipal solid waste landfill using Best Available Control Technology (BACT), which has been determined to be the following:

- (a) VOC in the landfill gas collected from the municipal solid waste landfill shall be controlled at all times by one (1) or more of the enclosed flares (emission units #3 and #4) and/or by sending the landfill gas offsite for sale or for beneficial reuse onsite in the leachate evaporator.
- (b) For any landfill gas that this not sent offsite for sale or used onsite for beneficial reuse in the leachate evaporator, VOC (measured as NMOC) in the landfill gas collected from the municipal solid waste landfill shall be controlled by one (1) or more of the enclosed flares (emission units #3 and #4) and each enclosed flare shall have at an NMOC control efficiency of 98% by weight or more or shall reduce the outlet concentration of NMOC to equal to or less than 20 ppmv, dry, as hexane corrected to 3% oxygen.

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. This municipal solid waste landfill was constructed in 1995 and the provisions of 326 IAC 8-8.1 are not included in the permit.

Propane-Fired Emergency Generators

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). The provisions of 326 IAC 2-4.1 are not applicable to electric utility steam generating units, a major source of HAP specifically regulated or exempted from regulation by a National Emission Standard for Hazardous Air Pollutants (HAP), stationary sources within a source category deleted from Section 112(c)(9) of the CAA, and research and development activities. The potential to emit of each propane-fired RICE for a single HAP is less than ten tons per year, and for a combination of HAPs is less than twenty-five tons per year. Therefore, the requirements of 326 IAC 2-4.1 are not included in the permit for the landfill gas fired engine generator sets.

326 IAC 10-5 (Nitrogen Oxide Reduction Program for Internal Combustion Engines (ICE))

The provisions of 326 IAC 10-5 are applicable to all owners or operators of any large NOx SIP Call engine. A large NOx SIP Call engine is defined in the rule as a stationary internal combustion engine identified and designated as large in the NOx SIP Call engine inventory as emitting more than one (1) ton of NOx per average ozone season day in 1995. The NOx SIP Call engine inventory is an inventory of internal combustion engines compiled by the U.S. EPA as part of the NOx SIP Call rule. The propane-fired engine generator sets are not large NOx SIP Call engines. Therefore, the requirements of 326 IAC 10-5 are not included in the permit.

Parts Washing Machine

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 parts washing machine at this source, which is a cold cleaner degreaser, does not have potential VOC emissions of twenty-five tons per year or more and is regulated by another Article 8 rule (i.e., 326 IAC 8-3-2 and 326 IAC 8-3-8). Therefore, the requirements of 326 IAC 8-1-6 are not included in the permit.

326 IAC 8-3-2 (Cold Cleaner Degreaser Control Equipment and Operating Requirements)

The provisions of 326 IAC 8-3-2 apply to each owner or operator of a degreaser using solvents that contain one (1) or more volatile organic compounds (VOC). The parts washing machine (degreasing operation) located at this source uses a solvent containing VOC. Therefore, the provisions of 326 IAC 8-3-2 are included in the permit. Pursuant to 326 IAC 8-3-2 (Cold cleaner degreaser control equipment and operating requirements), for cold cleaning operations constructed after January 1, 1980, the Permittee shall comply with the following:

- (a) The owner or operator of a cold cleaner degreaser shall ensure the following control equipment and operating requirements are met:
 - (1) Equip the degreaser with a cover;
 - (2) Equip the degreaser with a device for draining cleaned parts;
 - (3) Close the degreaser cover whenever parts are not being handled in the degreaser;
 - (4) Drain cleaned parts for at least fifteen (15) seconds or until dripping ceases;

- (5) Provide a permanent, conspicuous label that lists the operation requirements in subdivisions (3), (4), (6), and (7);
 - (6) Store waste solvent only in closed containers.
 - (7) Prohibit the disposal or transfer of waste solvent in such a manner that could allow greater than twenty percent (20%) of the waste solvent (by weight) to evaporate into the atmosphere.
- (b) The owner or operator of a cold cleaner degreaser subject to this subsection shall ensure the following additional control equipment and operating requirements are met:
- (1) Equip the degreaser with one (1) of the following control devices if the solvent is heated to a temperature of greater than forty-eight and nine-tenths (48.9) degrees Celsius (one hundred twenty (120) degrees Fahrenheit):
 - (A) A freeboard that attains a freeboard ratio of seventy-five hundredths (0.75) or greater.
 - (B) A water cover when solvent used is insoluble in, and heavier than, water.
 - (C) A refrigerated chiller.
 - (D) Carbon adsorption.
 - (E) An alternative system of demonstrated equivalent or better control as those outlined in clauses (A) through (D) that is approved by the department. An alternative system shall be submitted to the U.S. EPA as a SIP revision.
 - (2) Ensure the degreaser cover is designed so that it can be easily operated with one (1) hand if the solvent is agitated or heated.
 - (3) If used, solvent spray:
 - (A) must be a solid, fluid stream; and
 - (B) shall be applied at a pressure that does not cause excessive splashing.

326 IAC 8-3-8 (Material Requirements for Cold Cleaner Degreasers)

The provisions of 326 IAC 8-3-8 apply to all cold cleaner degreasers subject to 326 IAC 8-3-2 and located anywhere in the state. This source contains a cold cleaner degreaser, identified as the parts washing machine, and is subject to 326 IAC 8-3-2. Therefore, the provisions of 326 IAC 8-3-8 are included in the permit. Pursuant to 326 IAC 8-3-8, on and after January 1, 2015, material requirements for cold cleaner degreasers are as follows:

- (a) The Permittee shall not operate a cold cleaner degreaser with a solvent that has a VOC composite partial vapor pressure that exceeds one (1) millimeter of mercury (nineteen-thousandths (0.019) pound per square inch) measured at twenty (20) degrees Celsius (sixty-eight (68) degrees Fahrenheit).
- (b) The Permittee shall maintain the following records for each purchase:
 - (1) The name and address of the solvent supplier

- (2) The date of purchase (or invoice/bill date of contract servicer indicating service date;
- (3) The type of solvent purchased;
- (4) The total volume of solvent purchased;
- (5) The true vapor pressure of the solvent measured in millimeters of mercury at twenty (20) degrees Celsius (sixty-eight (68) degrees Fahrenheit).

326 IAC 8-6 (Organic Solvent Emission Limitations)

The provisions of 326 IAC 8-6 apply to existing sources as of January 1, 1980, located in Lake and Marion County, with potential emissions of 100 tons of VOC per year and not limited by another Article 8 rule. This rule also applies to sources commencing operations after October 7, 1974, and prior to January 1, 1980, located anywhere in the state, with potential emissions of 100 tons of VOC per year and not limited by another Article 8 rule. The degreasing operation located at this source is regulated by another Article 8 rule. Therefore, the requirements of 326 IAC 8-6 are not included in the permit.

Leachate Storage Tanks

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). The provisions of 326 IAC 2-4.1 are not applicable to electric utility steam generating units, a major source of HAP specifically regulated or exempted from regulation by a National Emission Standard for Hazardous Air Pollutants (HAP), stationary sources within a source category deleted from Section 112(c)(9) of the CAA, and research and development activities. The storage tanks located at this facility are insignificant activities with the potential to emit of a single HAP of less than ten tons per year and a combination of HAPs of less than twenty-five tons per year. Therefore, the requirements of 326 IAC 2-4.1 are not 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 organic liquid storage tanks do not have potential VOC emissions of twenty-five tons per year or more. Therefore, the requirements of 326 IAC 8-1-6 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 Newton County. Therefore, the requirements of 326 IAC 8-9 are not included in the permit.

Gasoline AST

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 fuel dispensing operation does not have potential VOC

emissions of twenty-five tons per year or more. Therefore, the requirements 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 petroleum liquid storage vessels located at this source have capacities of less than 39,000 gallons. Therefore, the requirements 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. This source contains a gasoline dispensing facility. However, it has a throughput of less than 10,000 gallons per month. Therefore, the requirements 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 Newton County. Therefore, the requirements of 326 IAC 8-9 are not included in the permit.

Tub Grinder and Pug Mill

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 tub grinder and pug mill are both manufacturing processes producing particulate matter. However, the tub grinder has potential PM emissions of less than 0.551 pounds per hour and is exempt from regulation pursuant to 326 IAC 6-3-1(b)(14). Therefore, the provisions of 326 IAC 6-3 are included in the permit for the pug mill but not the tub grinder.

Pursuant to 326 IAC 6-3-2 (Particulate Emission Limitations for Manufacturing Processes), the allowable particulate emission rate shall not exceed the pounds per hour rate when operating at the process weight rate shown in the table below:

Emission Unit (Control Device)	Process Weight Rate (ton/hr)	Maximum Allowable Emission Rate (lb/hr)
Combined Silo Vents, 2 Units (Silo Top Dust Collectors, DC1)	40.50	42.64
Pug Mill Dust Collector, 1 Unit (Dust Collector DC2)	40.50	42.64

The maximum allowable pound per hour emission rates shown in the table above were calculated with the following equation:

Interpolation and extrapolation of the data for the process weight rate in excess of sixty thousand (60,000) pounds per hour, thirty (30) tons per hour, shall be accomplished by use of the following equation:

$$E = 55.0 \times P^{0.11} - 40$$

Where: E = rate of emission in pounds per hour; and
P = process weight in tons per hour.

Torpedo Heaters

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 most common example of an indirect heating unit is a boiler. In general, 326 IAC applies to emission units that combust fuel for the purpose of generating heat and use water or other liquid media to transfer the heat to a manufacturing process or storage device. The torpedo heaters do not meet the definition of an indirect heating unit because the products of combustion mix with the material being heated. Therefore, the requirements of 326 IAC 6-2 are not included in the permit.

Leachate Evaporator

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 leachate is capable of creating PM emissions when the solids contained in the leachate are liberated when the liquid is evaporated. However, pursuant to 326 IAC 6-3-1(b)(14) manufacturing processes with potential emissions less than 0.551 pound per hour are exempt from the provisions of 326 IAC 6-3. Therefore, the provisions of 326 IAC 6-3 are not included in the permit for the leachate evaporator.

Leachate Treatment System

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). The provisions of 326 IAC 2-4.1 are not applicable to electric utility steam generating units, a major source of HAP specifically regulated or exempted from regulation by a National Emission Standard for Hazardous Air Pollutants (HAP), stationary sources within a source category deleted from Section 112(c)(9) of the CAA, and research and development activities. The leachate treatment system has a potential to emit of a single HAP of less than 10 tons per year and the potential to emit of a combination of HAPs of less than 25 tons per year. Therefore, the provisions of 326 IAC 2-4.1 are not 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 leachate treatment system 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.

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 centrifuge is used to thicken solids removed by the ultrafilter. This emission unit will have negligible PM emissions and is not subject to the provisions of 326 IAC 6-3.

Compliance Determination and Monitoring Requirements

Permits issued under 326 IAC 2-7 are required to ensure that sources can demonstrate compliance with all applicable state and federal rules on a continuous basis. All state and federal rules contain compliance provisions; however, these provisions do not always fulfill the requirement for a continuous demonstration. When this occurs, IDEM, OAQ, in conjunction with the source, must develop specific conditions to satisfy 326 IAC 2-7-5. As a result, Compliance Determination Requirements are included in the permit. The Compliance Determination Requirements in Section D of the permit are those conditions that are found directly within state and federal rules and the violation of which serves as grounds for enforcement action.

If the Compliance Determination Requirements are not sufficient to demonstrate continuous compliance, they will be supplemented with Compliance Monitoring Requirements, also in Section D of the permit. Unlike Compliance Determination Requirements, failure to meet Compliance Monitoring conditions would serve as a trigger for corrective actions and not grounds for enforcement action. However, a violation in relation to a compliance monitoring condition will arise through a source's failure to take the appropriate corrective actions within a specific time period. The compliance determination requirements applicable to this source are as follows:

Compliance Determination Requirements				
Emission Unit	Control Device	Timeframe for Testing	Pollutant	Frequency of Testing
MSW Landfill	Flare 3	Not later than 60 days after issuance of SSM 111-35382-00017	VOC, CO and NOx	Once
			VOC Reduction	Every 5 Years
	Flare 4	Not later than 60 days after issuance of SSM 111-35382-00017	VOC, CO and NOx	Once
			VOC Reduction	Every 5 Years
Pug Mill	Silo Top Dust Collectors, DC1, 2 Units	Testing is not required because the emission units are storage silos that do not have constant emissions. Also, a low control efficiency is required by the filters (91.54%) to comply with limits.		
	Dust Collector DC2	Not later than 60 days after issuance of SSM 111-35382-00017	PM, PM10, and PM2.5	Every 5 Years
Leachate Evaporator	None	Not later than 60 days after issuance of SSM 111-35382-00017	CO	Once

Compliance Determination Requirements - Use of Control Device	
Pug Mill - Silo Loading	The silo top dust collectors, both identified as DC1, shall be in operation and controlling emissions at all times the associated silo is in operation.
Pug Mill - Pug Mill Loading	Dust Collector DC2 shall be in operation and controlling emissions at all times the pug mill is in operation.
Municipal Solid Waste Landfill	VOC and CO emissions from the municipal solid waste landfill shall be controlled by emission unit #3 or emission unit #4 at all times.

The compliance monitoring requirements applicable to this source are as follows:

The pug mill is subject to the requirements of 40 CFR 64 (Compliance Assurance Monitoring) for PM, PM10 and direct PM2.5. The CAM Plan follows:

CAM PLAN - Pug Mill Silos - PM / PM10 / Direct PM2.5	
Control Device	Silo Top Dust Collectors - 2 Units - DC1
Applicable Requirement and Emission Limit	<u>Combined Silo Emissions</u> 326 IAC 2-2 Minor Limit // PM - 3.14 lb/ton 326 IAC 2-2 Minor Limit // PM10 - 1.1 lb/ton 326 IAC 2-2 Minor Limit // PM2.5 - 1.1 lb/ton 326 IAC 6-3-2 // PM - 42.6 lb/hr
Major Unit	No
CAM Indicator	VE Notations
Measurement Approach	Trained Operator
Monitoring Frequency	Once per Day
Justification	A change in opacity can indicate a bag failure.
Indicator Range	Visual inspection with Normal or Abnormal
Performance Criteria	
Data Representativeness	Observed at dust collector exhaust.
OA/OC Criteria	Employee trained in normal emissions from unit and employed at least one month.
Data Collection Procedures	Manually observed and recorded in log.

CAM PLAN - Pug Mill Loading - PM / PM10 / Direct PM2.5	
Control Device	Pug Mill Dust Collector DC2, 1 Unit
Applicable Requirement and Emission Limit	326 IAC 2-2 Minor Limit // PM - 0.57 lb/ton 326 IAC 2-2 Minor Limit // PM10 - 0.16 lb/ton 326 IAC 2-2 Minor Limit // PM2.5 - 0.16 lb/ton 326 IAC 6-3-2 // PM - 42.6 lb/hr
Major Unit	No
CAM Indicator	VE Notations
Measurement Approach	Trained Operator
Monitoring Frequency	Once per Day
Justification	A change in opacity can indicate a bag failure.
Indicator Range	Normal or Abnormal
Performance Criteria	
Data Representativeness	Observed at dust collector exhaust.
OA/OC Criteria	Employee trained in normal emissions from unit and employed at least one month.
Data Collection Procedures	Manually observed and recorded in log.

Municipal Solid Waste Landfill - VOC	
Control Device	Enclosed Combustor
Applicable Requirement and Emission Limit	<u>PSD Minor Limit, 40 CFR 60, Subpart WWW, 326 IAC 8-1-6 (BACT)</u> Use Enclosed Flares/Leachate Evaporator/Sell Offsite, 98% by weight NMOC reduction or reduce the outlet concentration of NMOC to equal to or less than 20 ppmv, dry, as hexane corrected to 3% oxygen
Major Unit	No
CAM Indicator	Presence of Flame when using enclosed flare
Measurement Approach	Measurement of flame presence with thermocouple or infrared monitor when using an enclosed flare
Monitoring Frequency	Continuous
Justification	If the flare flame is present in the flare, NMOC will be reduced by 98% by weight or to 20 ppmv.
Indicator Range	Present or Not Present
Performance Criteria	
Data Representativeness	Measured at pilot flame.

Municipal Solid Waste Landfill - VOC	
OA/OC Criteria	Employee trained in normal emissions from unit and employed at least one month.
Data Collection Procedures	Automatically recorded.

This source is subject to additional compliance monitoring requirements included in applicable NSPS and NESHAP listed in the permit.

Recommendation

The staff recommends to the Commissioner that the Significant Source Modification and 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 applications and additional information submitted by the applicant.

Conclusion

The operation of this municipal solid waste landfill shall be subject to the conditions of the attached Part 70 Operating Permit Renewal No. T111-35306-00017.

The construction of this proposed modification shall be subject to the conditions of the attached proposed Part 70 Significant Source Modification No. 111-35382-00017.

IDEM Contact

- (a) Questions regarding this proposed permit can be directed to David Matousek at the Indiana Department 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 Summary - Entire Source - After to 2015 Expansion Project**

Company Name: Newton County Landfill

Address: 2266 East 500 South Road, Brook, Indiana 47922

Significant Source Modification No.: 111-35382-00017

Part 70 Operating Permit Renewal No.: T111-35606-00017

Reviewer: David Matousek

Date: August 10, 2015

Limited / Controlled Potential to Emit - After 2015 Expansion (TPY)									
Emission Unit	PM	PM ₁₀	Direct PM _{2.5}	SO ₂	VOC	CO	NOx	Total HAP	HCL
Municipal Solid Waste Landfill	0.00	0.00	0.00	0.00	5.60	235.68	0.00	2.03	0.00
Enclosed Combustor #3	12.96	12.96	12.96	77.35	4.16		48.73	6.16	6.16
Enclosed Combustor #4	11.88	11.88	11.88	70.90	3.81		44.68	5.65	5.65
Landfill Fugitive HAP	0.00	0.00	0.00	0.00	0.00	0.00	0.00	25.35	0.00
Pug Mill	55.65	18.90	18.90	0.00	0.00	0.00	0.00	0.00	0.00
Leachate Evaporator (Evaporation) - LE1	0.00	0.00	0.00	0.00	2.87	11.43	0.00	0.69	0.00
Leachate Evaporator (Combustion) - LE1	0.00	0.00	0.00	8.53	0.18		3.42	0.68	0.68
Leachate Evaporator (LFG Residuals) - LE1	0.00	0.00	0.00	0.00	0.00		0.00	0.09	0.00
Leachate Evaporator (Particulate) - LE1	2.07	2.07	2.07	0.00	0.00		0.00	0.00	0.00
Tub Grinder	0.32	0.17	0.17	0.00	0.00	0.00	0.00	0.00	0.00
Leachate Treatment System	0.00	0.00	0.00	0.00	5.71	0.00	0.00	0.86	0.00
Insignificant Activities									
Parts Washer	0.00	0.00	0.00	0.00	0.51	0.00	0.00	0.02	0.00
Gasoline AST - Tank A-14	0.00	0.00	0.00	0.00	0.32	0.00	0.00	0.02	0.00
Propane Emergency Generators	0.03	0.03	0.03	1.75E-03	0.42	0.65	0.70	0.00	0.00
Leachate Storage Tank - Tank 1	0.00	0.00	0.00	0.00	8.47E-04	0.00	0.00	6.74E-04	0.00
Leachate Storage Tank - Tank 2	0.00	0.00	0.00	0.00	8.47E-04	0.00	0.00	6.74E-04	0.00
Leachate Storage Tank - Tank 3	0.00	0.00	0.00	0.00	8.50E-06	0.00	0.00	1.20E-06	0.00
Oil/Water Separator	0.00	0.00	0.00	0.00	5.90E-03	0.00	0.00	5.74E-03	0.00
Misc. Propane Combustion	0.20	0.20	0.20	0.03	0.23	2.15	3.73	0.00	0.00
Total PTE after Issuance	83.10	46.21	46.20	156.81	23.80	249.90	101.26	41.55	12.49
PSD Major Source Thresholds	250	250	250	250	250	250	250	NA	NA

(continued on the next page)

Appendix A to the Technical Support Document (TSD)
Potential to Emit Summary - Entire Source - After to 2015 Expansion Project
(continued from previous page)

Uncontrolled Potential to Emit - After 2015 Expansion (TPY)									
Emission Unit	PM	PM ₁₀	Direct PM _{2.5}	SO ₂	VOC	CO	NOx	Total HAP	Toluene
Municipal Solid Waste Landfill	0.00	0.00	0.00	0.00	280.08	39.74	0.00	101.39	36.43
Enclosed Combustor #3	12.96	12.96	12.96	77.35	4.16	143.33	48.73	6.16	0.00
Enclosed Combustor #4	11.88	11.88	11.88	70.90	3.81	65.70	44.68	5.65	0.00
Landfill Fugitive HAP	0.00	0.00	0.00	0.00	0.00	0.00	0.00	25.35	9.11
Pug Mill	658.12	223.51	223.51	0.00	0.00	0.00	0.00	0.00	0.00
Leachate Evaporator (Evaporation) - LE1	0.00	0.00	0.00	0.00	2.87	0.00	0.00	0.69	0.01
Leachate Evaporator (Combustion) - LE1	0.00	0.00	0.00	8.53	0.18	11.39	3.42	0.68	0.00
Leachate Evaporator (LFG Residuals) - LE1	0.00	0.00	0.00	0.00	0.00	0.04	0.00	0.09	0.03
Leachate Evaporator (Particulate) - LE1	2.07	2.07	2.07	0.00	0.00	0.00	0.00	0.00	0.00
Tub Grinder	0.32	0.17	0.17	0.00	0.00	0.00	0.00	0.00	0.00
Leachate Treatment System	0.00	0.00	0.00	0.00	5.71	0.00	0.00	0.86	0.00
Insignificant Activities									
Parts Washer	0.00	0.00	0.00	0.00	0.51	0.00	0.00	0.02	0.01
Gasoline AST - Tank A-14	0.00	0.00	0.00	0.00	0.32	0.00	0.00	0.02	3.99E-03
Propane Emergency Generators	0.03	0.03	0.03	1.75E-03	0.42	0.65	0.70	0.00	0.00
Leachate Storage Tank - Tank 1	0.00	0.00	0.00	0.00	0.04	0.00	0.00	0.03	0.00
Leachate Storage Tank - Tank 2	0.00	0.00	0.00	0.00	0.04	0.00	0.00	0.03	0.00
Leachate Storage Tank - Tank 3	0.00	0.00	0.00	0.00	4.25E-04	0.00	0.00	6.01E-05	0.00
Oil/Water Separator	0.00	0.00	0.00	0.00	0.29	0.00	0.00	0.29	0.05
Misc. Propane Combustion	0.20	0.20	0.20	0.03	0.23	2.15	3.73	0.00	0.00
Total PTE	685.57	250.82	250.81	156.81	298.66	263.00	101.26	141.26	45.64
Title V Major Source Thresholds	NA	100	100	100	100	100	100	25.00	10.00

**Appendix A to the Technical Support Document (TSD)
Potential to Emit Summary - Entire Source - Prior to 2015 Expansion Project**

Company Name: Newton County Landfill

Address: 2266 East 500 South Road, Brook, Indiana 47922

Significant Source Modification No.: 111-35382-00017

Part 70 Operating Permit Renewal No.: T111-35606-00017

Reviewer: David Matousek

Date: August 10, 2015

Limited / Controlled Potential to Emit - Prior to 2015 Expansion (TPY)									
Emission Unit	PM	PM ₁₀	Direct PM _{2.5}	SO ₂	VOC	CO	NOx	Total HAP	HCL
Municipal Solid Waste Landfill	0.00	0.00	0.00	0.00	2.71	0.39	0.00	0.98	0.00
Landfill Fugitive HAP	0.00	0.00	0.00	0.00	0.00	0.00	0.00	12.28	0.00
Enclosed Combustor #3	12.96	12.96	12.96	77.35	4.16	143.33	48.73	6.16	6.16
Pug Mill	55.65	18.90	18.90	0.00	0.00	0.00	0.00	0.00	0.00
Leachate Evaporator (Evaporation) - LE1	0.00	0.00	0.00	0.00	2.87	0.00	0.00	0.69	0.00
Leachate Evaporator (Combustion) - LE1	0.00	0.00	0.00	8.53	0.18	11.39	3.42	0.68	0.68
Leachate Evaporator (LFG Residuals) - LE1	0.00	0.00	0.00	0.00	0.00	0.04	0.00	0.09	0.00
Leachate Evaporator (Particulate) - LE1	2.07	2.07	2.07	0.00	0.00	0.00	0.00	0.00	0.00
Tub Grinder	0.32	0.17	0.17	0.00	0.00	0.00	0.00	0.00	0.00
Insignificant Activities									
Parts Washer	0.00	0.00	0.00	0.00	0.51	0.00	0.00	0.02	0.00
Gasoline AST - Tank A-14	0.00	0.00	0.00	0.00	0.32	0.00	0.00	0.02	0.00
Propane Emergency Generators	9.82E-03	9.82E-03	9.82E-03	6.87E-04	0.16	0.25	0.27	0.00	0.00
Leachate Storage Tank - Tank 1	0.00	0.00	0.00	0.00	8.47E-04	0.00	0.00	6.74E-04	0.00
Leachate Storage Tank - Tank 2	0.00	0.00	0.00	0.00	8.47E-04	0.00	0.00	6.74E-04	0.00
Leachate Storage Tank - Tank 3	0.00	0.00	0.00	0.00	8.50E-06	0.00	0.00	1.20E-06	0.00
Oil/Water Separator	0.00	0.00	0.00	0.00	5.90E-03	0.00	0.00	5.74E-03	0.00
Misc. Propane Combustion	0.20	0.20	0.20	0.03	0.23	2.15	3.73	0.00	0.00
Total PTE after Issuance	71.20	34.31	34.30	85.91	11.14	157.55	56.16	20.92	6.84
PSD Major Source Thresholds	250	250	250	250	250	250	250	NA	NA

(continued on the next page)

Appendix A to the Technical Support Document (TSD)

Potential to Emit Summary - Entire Source - Prior to 2015 Expansion Project

(continued from previous page)

Uncontrolled Potential to Emit - Prior to 2015 Expansion (TPY)									
Emission Unit	PM	PM ₁₀	Direct PM _{2.5}	SO ₂	VOC	CO	NOx	Total HAP	Toluene
Municipal Solid Waste Landfill	0.00	0.00	0.00	0.00	135.69	19.25	0.00	49.11	17.64
Landfill Fugitive HAP	0.00	0.00	0.00	0.00	0.00	0.00	0.00	12.28	4.41
Enclosed Combustor #3	12.96	12.96	12.96	77.35	4.16	143.33	48.73	6.16	0.00
Pug Mill	658.12	223.51	223.51	0.00	0.00	0.00	0.00	0.00	0.00
Leachate Evaporator (Evaporation) - LE1	0.00	0.00	0.00	0.00	2.87	0.00	0.00	0.69	0.01
Leachate Evaporator (Combustion) - LE1	0.00	0.00	0.00	8.53	0.18	11.39	3.42	0.68	0.00
Leachate Evaporator (LFG Residuals) - LE1	0.00	0.00	0.00	0.00	0.00	0.04	0.00	0.09	0.03
Leachate Evaporator (Particulate) - LE1	2.07	2.07	2.07	0.00	0.00	0.00	0.00	0.00	0.00
Tub Grinder	0.32	0.17	0.17	0.00	0.00	0.00	0.00	0.00	0.00
Insignificant Activities									
Parts Washer	0.00	0.00	0.00	0.00	0.51	0.00	0.00	0.02	0.01
Gasoline AST - Tank A-14	0.00	0.00	0.00	0.00	0.32	0.00	0.00	0.02	3.99E-03
Propane Emergency Generators	9.82E-03	9.82E-03	9.82E-03	6.87E-04	0.16	0.25	0.27	0.00	0.00
Leachate Storage Tank - Tank 1	0.00	0.00	0.00	0.00	0.04	0.00	0.00	0.03	0.00
Leachate Storage Tank - Tank 2	0.00	0.00	0.00	0.00	0.04	0.00	0.00	0.03	0.00
Leachate Storage Tank - Tank 3	0.00	0.00	0.00	0.00	4.25E-04	0.00	0.00	6.01E-05	0.00
Oil/Water Separator	0.00	0.00	0.00	0.00	0.29	0.00	0.00	0.29	0.05
Misc. Propane Combustion	0.20	0.20	0.20	0.03	0.23	2.15	3.73	0.00	0.00
Total PTE	673.67	238.92	238.92	85.91	144.49	176.41	56.16	69.40	22.15
Title V Major Source Thresholds	NA	100	100	100	100	100	100	25.00	10.00

**Appendix A to the Technical Support Document
Summary of Hazardous Air Pollutants - Uncontrolled Emissions After Project**

Company Name: Newton County Landfill
Address: 2266 East 500 South Road, Brook, Indiana 47922
Significant Source Modification No.: 111-35382-00017
Part 70 Operating Permit Renewal No.: T111-35606-00017
Reviewer: David Matousek
Date: August 10, 2015

Uncontrolled PTE (TPY) - After Expansion																
CAS Number	Hazardous Air Pollutant	Landfill	Landfill Fugitive	Flare 3	Flare 4	Leach Treat	LV1 Evap.	LV1 Comb.	LV1 LFG Residual	Parts Washer	Gas Storage	Tank 1	Tank 2	Tank 3	Oil/Water	Total HAP
83329	Acenaphthene					0.03						3.17E-04	3.17E-04	2.82E-07	4.00E-05	2.58E-02
208968	Acenaphthylene															0.00E+00
107131	Acrylonitrile	3.38	0.84													4.22
120127	Anthracene															0.00E+00
71432	Benzene	1.50	0.38				6.85E-03		1.33E-03		4.50E-03				0.06	1.96
56553	Benz(a)anthracene															0.00E+00
205992	Benzo(b)fluoranthene															0.00E+00
191242	Benzo(g,h,i)perylene															0.00E+00
207089	Benzo(k)fluoranthene															0.00E+00
65850	Benzoic Acid					1.90E-03										1.90E-03
75150	Carbon disulfide	0.44	0.11						3.92E-04							0.56
56235	Carbon tetrachloride	6.19E-03	1.55E-03						5.47E-06							7.74E-03
463581	Carbonyl sulfide	0.30	0.07						2.61E-04							0.37

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Appendix A to the Technical Support Document
Summary of Hazardous Air Pollutants - Uncontrolled Emissions After Project

(continued from previous page)

Uncontrolled PTE (TPY) - After Expansion																
CAS Number	Hazardous Air Pollutant	Landfill	Landfill Fugitive	Flare 3	Flare 4	Leach Treat	LV1 Evap.	LV1 Comb.	LV1 LFG Residual	Parts Washer	Gas Storage	Tank 1	Tank 2	Tank 3	Oil/Water	Total HAP
108907	Chlorobenzene	0.28	0.07						2.50E-04							0.36
67663	Chloroform	0.04	9.01E-03						3.181E-05							0.05
218019	Chrysene															0.00E+00
98828	Cumene						4.57E-03				3.19E-05					4.60E-03
53703	Dibenzo(a,h)anthracene															0.00E+00
134649	Dibenzofuran					2.63E-23						2.09E-18	2.09E-18	0.00	0.00	4.17E-18
106467	1,4-Dichlorobenzene (p)	0.31	0.08				0.02		2.74E-04						7.33E-03	0.41
100414	Ethyl benzene	4.92	1.23				0.01		4.35E-03	5.06E-03	1.92E-04				0.03	6.21
106934	Ethylene dibromide	1.89E-03	4.73E-04						1.67E-06							2.36E-03
75003	Ethyl chloride (Chloroethane)	0.81	0.20						7.16E-04							1.02
107062	Ethylene dichloride (1,2-Dichloroethane)	0.41	0.10						3.60E-04							0.51
75343	Ethylene dichloride (1,1-Dichloroethane)	2.34	0.59						2.07E-03							2.93
106445 108384	Methyl phenol (Cresol)					0.12	0.30					1.15E-04	1.15E-04	1.85E-06	1.79E-04	0.41
206440	Fluoranthene															0.00E+00
86737	Fluorene											1.52E-04	1.52E-04	9.77E-08	6.40E-06	3.11E-04
50000	Formaldehyde															0.00E+00
110543	Hexane	5.70	1.42						5.03E-03		1.20E-02					7.14
7647010	Hydrochloric acid			6.16	5.65			0.88								12.48

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**Appendix A to the Technical Support Document
Summary of Hazardous Air Pollutants - Uncontrolled Emissions After Project**

(continued from previous page)

Uncontrolled PTE (TPY) - After Expansion																
CAS Number	Hazardous Air Pollutant	Landfill	Landfill Fugitive	Flare 3	Flare 4	Leach Treat	LV1 Evap.	LV1 Comb.	LV1 LFG Residual	Parts Washer	Gas Storage	Tank 1	Tank 2	Tank 3	Oil/Water	Total HAP
193395	Indo(1,2,3-cd)pyrene															0.00E+00
71556	Methyl chloroform (1,1,1-Trichloroethane)	0.64	0.16						5.69E-04							0.81
108101	Methyl isobutyl ketone (MIBK) (4-Methyl-2-Pentanone)	1.88	0.47			0.24	0.03		1.66E-03			2.91E-03	2.91E-03	1.54E-05	0.02	2.65
75092	Methylene chloride (Dichloromethane)	12.22	3.06						0.01							15.29
91576	2-Methylnaphthalene					0.09						3.18E-03	3.18E-03	4.35E-06	0.04	0.14
91203	Naphthalene					0.16	0.03					3.65E-03	3.65E-03	1.00E-05	0.01	0.21
3288879	OCDD															0.00E+00
85018	Phenanthrene					7.15E-03						1.96E-04	1.96E-04	1.35E-07	7.33E-07	7.54E-03
108952	Phenol					0.02	0.23					8.03E-05	8.03E-05	1.39E-05		0.25
78875	Propylene dichloride (1,2-Dichloropropane)	0.20	0.05						1.81E-04							0.26
129000	Pyrene															0.00E+00
100425	Styrene														1.14E-03	1.14E-03
79345	1,1,2,2-Tetrachloroethane	1.87	0.47						1.65E-03							2.35
127184	Tetrachloroethylene (Perchloroethylene)	6.22	1.56						5.49E-03							7.79
108863	Toluene	36.43	9.11				9.13E-03		0.03	5.06E-03	3.99E-03				0.05	45.64
79016	Trichloroethylene	3.73	0.93						3.29E-03							4.66
540841	2,2,4-Trimethylpentane										1.34E-03					1.34E-03

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**Appendix A to the Technical Support Document
Summary of Hazardous Air Pollutants - Controlled Emissions After Project**

Company Name: Newton County Landfill
Address: 2266 East 500 South Road, Brook, Indiana 47922
Significant Source Modification No.: 111-35382-00017
Part 70 Operating Permit Renewal No.: T111-35606-00017
Reviewer: David Matousek
Date: August 10, 2015

Controlled PTE (TPY) - After Expansion																
CAS Number	Hazardous Air Pollutant	Landfill	Landfill Fugitive	Flare 3	Flare 4	Leach. Treat.	LV1 Evap.	LV1 Comb.	LV1 LFG Residual	Parts Washer	Gas Storage	Tank 1	Tank 2	Tank 3	Oil / Water	Total HAP
83329	Acenaphthene					0.03						6.35E-06	6.35E-06	5.65E-09	8.00E-07	2.52E-02
208968	Acenaphthylene															0.00E+00
107131	Acrylonitrile	0.07	0.84													0.91
120127	Anthracene															0.00E+00
71432	Benzene	0.03	0.38				6.85E-03		1.33E-03		4.50E-03				1.16E-03	0.42
56553	Benz(a)anthracene															0.00E+00
205992	Benzo(b)fluoranthene															0.00E+00
191242	Benzo(g,h,i)perylene															0.00E+00
65850	Benzoic Acid					1.90E-03										1.90E-03
75150	Carbon disulfide	0.01	0.11						3.92E-04							0.12
56235	Carbon tetrachloride	1.24E-04	1.55E-03						5.47E-06							1.68E-03
463581	Carbonyl sulfide	5.92E-03	0.07						2.61E-04							0.08

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**Appendix A to the Technical Support Document
Summary of Hazardous Air Pollutants - Controlled Emissions After Project**

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Controlled PTE (TPY) - After Expansion																
CAS Number	Hazardous Air Pollutant	Landfill	Landfill Fugitive	Flare 3	Flare 4	Leach. Treat.	LV1 Evap.	LV1 Comb.	LV1 LFG Residual	Parts Washer	Gas Storage	Tank 1	Tank 2	Tank 3	Oil/Water	Total HAP
108907	Chlorobenzene	5.66E-03	0.07						2.50E-04							0.08
67663	Chloroform	7.21E-04	9.01E-03						3.181E-05							9.76E-03
218019	Chrysene															0.00E+00
98928	Cumene						4.57E-03			3.19E-05						4.60E-03
53703	Dibenzo(a,h)anthracene															0.00E+00
134649	Dibenzofuran					2.63E-23						4.17E-20	4.17E-20	0.00	0.00	8.35E-20
106467	1,4-Dichlorobenzene (p)	6.21E-03	0.08				0.02		2.74E-04						1.47E-04	0.10
100414	Ethyl benzene	0.10	1.23				0.01		4.35E-03	5.06E-03	1.92E-04				5.73E-04	1.36
106934	Ethylene dibromide	3.78E-05	4.73E-04						1.67E-06							5.12E-04
75003	Ethyl chloride (Chloroethane)	0.02	0.20						7.16E-04							0.22
107062	Ethylene dichloride (1,2-Dichloroethane)	8.17E-03	0.10						3.60E-04							0.11
75343	Ethylidene dichloride (1,1-Dichloroethane)	0.05	0.59						2.07E-03							0.63
multiple	Methyl phenol (Cresol)					0.12	0.30					2.29E-06	2.29E-06	3.70E-08	3.59E-06	0.41
206440	Fluoranthene															0.00E+00
86737	Fluorene											3.06E-06	3.06E-06	1.95E-09	1.28E-07	6.22E-06
50000	Formaldehyde															0.00E+00
110543	Hexane	0.11	1.42						5.03E-03		1.20E-02					1.56
7647010	Hydrochloric acid			6.16	5.65			0.68								12.49

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**Appendix A to the Technical Support Document
Summary of Hazardous Air Pollutants - Controlled Emissions After Project**

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Controlled PTE (TPY) - After Expansion																
CAS Number	Hazardous Air Pollutant	Landfill	Landfill Fugitive	Flare 3	Flare 4	Leach. Treat.	LV1 Evap.	LV1 Comb.	LV1 LFG Residual	Parts Washer	Gas Storage	Tank 1	Tank 2	Tank 3	Oil / Water	Total HAP
193395	Indo(1,2,3-cd)pyrene															0.00E+00
71556	Methyl chloroform (1,1,1-Trichloroethane)	1.29E-02	0.16						5.69E-04							1.75E-01
108101	Methyl isobutyl ketone (MIBK)	0.04	0.47			0.24	0.03		1.66E-03			5.81E-05	5.81E-05	3.09E-07	4.07E-04	0.78
75092	Methylene chloride (Dichloromethane)	0.24	3.06						0.01							3.31
91576	2-Methylnaphthalene					0.09						6.36E-05	6.36E-05	8.69E-08	8.41E-04	0.09
91203	Naphthalene					0.16	0.03					7.30E-05	7.30E-05	2.01E-07	2.30E-04	0.19
3268879	OCDD															0.00E+00
85018	Phenanthrene					7.15E-03						3.92E-06	3.92E-06	2.70E-09	1.47E-08	7.15E-03
108952	Phenol					0.02	0.23					1.61E-06	1.61E-06	2.79E-07		0.25
78875	Propylene dichloride (1,2-Dichloropropane)	4.09E-03	0.05						1.81E-04							0.06
129000	Pyrene															0.00E+00
100425	Styrene														2.29E-05	2.29E-05
78945	1,1,2,2-Tetrachloroethane	0.04	0.47						1.65E-03							0.51
127184	Tetrachloroethylene (Perchloroethylene)	0.12	1.56						5.49E-03							1.69
106883	Toluene	0.73	9.11				9.13E-03		0.03						9.39E-04	9.89
79016	Trichloroethylene	0.07	0.93						3.29E-03							1.01
540841	2,2,4-Trimethylpentane														1.34E-03	1.34E-03

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**Appendix A to the Technical Support Document
Summary of Hazardous Air Pollutants - Controlled Emissions After Project**

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Controlled PTE (TPY) - After Expansion																
CAS Number	Hazardous Air Pollutant	Landfill	Landfill Fugitive	Flare 3	Flare 4	Leach. Treat.	LV1 Evap.	LV1 Comb.	LV1 LFG Residual	Parts Washer	Gas Storage	Tank 1	Tank 2	Tank 3	Oil/Water	Total HAP
75014	Vinyl chloride	0.09	1.15						4.07E-03							1.25
75354	Vinylidene chloride (1,1-Dichloroethene)	3.90E-03	0.05						1.72E-04							0.05
1330207	Xylene	0.26	3.23			0.20	0.05		0.01	5.06E-03	1.28E-04	4.62E-04	4.62E-04	2.79E-07	1.42E-03	3.75
NA	Arsenic Compounds															0.00E+00
NA	Beryllium Compounds															0.00E+00
NA	Cadmium Compounds															0.00E+00
NA	Chromium Compounds															0.00E+00
NA	Lead Compounds															0.00E+00
NA	Manganese Compounds															0.00E+00
NA	Mercury Compounds	5.89E-04	1.47E-04						2.60E-05							7.63E-04
NA	Nickel Compounds															0.00E+00
NA	Selenium Compounds															0.00E+00
	Summary	2.03	25.35	6.16	5.65	0.86	0.69	0.68	0.09	0.02	0.02	6.74E-04	6.74E-04	1.20E-06	5.74E-03	41.55

Total HAP 41.55 TPY

Worst Case HAP - HCL 12.49 TPY

**Appendix A to the Technical Support Document
Summary of Hazardous Air Pollutants - Uncontrolled Emissions Prior Project**

Company Name: Newton County Landfill
Address: 2266 East 500 South Road, Brook, Indiana 47922
Significant Source Modification No.: 111-35382-00017
Part 70 Operating Permit Renewal No.: T111-35606-00017
Reviewer: David Matousek
Date: August 10, 2015

Uncontrolled PTE (TPY) - Prior Expansion														
CAS Number	Hazardous Air Pollutant	Landfill	Landfill Fugitive	Flare 3	LV1 Evap.	LV1 Comb.	LV1 LFG Residual	Parts Washer	Gas Storage	Tank 1	Tank 2	Tank 3	Oil/Water	Total HAP
83329	Acenaphthene									3.17E-04	3.17E-04	2.82E-07	4.00E-05	6.75E-04
208968	Acenaphthylene													0.00E+00
107131	Acrylonitrile	1.64	0.41											2.05
120127	Anthracene													0.00E+00
71432	Benzene	0.73	0.18		6.85E-03		1.33E-03		4.50E-03				0.06	0.98
56553	Benz(a)anthracene													0.00E+00
205992	Benzo(b)fluoranthene													0.00E+00
191242	Benzo(g,h,i)perylene													0.00E+00
75150	Carbon disulfide	0.22	0.05				3.92E-04							0.27
56235	Carbon tetrachloride	3.00E-03	7.50E-04				5.47E-06							3.76E-03
463581	Carbonyl sulfide	0.14	0.04				2.61E-04							0.18

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**Appendix A to the Technical Support Document
Summary of Hazardous Air Pollutants - Uncontrolled Emissions Prior Project**

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Uncontrolled PTE (TPY) - Prior Expansion														
CAS Number	Hazardous Air Pollutant	Landfill	Landfill Fugitive	Flare 3	LV1 Evap.	LV1 Comb.	LV1 LFG Residual	Parts Washer	Gas Storage	Tank 1	Tank 2	Tank 3	Oil/Water	Total HAP
108907	Chlorobenzene	0.14	0.03				2.50E-04							0.17
67663	Chloroform	0.02	4.36E-03				3.181E-06							0.02
218019	Chrysene													0.00E+00
98828	Cumene				4.57E-03				3.19E-05					4.60E-03
53703	Dibenzo(a,h)anthracene													0.00E+00
134649	Dibenzofuran									2.09E-18	2.09E-18	0.00	0.00	4.17E-18
106467	1,4-Dichlorobenzene (p)	0.15	0.04		0.02		2.74E-04						7.33E-03	0.21
100414	Ethyl benzene	2.38	0.60		0.01		4.35E-03	5.06E-03	1.92E-04				0.03	3.03
106934	Ethylene dibromide	9.20E-04	2.29E-04				1.67E-06							1.15E-03
75003	Ethyl chloride (Chloroethane)	0.39	0.10				7.16E-04							0.49
107062	Ethylene dichloride (1,2-Dichloroethane)	0.20	0.05				3.60E-04							0.25
75343	Ethylidene dichloride (1,1-Dichloroethane)	1.13	0.28				2.07E-03							1.42
106445 108394	3 & 4-Methylphenol (Cresol)				0.30					1.15E-04	1.15E-04	1.85E-06	1.79E-04	0.30
206440	Fluoranthene													0.00E+00
86737	Fluorene									1.52E-04	1.52E-04	9.77E-08	6.40E-06	3.11E-04
50000	Formaldehyde													0.00E+00
110543	Hexane	2.76	0.69				5.03E-03		1.20E-02					3.47
7647010	Hydrochloric acid			6.16		0.68								6.84

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**Appendix A to the Technical Support Document
Summary of Hazardous Air Pollutants - Uncontrolled Emissions Prior Project**

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Uncontrolled PTE (TPY) - Prior Expansion														
CAS Number	Hazardous Air Pollutant	Landfill	Landfill Fugitive	Flare 3	LV1 Evap.	LV1 Comb.	LV1 LFG Residual	Parts Washer	Gas Storage	Tank 1	Tank 2	Tank 3	Oil/Water	Total HAP
193395	Indo(1,2,3-cd)pyrene													0.00E+00
71556	Methyl chloroform (1,1,1-Trichloroethane)	0.31	0.08				5.69E-04							3.91E-01
108101	Methyl isobutyl ketone (MIBK) (4-Methyl-2-Pentanone)	0.91	0.23		0.03		1.66E-03			2.91E-03	2.91E-03	1.54E-05	0.02	1.20
75092	Methylene chloride (Dichloromethane)	5.92	1.48				0.01							7.41
91576	2-Methylnaphthalene									3.18E-03	3.18E-03	4.35E-06	0.04	0.05
91203	Naphthalene				0.03					3.65E-03	3.65E-03	1.00E-05	0.01	0.05
3268879	OCDD													0.00E+00
85018	Phenanthrene									1.96E-04	1.96E-04	1.35E-07	7.33E-07	3.93E-04
108952	Phenol				0.23					8.03E-05	8.03E-05	1.39E-05		0.23
78875	Propylene dichloride (1,2-Dichloropropane)	0.10	0.02				1.81E-04							0.12
129000	Pyrene													0.00E+00
100425	Styrene												1.14E-03	1.14E-03
79345	1,1,2,2-Tetrachloroethane	0.91	0.23				1.65E-03							1.14
127184	Tetrachloroethylene (Perchloroethylene)	3.01	0.75				5.49E-03							3.77
108883	Toluene	17.64	4.41		9.13E-03		0.03	5.06E-03	3.99E-03				0.05	22.15
79016	Trichloroethylene	1.81	0.45				3.29E-03							2.26
540841	2,2,4-Trimethylpentane								1.34E-03					1.34E-03

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**Appendix A to the Technical Support Document
Summary of Hazardous Air Pollutants - Uncontrolled Emissions Prior Project**

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Uncontrolled PTE (TPY) - Prior Expansion														
CAS Number	Hazardous Air Pollutant	Landfill	Landfill Fugitive	Flare 3	LV1 Evap.	LV1 Comb.	LV1 LFG Residual	Parts Washer	Gas Storage	Tank 1	Tank 2	Tank 3	Oil/Water	Total HAP
75014	Vinyl chloride	2.24	0.56				4.07E-03							2.80
75354	Vinylidene chloride (1,1-Dichloroethene)	0.09	0.02				1.72E-04							0.12
1330207	Xylene	6.26	1.56		0.05		0.01	5.06E-03	1.28E-04	0.02	0.02	1.39E-05	0.07	8.01
NA	Arsenic Compounds													0.00E+00
NA	Beryllium Compounds													0.00E+00
NA	Cadmium Compounds													0.00E+00
NA	Chromium Compounds													0.00E+00
NA	Lead Compounds													0.00E+00
NA	Manganese Compounds													0.00E+00
NA	Mercury Compounds	2.85E-04	7.14E-05				2.60E-05							3.83E-04
NA	Nickel Compounds													0.00E+00
NA	Selenium Compounds													0.00E+00
	Summary	49.11	12.28	6.16	0.69	0.68	0.09	0.02	0.02	0.03	0.03	6.01E-05	0.29	69.40
Total HAP		69.40 TPY												
Worst Case HAP - Toluene		22.15 TPY												

**Appendix A to the Technical Support Document
Summary of Hazardous Air Pollutants - Controlled Emissions Prior Project**

Company Name: Newton County Landfill
Address: 2266 East 500 South Road, Brook, Indiana 47922
Significant Source Modification No.: 111-35382-00017
Part 70 Operating Permit Renewal No.: T111-35606-00017
Reviewer: David Matousek
Date: August 10, 2015

Controlled PTE (TPY) - Prior Expansion														
CAS Number	Hazardous Air Pollutant	Landfill	Landfill Fugitive	Flare 3	LV1 Evap.	LV1 Comb.	LV1 LFG Residual	Parts Washer	Gas Storage	Tank 1	Tank 2	Tank 3	Oil/Water	Total HAP
83329	Acenaphthene									6.35E-06	6.35E-06	5.65E-09	8.00E-07	1.35E-05
208968	Acenaphthylene													0.00E+00
107131	Acrylonitrile	0.03	0.41											0.44
120127	Anthracene													0.00E+00
71432	Benzene	0.01	0.18		6.85E-03		1.33E-03		4.50E-03				1.16E-03	0.21
56553	Benz(a)anthracene													0.00E+00
205992	Benzo(b)fluoranthene													0.00E+00
191242	Benzo(g,h,i)perylene													0.00E+00
75150	Carbon disulfide	4.30E-03	0.05				3.92E-04							0.06
56235	Carbon tetrachloride	6.00E-05	7.50E-04				5.47E-06							8.15E-04
463581	Carbonyl sulfide	2.87E-03	0.04				2.61E-04							0.04

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Controlled PTE (TPY) - Prior Expansion														
CAS Number	Hazardous Air Pollutant	Landfill	Landfill Fugitive	Flare 3	LV1 Evap.	LV1 Comb.	LV1 LFG Residual	Parts Washer	Gas Storage	Tank 1	Tank 2	Tank 3	Oil/Water	Total HAP
109907	Chlorobenzene	2.75E-03	0.03				2.50E-04							0.04
67863	Chloroform	3.52E-04	4.36E-03				3.1811E-05							4.75E-03
218019	Chrysene													0.00E+00
96828	Cumene				4.57E-03				3.19E-05					4.60E-03
53703	Dibenzo(a,h)anthracene													0.00E+00
134649	Dibenzofuran									4.17E-20	4.17E-20	0.00	0.00	8.34E-20
106467	1,4-Dichlorobenzene (p)	3.02E-03	0.04		0.02		2.74E-04						1.47E-04	0.06
100414	Ethyl benzene	0.05	0.60		0.01		4.36E-03	5.06E-03	1.92E-04				5.73E-04	0.67
106934	Ethylene dibromide	1.84E-05	2.29E-04				1.67E-06							2.49E-04
75003	Ethyl chloride (Chloroethane)	7.86E-03	0.10				7.16E-04							0.11
107062	Ethylene dichloride (1,2-Dichloroethane)	3.96E-03	0.05				3.60E-04							0.05
75343	Ethylidene dichloride (1,1-Dichloroethane)	0.02	0.28				2.07E-03							0.31
106445 106394	3 & 4-Methylphenol (Cresol)				0.30					2.29E-06	2.29E-06	3.70E-08	3.59E-06	0.30
206440	Fluoranthene													0.00E+00
86737	Fluorene									3.06E-06	3.06E-06	1.95E-09	1.28E-07	6.22E-06
50000	Formaldehyde													0.00E+00
110543	Hexane	0.06	0.59				5.03E-03		1.20E-02					0.76
7647010	Hydrochloric acid			6.16		0.68								6.84

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Summary of Hazardous Air Pollutants - Controlled Emissions Prior Project**

(continued from previous page)

Controlled PTE (TPY) - Prior Expansion														
CAS Number	Hazardous Air Pollutant	Landfill	Landfill Fugitive	Flare 3	LV1 Evap.	LV1 Comb.	LV1 LFG Residual	Parts Washer	Gas Storage	Tank 1	Tank 2	Tank 3	Oil/Water	Total HAP
193395	Indo(1,2,3-cd)pyrene													0.00E+00
71556	Methyl chloroform (1,1,1-Trichloroethane)	6.25E-03	0.08				5.69E-04							8.48E-02
108101	Methyl isobutyl ketone (MIBK) (4-Methyl-2-Pentanone)	0.02	0.23		0.03		1.66E-03			5.81E-05	5.81E-05	3.09E-07	4.07E-04	0.28
75092	Methylene chloride (Dichloromethane)	0.12	1.48				0.01							1.61
91576	2-Methylnaphthalene									6.36E-05	6.36E-05	8.69E-08	8.41E-04	9.69E-04
91203	Naphthalene				0.03					7.30E-05	7.30E-05	2.01E-07	2.30E-04	0.03
3268879	OCDD													0.00E+00
85018	Phenanthrene									3.92E-06	3.92E-06	2.70E-09	1.47E-08	7.86E-06
108952	Phenol				0.23					1.61E-06	1.61E-06	2.79E-07		0.23
78875	Propylene dichloride (1,2-Dichloropropane)	1.99E-03	0.02				1.81E-04							0.03
129000	Pyrene													0.00E+00
100425	Styrene												2.29E-05	2.29E-05
79345	1,1,2,2-Tetrachloroethane	0.02	0.23				1.65E-03							0.25
127184	Tetrachloroethylene (Perchloroethylene)	0.06	0.75				5.49E-03							0.82
108883	Toluene	0.35	4.41		9.13E-03		0.03	5.06E-03	3.99E-03				9.39E-04	4.82
79016	Trichloroethylene	0.04	0.45				3.29E-03							0.49
540841	2,2,4-Trimethylpentane								1.34E-03					1.34E-03

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**Appendix A to the Technical Support Document
Summary of Hazardous Air Pollutants - Controlled Emissions Prior Project**

(continued from previous page)

Controlled PTE (TPY) - Prior Expansion														
CAS Number	Hazardous Air Pollutant	Landfill	Landfill Fugitive	Flare 3	LV1 Evap.	LV1 Comb.	LV1 LFG Residual	Parts Washer	Gas Storage	Tank 1	Tank 2	Tank 3	Oil/Water	Total HAP
75014	Vinyl chloride	0.04	0.56				4.07E-03							0.61
75354	Vinylidene chloride (1,1-Dichloroethene)	1.89E-03	0.02				1.72E-04							0.03
1330207	Xylene	0.13	1.56		0.05		0.01	5.06E-03	1.28E-04	4.62E-04	4.62E-04	2.79E-07	1.42E-03	1.76
NA	Arsenic Compounds													0.00E+00
NA	Beryllium Compounds													0.00E+00
NA	Cadmium Compounds													0.00E+00
NA	Chromium Compounds													0.00E+00
NA	Lead Compounds													0.00E+00
NA	Manganese Compounds													0.00E+00
NA	Mercury Compounds	2.85E-04	7.14E-05				2.60E-05							3.83E-04
NA	Nickel Compounds													0.00E+00
NA	Selenium Compounds													0.00E+00
	Summary	0.98	12.28	6.16	0.69	0.68	0.09	0.02	0.02	6.74E-04	6.74E-04	1.20E-06	5.74E-03	20.92

Total HAP 20.92 TPY

Worst Case HAP - HCL 6.84 TPY

**Appendix A to the Technical Support Document (TSD)
Newton County Landfill // VOC Emissions - Prior to 2015 Expansion**

Company Name: Newton County Landfill

Address: 2266 East 500 South Road, Brook, Indiana 47922

Significant Source Modification No.: 111-35382-00017

Part 70 Operating Permit Renewal No.: T111-35606-00017

Reviewer: David Matousek

Date: August 10, 2015

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	434.90 TPY
Year of Occurrence	2010

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	816 ppmv	Tier II Testing
NMOC Emission Rate in 2004	434.90 TPY	
% VOC in NMOC	39%	(AP-42, Ch 2.4, 11/1998)
VOC Generated in Landfill	169.61 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. The Permittee proposes 80%.

Landfill Collection Efficiency	80%
Landfill VOC PTE from LandGEM	169.61 TPY
Potential to Emit VOC (Collected by Collection System and Sent to Control Device)	135.69 TPY
Fugitive VOC from Landfill, Uncollected VOC	33.92 TPY
Control Device Destruction Efficiency (Lowest)	98%
Controlled VOC Emissions = VOC to Control x (1-Destruction Efficiency)	2.71 TPY

**Appendix A to the Technical Support Document (TSD)
Newton County Landfill // VOC Emissions - After 2015 Expansion**

Company Name: Newton County Landfill

Address: 2266 East 500 South Road, Brook, Indiana 47922

Significant Source Modification No.: 111-35382-00017

Part 70 Operating Permit Renewal No.: T111-35606-00017

Reviewer: David Matousek

Date: August 10, 2015

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	897.70 TPY
Year of Occurrence	2062

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	816 ppmv	Tier II Testing
NMOC Emission Rate in 2004	897.70 TPY	
% VOC in NMOC	39%	(AP-42, Ch 2.4, 11/1998)
 VOC Generated in Landfill	 350.10 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 assumed. The Permittee proposes 80%.

Landfill Collection Efficiency	80%
Landfill VOC PTE from LandGEM	350.10 TPY
 Potential to Emit VOC (Collected by Collection System and Sent to Control Device)	 280.08 TPY
Fugitive VOC from Landfill, Uncollected VOC	70.02 TPY
 Control Device Destruction Efficiency (Lowest)	 98%
 Controlled VOC Emissions = VOC to Control x (1-Destruction Efficiency)	 5.6 TPY

**Appendix A to the Technical Support Document (TSD)
CO and HAP Emissions - Prior to 2015 Expansion**

Company Name: Newton County Landfill

Address: 2266 East 500 South Road, Brook, Indiana 47922

Significant Source Modification No.: 111-35382-00017

Part 70 Operating Permit Renewal No.: T111-35606-00017

Reviewer: David Matousek

Date: August 10, 2015

LFG Temperature	536.67 °R
LFG Pressure	1.00 atm
Maximum LFG Generation	9,081.00 SCFM (2010)
Collection Efficiency	80%
Maximum Captured LFG	7,264.80 SCFM (2010)

PTE of Carbon Monoxide						
Pollutant	Molecular Weight	Concentration (ppmv)	Pollutant Flow (SCFM)	Landfill Emission (TPY)	Control Efficiency	Controlled PTE (TPY)
CO	28.01	141	1.0243	19.25	98%	0.39

PTE of Hazardous Air Pollutants (HAPs)						
Pollutant	Molecular Weight	Concentration (ppmv)	Pollutant Flow (SCFM)	Landfill Emission (TPY)	Control Efficiency	Controlled PTE (TPY)
1,1,1-Trichloroethane	133.41	0.48	0.00349	0.31233	98%	6.2466E-03
1,1,2,2-Tetrachloroethane	167.85	1.11	0.00806	0.90751	98%	0.02
1,1-Dichloroethane	98.97	2.35	0.01707	1.13327	98%	0.02
1,1-Dichloroethene	96.94	0.20	0.00145	0.09429	98%	1.8858E-03
1,2-Dichloroethane	98.96	0.41	0.00298	0.19782	98%	3.9564E-03
1,2-Dichloropropane	112.99	0.18	0.00131	0.09929	98%	1.9858E-03
Acrylonitrile	53.06	6.33	0.04599	1.63691	98%	0.03
Benzene (1.91 or 11.1)	78.11	1.91	0.01388	0.72726	98%	0.01
Carbon Disulfide	76.13	0.58	0.00421	0.215	98%	4.3000E-03
Carbon Tetrachloride	153.84	0.004	2.906E-05	0.003	98%	6.0000E-05
Carbonyl Sulfide	60.07	0.49	0.00356	0.14345	98%	2.8690E-03
Chlorobenzene	112.56	0.25	0.00182	0.13742	98%	2.7484E-03
Chloroethane	64.52	1.25	0.00908	0.39298	98%	7.8596E-03
Chloroform	119.39	0.03	0.00022	0.01762	98%	3.5240E-04
Dichlorobenzene	147	0.21	0.00153	0.15087	98%	3.0174E-03
Dichloromethane	84.94	14.3	0.10389	5.91945	98%	0.12
Ethylbenzene	106.16	4.61	0.03349	2.38491	98%	0.05
Ethylene Dibromide	187.88	0.001	7.265E-06	0.00092	98%	1.8400E-05
Hexane	86.18	6.57	0.04773	2.75926	98%	0.06
Mercury	200.61	2.92E-04	2.121E-06	2.85E-04	0%	2.8542E-04
Methyl Isobutyl Ketone	100.16	1.87	0.01359	0.91308	98%	0.02
Perchloroethylene	165.83	3.73	0.02710	3.01459	98%	0.06
Toluene (39.3 or 165)	92.13	39.3	0.28551	17.64483	98%	0.35
Trichloroethylene	131.40	2.82	0.02049	1.80606	98%	0.04
Vinyl Chloride	62.5	7.34	0.05332	2.23545	98%	0.04
Xylene	106.16	12.1	0.08790	6.25958	98%	0.13

17.64	Highest HAP	0.35
49.11	Total HAP	0.98

Methodology:

- Pollutant Flow (SCFM) = Max. Captured LFG (SCFM) x Concentration (ppmv) / 1,000,000
- 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)
CO and HAP Emissions after 2015 Expansion**

Company Name: Newton County Landfill

Address: 2266 East 500 South Road, Brook, Indiana 47922

Significant Source Modification No.: 111-35382-00017

Part 70 Operating Permit Renewal No.: T111-35606-00017

Reviewer: David Matousek

Date: August 10, 2015

LFG Temperature	536.67 °R
LFG Pressure	1.00 atm
Maximum LFG Generation	18,750.00 SCFM (2062)
Collection Efficiency	80%
Maximum Captured LFG	15,000.00 SCFM (2062)

PTE of Carbon Monoxide						
Pollutant	Molecular Weight	Concentration (ppmv)	Pollutant Flow (SCFM)	Landfill Emission (TPY)	Control Efficiency	Controlled PTE (TPY)
CO	28.01	141	2.115	39.74	98%	0.79

PTE of Hazardous Air Pollutants (HAPs)						
Pollutant	Molecular Weight	Concentration (ppmv)	Pollutant Flow (SCFM)	Landfill Emission (TPY)	Control Efficiency	Controlled PTE (TPY)
1,1,1-Trichloroethane	133.41	0.48	0.00720	0.6443	98%	0.01
1,1,2,2-Tetrachloroethane	167.85	1.11	0.01665	1.8747	98%	0.04
1,1-Dichloroethane	98.97	2.35	0.03525	2.3402	98%	0.05
1,1-Dichloroethene	96.94	0.20	0.00300	0.1951	98%	3.9016E-03
1,2-Dichloroethane	98.96	0.41	0.00615	0.4083	98%	0.01
1,2-Dichloropropane	112.99	0.18	0.00270	0.2046	98%	4.0928E-03
Acrylonitrile	53.06	6.33	0.09495	3.3795	98%	0.07
Benzene (1.91 or 11.1)	78.11	1.91	0.02865	1.5012	98%	0.03
Carbon Disulfide	76.13	0.58	0.00870	0.4443	98%	0.01
Carbon Tetrachloride	153.84	0.004	6.000E-05	0.0062	98%	1.2380E-04
Carbonyl Sulfide	60.07	0.49	0.00735	0.2962	98%	5.9234E-03
Chlorobenzene	112.56	0.25	0.00375	0.2832	98%	5.6630E-03
Chloroethane	64.52	1.25	0.01875	0.8115	98%	0.02
Chloroform	119.39	0.03	0.00045	0.0360	98%	7.2080E-04
Dichlorobenzene	147	0.21	0.00315	0.3106	98%	6.2124E-03
Dichloromethane	84.94	14.3	0.21450	12.2218	98%	0.24
Ethylbenzene	106.16	4.61	0.06915	4.9243	98%	0.10
Ethylene Dibromide	187.88	0.001	1.500E-05	0.0019	98%	3.7800E-05
Hexane	86.18	6.57	0.09855	5.6972	98%	0.11
Mercury	200.61	2.92E-04	4.380E-06	5.89E-04	0%	5.89E-04
Methyl Isobutyl Ketone	100.16	1.87	0.02805	1.8846	98%	3.7692E-02
Perchloroethylene	165.83	3.73	0.05595	6.2238	98%	0.12
Toluene (39.3 or 165)	92.13	39.3	0.58950	36.4318	98%	0.73
Trichloroethylene	131.40	2.82	0.04230	3.7285	98%	0.07
Vinyl Chloride	62.5	7.34	0.11010	4.6160	98%	0.09
Xylene	106.16	12.1	0.18150	12.9251	98%	0.26
				36.43	Highest HAP	0.73
				101.39	Total HAP	2.03

Methodology:

- Pollutant Flow (SCFM) = Max. Captured LFG (SCFM) x Concentration (ppmv) / 1,000,000
- 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 Fugitive HAP Emissions**

Company Name: Newton County Landfill
Address: 2266 East 500 South Road, Brook, Indiana 47922
Significant Source Modification No.: 111-35382-00017
Part 70 Operating Permit Renewal No.: T111-35606-00017
Reviewer: David Matousek
Date: August 10, 2015

Landfill Fugitive Emissions - Net Change due to Expansion

Temperature	536.67 °R
Landfill Gas Pressure	1.00 atm
Landfill Collection Efficiency	80% (provided by Permittee)
Peak Landfill Gas Generation - After Expansion	18,750 SCFM
Peak Landfill Gas Generation - Prior to Expansion	9,081 SCFM
Fugitive Landfill Gas - After Expansion	3,750.00 SCFM
Fugitive Landfill Gas - Prior to Expansion	1,816.20 SCFM

Fugitive HAP Emissions						
AP-42, Ch. 2.4, Table 2.4-1 and 2, November 1998						
Pollutant	Concentration (ppmv)	Molecular Weight	Prior to Expansion		After Expansion	
			Pollutant Flow (SCFM)	Landfill PTE (TPY)	Pollutant Flow (SCFM)	Landfill PTE (TPY)
1,1,1-Trichloroethane	0.48	133.41	0.00087	0.07802	0.00180	0.16109
1,1,2,2-Tetrachloroethane	1.11	167.85	0.00202	0.22699	0.00416	0.46867
1,1-Dichloroethane	2.35	98.97	0.00427	0.28335	0.00881	0.58506
1,1-Dichloroethene	0.20	96.94	0.00036	0.02362	0.00075	0.04877
1,2-Dichloroethane	0.41	98.96	0.00074	0.04943	0.00154	0.10206
1,2-Dichloropropane	0.18	112.99	0.00033	0.02478	0.00068	0.05116
1,4-Dichlorobenzene(p)	0.21	147.00	0.00038	0.03761	0.00079	0.07765
Acrylonitrile	6.33	53.06	0.01150	0.40919	0.02374	0.84488
Benzene (1.91 or 11.1)	1.91	78.11	0.00347	0.18176	0.00716	0.37529
Carbon Disulfide	0.58	76.13	0.00105	0.05380	0.00218	0.11107
Carbon Tetrachloride	4.00E-03	153.84	0.00001	0.00075	0.00002	0.00155
Carbonyl Sulfide	0.49	60.07	0.00089	0.03586	0.00184	0.07404
Chlorobenzene	0.25	112.56	0.00045	0.03428	0.00094	0.07079
Chloroethane	1.25	64.52	0.00227	0.09826	0.00469	0.20288
Chloroform	0.03	119.39	0.00005	0.00436	0.00011	0.00901
Dichloromethane	14.30	84.94	0.02597	1.47981	0.05363	3.05545
Ethylbenzene	4.61	106.16	0.00837	0.59624	0.01729	1.23109
Ethylene Dibromide	0.001	187.88	0.00000	0.00023	0.00000	0.00047
Hexane	6.57	86.18	0.01193	0.68981	0.02464	1.42429
Mercury	2.92E-04	200.61	0.00000	0.00007	0.00000	0.00015
Methyl Isobutyl Ketone	1.87	100.16	0.00340	0.22819	0.00701	0.47115
Perchloroethylene	3.73	165.83	0.00677	0.75358	0.01399	1.55596
Toluene (39.3 or 165)	39.30	92.13	0.07138	4.41116	0.14738	9.10794
Trichloroethylene	2.82	131.40	0.00512	0.45144	0.01058	0.93212
Vinyl Chloride	7.34	62.50	0.01333	0.55890	0.02753	1.15399
Xylenes	12.10	106.16	0.02198	1.56497	0.04538	3.23127
Combined HAP (TPY) =			12.28		25.35	

Net Change in Combined HAP = 13.07 TPY

Net Change in Single HAP (Toluene) = 4.70 TPY

Methodology:

- Pollutant Flow (SCFM) = Captured LFG flow (SCFM) x concentration (ppmv) / 1,000,000
- Landfill Emission (TPY) = 360 x Pollutant Flow (SCFM) x M.W. (lb/lb-mole) x Pressure (atm) / Temperature (°R) [AP-42, Ch. 2.4, Eq. 4 Converted]
- Controlled Emissions (TPY) = Landfill Emission (TPY) x (1 - Control Efficiency)
- Maximum Captured LFG (SCFM) = Maximum LandGEM LFG (SCFM) x Capture Efficiency

Notes:

- There are variations in landfill gas constituents between AP-42, Ch. 2.4 (1998 Version), AP-42, Ch. 2.4 (2008 Version) and LandGEM (Version 3.02).

Appendix A to the Technical Support Document (TSD) Potential to Emit - Flare - Emission Unit #3

Company Name: Newton County Landfill

Address: 2266 East 500 South Road, Brook, Indiana 47922

Significant Source Modification No.: 111-35382-00017

Part 70 Operating Permit Renewal No.: T111-35606-00017

Reviewer: David Matousek

Date: August 10, 2015

Calculation Basis

Flare Heat Input Capacity	163.62 MMBtu/hr	Molecular Weight (H ₂ S)	34.08 lb/lb.mole
Heating Value of Landfill Gas	454.50 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	6,000 SCFM	% 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)			
6,000.00 SCFM	5,802.00 DSCFM	50.00%	2,901.00 SCFM	or	1,524.77	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			1,524.77 MMCF/yr, CH ₄ dry	17.0 lb/MMCF, CH ₄ dry	12.96	AP-42, Ch. 2.4, Table 2.4-5, 11/98		
PM ₁₀			1,524.77 MMCF/yr, CH ₄ dry	17.0 lb/MMCF, CH ₄ dry	12.96	Assumed the same as PM		
Direct PM _{2.5}			1,524.77 MMCF/yr, CH ₄ dry	17.0 lb/MMCF, CH ₄ dry	12.96	Assumed the same as PM		
H ₂ S	300.0	1.8000			41.15	Applicant Estimate		
SO ₂					77.35	= H ₂ S(TPY) x MW SO ₂ / MW H ₂ S		
CL ⁻	42.00	0.2520			5.99	AP-42, Ch. 2.4, 11/98, default value		
HCL					6.16	=CL ⁻ (TPY) x MW HCL / MW CL ⁻		
VOC			163.62 MMBtu/hr	0.0058 lb/MMBtu	4.16	Applicant Estimate		
CO			163.62 MMBtu/hr	0.20 lb/MMBtu	143.33	Applicant Estimate (32.72 lb/hr)		
NO _x			163.62 MMBtu/hr	0.068 lb/MMBtu	48.73	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 - Flare - Emission Unit #4**

Company Name: Newton County Landfill
Address: 2266 East 500 South Road, Brook, Indiana 47922
Significant Source Modification No.: 111-35382-00017
Part 70 Operating Permit Renewal No.: T111-35606-00017
Reviewer: David Matousek
Date: August 10, 2015

Calculation Basis			
Flare Heat Input Capacity	150.0 MMBtu/hr	Molecular Weight (H ₂ S)	34.08 lb/lb.mole
Heating Value of Landfill Gas	454.50 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	5,500 SCFM	% 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)
5,500.00 SCFM	5,318.50 DSCFM	50.00%	2,659.25 SCFM or 1,397.70 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			1,397.70 MMCF/yr, CH ₄ dry	17.0 lb/MMCF, CH ₄ dry	11.88	AP-42, Ch. 2.4, Table 2.4-5, 11/98	
PM10			1,397.70 MMCF/yr, CH ₄ dry	17.0 lb/MMCF, CH ₄ dry	11.88	Assumed the same as PM	
Direct PM2.5			1,397.70 MMCF/yr, CH ₄ dry	17.0 lb/MMCF, CH ₄ dry	11.88	Assumed the same as PM	
H ₂ S	300.0	1.6500			37.72	Applicant from Site Testing	
SO ₂					70.90	= H ₂ S(TPY) x MW SO ₂ / MW H ₂ S	
CL ⁻	42.0	0.2310			5.49	AP-42, Ch. 2.4, 11/98, default value	
HCL					5.65	=CL ⁻ (TPY) x MW HCL / MW CL ⁻	
VOC			150.00 MMBtu/hr	0.0058 lb/MMBtu	3.81	Applicant Estimate	
CO			150.00 MMBtu/hr	0.10 lb/MMBtu	65.70	Applicant Estimate (15.0 lb/hr)	
NO _x			150.00 MMBtu/hr	0.068 lb/MMBtu	44.68	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)
VOC and HAP - Leachate Ultrafilter Treatment System - Water9 Method**

Company Name: Newton County Landfill

Address: 2266 East 500 South Road, Brook, Indiana 47922

Significant Source Modification No.: 111-35382-00017

Part 70 Operating Permit Renewal No.: T111-35606-00017

Reviewer: David Matousek

Date: August 10, 2015

Treatment System Capacity

250,000 GPD

0.250 MGD

					Reaction Tank A (LT-1)		
Pollutant	Leachate Concentration (ppm)	Leachate Mass (lb/day)	VOC	HAP	Water9 Air Fraction	PTE VOC (TPY)	PTE HAP (TPY)
Acenaphthene	0.103	0.21	YES	YES	0.00408	1.599E-04	1.599E-04
Acetone	31.100	64.84	NO	NO	0.01317		
Benzoic Acid	9.940	20.72	YES	YES	1.119E-06	4.232E-06	4.232E-06
Benzyl Alcohol	0.060	0.13	YES	NO	1.052E-05	2.402E-07	
Cresol, total (o-, p-, m-)	6.419	13.38	YES	YES	4.195E-04	1.025E-03	1.025E-03
Dibenzofuran	0.057	0.12	YES	YES	2.692E-24	5.839E-26	5.839E-26
Methyl Ethyl Ketone (MEK)	25.900	54.00	YES	NO	0.01178	0.12	
Methyl Isobutyl Ketone (MIBK)	0.663	1.38	YES	YES	0.10792	2.723E-02	2.723E-02
Methylnaphthalene, 2-	0.274	0.57	YES	YES	0.01501	1.565E-03	1.565E-03
Naphthalene	0.419	0.87	YES	YES	0.22095	3.523E-02	3.523E-02
Phenanthrene	0.062	0.13	YES	YES	0.00097	2.288E-05	2.288E-05
Phenol	4.010	8.36	YES	YES	0.00014	2.136E-04	2.136E-04
Xylene, total	0.502	1.05	YES	YES	0.17764	3.393E-02	3.393E-02
		165.78				0.22	0.10

					Reaction Tank B (LT-2)		
Pollutant	Leachate Concentration (ppm)	Leachate Mass (lb/day)	VOC	HAP	Water9 Air Fraction	PTE VOC (TPY)	PTE HAP (TPY)
Acenaphthene	0.103	0.21	YES	YES	0.00408	1.599E-04	1.599E-04
Acetone	31.100	64.84	NO	NO	0.01317		
Benzoic Acid	9.940	20.72	YES	YES	1.119E-06	4.232E-06	4.232E-06
Benzyl Alcohol	0.060	0.13	YES	NO	1.052E-05	2.402E-07	
Cresol, total (methylphenol)	6.419	13.38	YES	YES	4.195E-04	1.025E-03	1.025E-03
Dibenzofuran	0.057	0.12	YES	YES	2.692E-24	5.839E-26	5.839E-26
Methyl Ethyl Ketone (MEK)	25.900	54.00	YES	NO	0.01178	0.12	
Methyl Isobutyl Ketone (MIBK)	0.663	1.38	YES	YES	0.10792	2.723E-02	2.723E-02
Methylnaphthalene, 2-	0.274	0.57	YES	YES	0.01501	1.565E-03	1.565E-03
Naphthalene	0.419	0.87	YES	YES	0.22095	3.523E-02	3.523E-02
Phenanthrene	0.062	0.13	YES	YES	0.00097	2.288E-05	2.288E-05
Phenol	4.010	8.36	YES	YES	0.00014	2.136E-04	2.136E-04
Xylene, total	0.502	1.05	YES	YES	0.17764	3.393E-02	3.393E-02
		165.78				0.22	0.10

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Appendix A to the Technical Support Document (TSD)
VOC and HAP - Leachate Ultrafilter Treatment System - Water9 Method

(continued from previous page)

					Reaction Effluent Tank (LT-3)		
Pollutant	Leachate Concentration (ppm)	Leachate Mass (lb/day)	VOC	HAP	Water9 Air Fraction	PTE VOC (TPY)	PTE HAP (TPY)
Acenaphthene	0.1022	0.21	YES	YES	0.0003	1.167E-05	1.167E-05
Acetone	30.2900	63.15	NO	NO	0.0008		
Benzoic Acid	9.9400	20.72	YES	YES	1.237E-07	4.679E-07	4.679E-07
Benzyl Alcohol	0.0600	0.13	YES	NO	1.161E-06	2.651E-08	
Cresol, total (methylphenol)	6.4160	13.38	YES	YES	1.025E-04	2.502E-04	2.502E-04
Dibenzofuran	0.0570	0.12	YES	YES	2.974E-25	6.450E-27	6.450E-27
Methyl Ethyl Ketone (MEK)	25.2900	52.73	YES	NO	0.00072	6.929E-03	
Methyl Isobutyl Ketone (MIBK)	0.5276	1.10	YES	YES	0.00088	1.767E-04	1.767E-04
Methylnaphthalene, 2-	0.2658	0.55	YES	YES	0.00061	6.170E-05	6.170E-05
Naphthalene	0.2543	0.53	YES	YES	0.00088	8.515E-05	8.515E-05
Phenanthrene	0.0619	0.13	YES	YES	9.612E-05	2.264E-06	2.264E-06
Phenol	4.0090	8.36	YES	YES	3.877E-05	5.914E-05	5.914E-05
Xylene, total	0.3395	0.71	YES	YES	0.00096	1.240E-04	1.240E-04
		161.82				7.70E-03	7.71E-04

					Ultrafilter Process Feed Tank (LT-4)		
Pollutant	Leachate Concentration (ppm)	Leachate Mass (lb/day)	VOC	HAP	Water9 Air Fraction	PTE VOC (TPY)	PTE HAP (TPY)
Acenaphthene	0.1021	0.21	YES	YES	0.00134	5.206E-05	5.206E-05
Acetone	30.2600	63.09	NO	NO	0.00366		
Benzoic Acid	9.9400	20.72	YES	YES	5.332E-07	2.017E-06	2.017E-06
Benzyl Alcohol	0.0600	0.13	YES	NO	5.004E-06	1.142E-07	
Cresol, total (methylphenol)	6.4160	13.38	YES	YES	4.440E-04	1.084E-03	1.084E-03
Dibenzofuran	0.0570	0.12	YES	YES	1.283E-24	2.783E-26	2.783E-26
Methyl Ethyl Ketone (MEK)	25.2800	52.71	YES	NO	0.00331	0.03	
Methyl Isobutyl Ketone (MIBK)	0.5272	1.10	YES	YES	0.00408	8.185E-04	8.185E-04
Methylnaphthalene, 2-	0.2657	0.55	YES	YES	0.00276	2.790E-04	2.790E-04
Naphthalene	0.2541	0.53	YES	YES	0.0041	3.964E-04	3.964E-04
Phenanthrene	0.0619	0.13	YES	YES	4.20E-04	9.893E-06	9.893E-06
Phenol	4.0090	8.36	YES	YES	1.70E-04	2.593E-04	2.593E-04
Xylene, total	0.3392	0.71	YES	YES	0.00449	5.795E-04	5.795E-04
		161.74				0.04	3.48E-03

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**Appendix A to the Technical Support Document (TSD)
VOC and HAP - Leachate Ultrafilter Treatment System - Water9 Method**

(continued from previous page)

					Ultrafilter (UF-1000 and UF-1100)		
Pollutant	Leachate Concentration (ppm)	Leachate Mass (lb/day)	VOC	HAP	Water9 Air Fraction	PTE VOC (TPY)	PTE HAP (TPY)
Acenaphthene	0.1020	0.21	YES	YES	0.001	3.881E-05	3.881E-05
Acetone	30.1500	62.86	NO	NO	0.00272		
Benzoic Acid	9.9400	20.72	YES	YES	4.010E-07	1.517E-06	1.517E-06
Benzyl Alcohol	0.0600	0.13	YES	NO	3.763E-06	8.591E-08	
Cresol, total (methylphenol)	6.4140	13.37	YES	YES	3.405E-04	8.310E-04	8.310E-04
Dibenzofuran	0.0570	0.12	YES	YES	9.645E-25	2.092E-26	2.092E-26
Methyl Ethyl Ketone (MEK)	25.1900	52.52	YES	NO	0.00246	2.358E-02	
Methyl Isobutyl Ketone (MIBK)	0.5250	1.09	YES	YES	0.00302	6.033E-04	6.033E-04
Methylnaphthalene, 2-	0.2649	0.55	YES	YES	0.00206	2.076E-04	2.076E-04
Naphthalene	0.2530	0.53	YES	YES	0.00304	2.927E-04	2.927E-04
Phenanthrene	0.0619	0.13	YES	YES	3.10E-04	7.302E-06	7.302E-06
Phenol	4.0080	8.36	YES	YES	1.30E-04	1.983E-04	1.983E-04
Xylene, total	0.3376	0.70	YES	YES	0.00333	4.278E-04	4.278E-04
		161.30				0.03	2.61E-03

					Permeate Lift Tank (LT-5)		
Pollutant	Leachate Concentration (ppm)	Leachate Mass (lb/day)	VOC	HAP	Water9 Air Fraction	PTE VOC (TPY)	PTE HAP (TPY)
Acenaphthene	0.1019	0.21	YES	YES	0.0003	1.163E-05	1.163E-05
Acetone	30.0700	62.70	NO	NO	0.0008		
Benzoic Acid	9.9400	20.72	YES	YES	1.237E-07	4.679E-07	4.679E-07
Benzyl Alcohol	0.0600	0.13	YES	NO	1.161E-06	2.651E-08	
Cresol, total (methylphenol)	6.4140	13.37	YES	YES	1.025E-04	2.502E-04	2.502E-04
Dibenzofuran	0.0570	0.12	YES	YES	2.974E-25	6.450E-27	6.450E-27
Methyl Ethyl Ketone (MEK)	25.1300	52.40	YES	NO	0.00072	6.885E-03	
Methyl Isobutyl Ketone (MIBK)	0.5234	1.09	YES	YES	0.00088	1.753E-04	1.753E-04
Methylnaphthalene, 2-	0.2644	0.55	YES	YES	0.00061	6.137E-05	6.137E-05
Naphthalene	0.2523	0.53	YES	YES	0.00088	8.448E-05	8.448E-05
Phenanthrene	0.0618	0.13	YES	YES	9.61E-05	2.261E-06	2.261E-06
Phenol	4.0080	8.36	YES	YES	3.88E-05	5.913E-05	5.913E-05
Xylene, total	0.3365	0.70	YES	YES	0.00096	1.229E-04	1.229E-04
		161.00				7.65E-03	7.68E-04

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**Appendix A to the Technical Support Document (TSD)
VOC and HAP - Leachate Ultrafilter Treatment System - Water9 Method**

(continued from previous page)

Pollutant	Leachate Concentration (ppm)	Leachate Mass (lb/day)	VOC	HAP	Effluent Storage Tank (EST-1)		
					Water9 Air Fraction	PTE VOC (TPY)	PTE HAP (TPY)
Acenaphthene	0.1019	0.21	YES	YES	0.6375	0.02	0.02
Acetone	30.0500	62.65	NO	NO	0.47558		
Benzoic Acid	9.9400	20.72	YES	YES	5.000E-04	1.89E-03	1.89E-03
Benzyl Alcohol	0.0600	0.13	YES	NO	4.680E-03	1.07E-04	
Cresol, total (methylphenol)	6.4140	13.37	YES	YES	4.640E-02	0.11	0.11
Dibenzofuran	0.0570	0.12	YES	YES	1.204E-21	2.61E-23	2.61E-23
Methyl Ethyl Ketone (MEK)	25.1100	52.35	YES	NO	0.47645	4.55	
Methyl Isobutyl Ketone (MIBK)	0.5230	1.09	YES	YES	0.90105	0.18	0.18
Methylnaphthalene, 2-	0.2642	0.55	YES	YES	0.86277	8.67E-02	0.09
Naphthalene	0.2520	0.53	YES	YES	0.95761	0.09	0.09
Phenanthrene	0.0618	0.13	YES	YES	0.30095	7.08E-03	7.08E-03
Phenol	4.0070	8.35	YES	YES	1.22E-02	0.02	0.02
Xylene, total	0.3362	0.70	YES	YES	0.98842	0.13	0.13
		160.91				5.20	0.65

Process Summary				
Process	PTE VOC (TPY)	PTE Naphthalene (TPY)	PTE MIBK (TPY) ⁽¹⁾	PTE Combined HAP (TPY)
Reaction Tank A (LT-1)	0.22	0.04	0.03	0.10
Reaction Tank B (LT-2)	0.22	0.04	0.03	0.10
Reaction Effluent Tank (LT-3)	7.70E-03	8.515E-05	1.767E-04	7.71E-04
Ultrafiltration Process Tank (LT-4)	0.04	3.964E-04	8.185E-04	3.48E-03
Ultrafilter (UF-1000 and UF-1100)	0.03	2.927E-04	6.033E-04	2.61E-03
Permeate Lift Tank (LT-5)	7.65E-03	8.448E-05	1.753E-04	7.68E-04
Effluent Storage Tank (EST-1)	5.20	0.09	0.18	0.65
Total for Process	5.71	0.16	0.24	0.86

(1) Methyl Isobutyl Ketone (MIBK) is the worst case HAP.

**Appendix A to the Technical Support Document (TSD)
Emission Calculations - Pug Mill System**

Company Name: Newton County Landfill

Address: 2266 East 500 South Road, Brook, Indiana 47922

Significant Source Modification No.: 111-35382-00017

Part 70 Operating Permit Renewal No.: T111-35606-00017

Reviewer: David Matousek

Date: August 10, 2015

Unloading to Silo - Baghouse DC1							
Pollutant	Throughput (ton/hr)	Emission Factor	Uncontrolled PTE (TPY)	Control Efficiency	Controlled PTE (TPY)	Limited PTE (TPY)	Source
PM	40.50	3.14 lb/ton	557.00	91.54%	47.10	47.10	AP-42, Ch. 11.12, Table 11.12-2
PM10		1.10 lb/ton	195.13		16.50	16.50	
Direct PM2.5		1.10 lb/ton	195.13		16.50	16.50	

Pug Mill - Baghouse DC2							
Pollutant	Throughput (ton/hr)	Emission Factor	Uncontrolled PTE (TPY)	Control Efficiency	Controlled PTE (TPY)	Limited PTE (TPY)	Source
PM	40.50	0.57 lb/ton	101.11	91.54%	8.55	8.55	AP-42, Ch. 11.12, Table 11.12-2
PM10		0.16 lb/ton	28.38		2.40	2.40	
Direct PM2.5		0.16 lb/ton	28.38		2.40	2.40	

PTE Pug Mill - Total Process Emissions (TPY)			
Pollutant	Unloading	Pug Mill	Total for Process
PM	557.00	101.11	658.12
PM10	195.13	28.38	223.51
Direct PM2.5	195.13	28.38	223.51

Limited Pug Mill - Total Process Emissions (TPY)			
Pollutant	Unloading	Pug Mill	Total for Process
PM	47.10	8.55	55.65
PM10	16.50	2.40	18.90
Direct PM2.5	16.50	2.40	18.90

Methodology:

- 1) PTE (TPY) = Throughput (ton/hr) x Emission Factor (lb/ton) x 4.38 ton-hr/lb-yr
- 2) Controlled PTE (TPY) = PTE (TPY) x (1 - control efficiency)
- 3) Limited PTE (TPY) is set by a numerical limit in an enforceable permit condition. See permit.
- 4) The Permittee claims a bottleneck on the process. The pug mill processes 2,700 lb material/batch and 30 batches per hour.

**Appendix A to the Technical Support Document (TSD)
HAP and VOC Emissions from Leachate Evaporation (LV1)**

Company Name: Newton County Landfill

Address: 2266 East 500 South Road, Brook, Indiana 47922

Significant Source Modification No.: 111-35382-00017

Part 70 Operating Permit Renewal No.: T111-35606-00017

Reviewer: David Matousek

Date: August 10, 2015

Design Basis:

30,000 gallons per day
10,950,000 gallon/yr

HAP and VOC Emissions - Leachate Evaporation - 100% Flash Off					
CAS No.	Pollutant	HAP	Concentration (mg/l)	HAP Emissions (TPY)	VOC Emissions (TPY)
65850	Benzoic Acid	No	27.40		1.2513
71432	Benzene	Yes	0.15	0.0069	0.0069
78933	Methyl Ethyl Ketone	No	16.10		0.7352
91203	Naphthalene	Yes	0.64	0.0292	0.0292
91576	2-Methylnaphthalene	No	0.12		0.0055
95636	1,2,4-Trimethylbenzene	No	0.72		0.0329
98828	Cumene	Yes	0.10	0.0046	0.0046
99876	4-Isopropyltoluene	No	0.94		0.0429
100414	Ethyl Benzene	Yes	0.28	0.0128	0.0128
100516	Benzyl Alcohol	No	2.07		0.0945
103651	N-Propylbenzene	No	0.10		0.0046
104518	N-Butylbenzene	No	0.06		0.0027
106445	3 & 4-Methylphenol	Yes	6.46	0.2950	0.2950
106467	1,4-Dichlorobenzene	Yes	0.41	0.0187	0.0187
108101	4-Methyl-2-Pentanone	Yes	0.70	0.0320	0.0320
108678	1,3,5-Trimethylbenzene	No	0.19		0.0087
108883	Toluene	Yes	0.20	0.0091	0.0091
108952	Phenol	Yes	5.14	0.2347	0.2347
1330207	Xylene	Yes	1.07	0.0489	0.0489
Total				0.69	2.87

Notes:

- 1) Leachate composition was determined by sampling. The concentrations shown are the highest detectable encountered during calendar years 2012, 2013, and 2014.
- 2) PTE (TPY) = Concentration (mg/l) x 8.34 lb/gallon x Flow (MGD) x 365 day/yr x 1 ton /2,000 lb
- 3) The Permittee assumed all VOC/HAP is volatilized and is emitted.

**Appendix A to the Technical Support Document (TSD)
Combustion Emissions from Leachate Evaporator**

Company Name: Newton County Landfill

Address: 2266 East 500 South Road, Brook, Indiana 47922

Significant Source Modification No.: 111-35382-00017

Part 70 Operating Permit Renewal No.: T111-35606-00017

Reviewer: David Matousek

Date: August 10, 2015

Calculation Basis

Maximum Heat Input Capacity	13.00 MMBtu/hr	Molecular Weight (S)	32.07 lb/lb.mole
Heating value calculated at 37% methane	327.29 MMBtu/MMCF	Molecular Weight (SO ₂)	64.06 lb/lb.mole
Inlet Gas Temperature	536.67 °R	Molecular Weight (CL)	35.453 lb/lb.mole
Inlet Gas Pressure	1.00 atm	Molecular Weight (HCL)	36.458 lb/lb.mole
Worst Case Landfill Gas Flow (37% methane)	662 SCFM	Molecular Weight (Hexane)	86.175 lb/lb.mole
Volume % Water in Landfill Gas (Saturated Gas)	3.33%		

Methane Flow Rate at PTE

Landfill Gas Flow Rate, Wet Basis	Landfill Gas Flow Rate, Dry Basis	Volume % Methane	Methane Flow Rate (Dry Basis)		
662.00 SCFM	639.96 DSCFM	37.00%	236.78 SCFM	or	124.45 MMCF Methane / year, dry

Uncontrolled Potential to Emit Calculation for Evaporator Excluding Particulate

Pollutant	Concentration (ppmv)	Pollutant Flow (SCFM)	Throughput		Emission Factor		PTE (TPY)	Emission Factor Sources
Sulfur	300	0.1986					4.27	Site Testing
SO ₂							8.53	= TPY S x (MW SO ₂ / MW S)
VOC	4.64	0.0031					0.18	VOC = 39% NMOC (595), 98% Control
CO			13.00	MMBtu/hr	0.20	lb/MMBtu	11.39	manufacturer specification
NO _x			13.00	MMBtu/hr	0.06	lb/MMBtu	3.42	manufacturer specification
CL	42	0.0278					0.66	AP-42, Ch. 2.4, 11/98, default
HCL							0.68	= TPY CL x (MW HCL / MW CL)

Methodology:

- Methane Flow Rate = Flare Gas Flow Rate x (% Methane)
- AP-42 does not include emission factors for PM10 or PM2.5. They were assumed the same as PM.
- DSCFM = SCFM x (1 - % Water)
- Pollutant Flow (SCFM) = [Total Landfill Gas Flow (SCFM)] x [ppmv pollutant / 1,000,000]
- 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]
- PTE (TPY) = Heat Input (MMBtu/hr) x Emission Factor (lb/MMBtu) x [4.38 hr-ton/lb-yr]
- 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
- The Permittee provided information with the application that the methane content can vary from 662 SCFM at 37% methane to 384 SCFM at 62% methane. IDEM, OAQ is using the worst case design flow of 662 SCFM at 37% methane. The flare is constrained to a maximum heat input of 13 MMBtu/hr.

**Appendix A to the Technical Support Document (TSD)
Residual HAP and CO from Landfill Gas Combustion in LE1**

Company Name: Newton County Landfill

Address: 2266 East 500 South Road, Brook, Indiana 47922

Significant Source Modification No.: 111-35382-00017

Part 70 Operating Permit Renewal No.: T111-35606-00017

Reviewer: David Matousek

Date: August 10, 2015

Temperature

536.67 °R

Landfill Gas Pressure

1.00 atm

Worst Case Landfill Gas Usage in Evaporator (37% Methane)

662.00 SCFM

Landfill Potential to Emit Carbon Monoxide						
Pollutant	Molecular Weight	Concentration (ppmv)	Pollutant Flow (SCFM)	CO in Fuel LFG (TPY)	Control Efficiency	Residual CO from LFG (TPY)
CO at 662 SCFM	28.01	141.00	0.0933	1.75	98%	0.04

PTE of Hazardous Air Pollutants - AP-42, Ch. 2.4, Table 2.4-1 and 2, November 1998						
Pollutant	Concentration (ppmv)	Molecular Weight	Pollutant Flow (SCFM)	HAP in Fuel LFG (TPY)	Control Efficiency	Residual HAP from LFG (TPY)
1,1,1-Trichloroethane	0.48	133.41	0.00032	0.02844	98%	0.00057
1,1,2,2-Tetrachloroethane	1.11	167.85	0.00073	0.08274	98%	0.00165
1,1-Dichloroethane	2.35	98.97	0.00156	0.10328	98%	0.00207
1,1-Dichloroethene	0.20	96.94	0.00013	0.00861	98%	0.00017
1,2-Dichloroethane	0.41	98.96	0.00027	0.01802	98%	0.00036
1,2-Dichloropropane	0.18	112.99	0.00012	0.00903	98%	0.00018
1,4-Dichlorobenzene(p)	0.21	147.00	0.00014	0.01371	98%	0.00027
Acrylonitrile	6.33	53.06	0.00419	0.14915	98%	0.00298
Benzene (No Co-disposal)	1.91	78.11	0.00126	0.06625	98%	0.00133
Carbon Disulfide	0.58	76.13	0.00038	0.01961	98%	0.00039
Carbon Tetrachloride	4.00E-03	153.84	2.65E-06	0.00027	98%	5.47E-06
Carbonyl Sulfide	0.49	60.07	0.00032	0.01307	98%	0.00026
Chlorobenzene	0.25	112.56	0.00017	0.01250	98%	0.00025
Chloroethane	1.25	64.52	0.00083	0.03581	98%	0.00072
Chloroform	0.03	119.39	0.00002	0.00159	98%	0.00003
Dichloromethane	14.30	84.94	0.00947	0.53939	98%	0.01079
Ethylbenzene	4.61	106.16	0.00305	0.21733	98%	0.00435
Ethylene Dibromide	0.001	187.88	6.62000E-07	0.00008	98%	1.67E-06
Hexane	6.57	86.18	0.00435	0.25143	98%	0.00503
Mercury	2.92E-04	200.61	1.93E-07	2.60E-05	0%	2.60E-05
Methyl Isobutyl Ketone	1.87	100.16	0.00124	0.08317	98%	0.00166
Perchloroethylene	3.73	165.83	0.00247	0.27468	98%	0.00549
Toluene (No Co-disposal)	39.30	92.13	0.02602	1.60785	98%	0.03216
Trichloroethylene	2.82	131.40	0.00187	0.16455	98%	0.00329
Vinyl Chloride	7.34	62.50	0.00486	0.20372	98%	0.00407
Xylenes	12.10	106.16	0.00801	0.57043	98%	0.01141
Combined HAP						0.09
Single Highest HAP - Toluene						0.03

Methodology:

- Pollutant Flow (SCFM) = Captured LFG flow (SCFM) x concentration (ppmv) / 1,000,000
- Landfill Emission (TPY) = 360 x Pollutant Flow (SCFM) x M.W. (lb/lb-mole) x Pressure (atm) / Temperature (°R) [AP-42, Ch. 2.4, Eq. 4 Converted]
- Controlled Emissions (TPY) = Landfill Emission (TPY) x (1 - Control Efficiency)
- Maximum Captured LFG (SCFM) = Maximum LandGEM LFG (SCFM) x Capture Efficiency

Notes:

- There are variations in landfill gas constituents between AP-42, Ch. 2.4 (1998 Version), AP-42, Ch. 2.4 (2008 Version) and LandGEM (Version 3.02). IDEM, OAQ is using the 1998 version of AP-42, Chapter 2.4 until the 2008 update is final.
- AP-42 default NMOC is 595 ppmv with 39% consisting of VOC (232.05 ppmv VOC).

**Appendix A to the Technical Support Document (TSD)
Particulate Matter Emissions from Leachate Evaporator**

Company Name: Newton County Landfill

Address: 2266 East 500 South Road, Brook, Indiana 47922

Significant Source Modification No.: 111-35382-00017

Part 70 Operating Permit Renewal No.: T111-35606-00017

Reviewer: David Matousek

Date: August 10, 2015

1) Particulate from Evaporation of Leachate

Pollutant	Concentration (mg/l)	Leachate Evaporated (MGD)	Solids in Leachate (TPY)	% Emitted	PTE (TPY)
PM	60	0.03	2.74	10%	0.27
PM10	60	0.03	2.74	10%	0.27
Direct PM2.5	60	0.03	2.74	10%	0.27

2) Particulate from Combustion of Landfill Gas

Pollutants	Heat Input (MMBtu/hr)	Emission Factor (lb/MMBtu)	PTE Prior Evaporator (TPY)	% Removed by Passing Through Leachate	PTE After Evaporator (TPY)	Source
PM	13.00	0.042	2.39	25%	1.79	Applicant Estimate
PM10		0.042	2.39	25%	1.79	Applicant Estimate
Direct PM2.5		0.042	2.39	25%	1.79	Applicant Estimate

3) Emissions from Evaporator

Pollutant	Evaporation (TPY)	Combustion (TPY)	Total PTE (TPY)
PM	0.27	1.79	2.07
PM10	0.27	1.79	2.07
Direct PM2.5	0.27	1.79	2.07

Notes:

- 1) The Permittee assumed 1% of solids in the heated leachate are emitted as PM. IDEM, OAQ assumed 10%.
- 2) IDEM, OAQ believes some of the particulate matter generated in the evaporator combustor will be removed by the leachate when the exhaust gas and liquid leachate come into contact. A wet scrubber would achieve 90% or better removal. IDEM, OAQ assumed 25%.
- 3) Emissions from the leachate evaporator are less than 0.551 pounds per hour. Therefore, the requirements of 326 IAC 6-3-2 do not apply.
- 4) The requirements of 326 IAC 6-2 do not apply because the evaporator is a source of direct heating. Exhaust gases are released into the medium being heated.
- 5) Solids in Leachate (TPY) = concentration (mg/l) x Flow (MGD) x 8.34 lb/gallon x 365 days/yr x 1 ton/2,000 lb

**Appendix A to the Technical Support Document (TSD)
Emission Calculation - Tub Grinder with Non-Road Engine**

Company Name: Newton County Landfill
Address: 2266 East 500 South Road, Brook, Indiana 47922
Significant Source Modification No.: 111-35382-00017
Part 70 Operating Permit Renewal No.: T111-35606-00017
Reviewer: David Matousek
Date: August 10, 2015

Tub Grinder - Grinding Emissions

Maximum Hourly Throughput	3.42 ton/hr
Maximum Annual Usage	30,000 ton/yr
Hours of Operation	8,760 hr/yr

Pollutants	Emission Factor	Process Rate (ton/hr)	PTE (TPY)	Source of Data
PM	0.02 lb/ton	3.42	0.30	SCC 3-07-008-01 (Webfire - Debarking)
PM10	0.011 lb/ton		0.17	SCC 3-07-008-01 (Webfire - Debarking)
Direct PM2.5	0.011 lb/ton		0.17	Assume same as PM10

Tub Grinder - Conveyor Drop to Storage Pile

Drop Equation - AP-42, Chapter 13.2.4, November 2006, Equation (1)

$$E \text{ (lb/ton)} = 0.0032 \times k \times (U / 5)^{1.3} / (M / 2)^{1.4}$$

E = emission rate in lb/ton

k = particle size multiplier (dimensionless)

U = mean wind speed (miles per hour)

M = material moisture content (%)

7 mph

4.80 (max for equation to be valid)

k (PM) =	0.74	E (PM) =	1.08E-03	lb/ton material processed
k (PM10) =	0.35	E (PM10) =	5.09E-04	lb/ton material processed
k (PM2.5) =	0.053	E (PM2.5) =	7.71E-05	lb/ton material processed
Number of Drops =	1			
Throughput =	3.42 ton/hr			

$$\text{PTE (TPY)} = [E \text{ (lb/ton)} \times \text{Throughput (ton/hr)} \times \text{Hours of Operation (hr/yr)} \times 1\text{ton}/2,000 \text{ lb}] \times \text{Number of Drops}$$

	<u>Hours</u>	<u>PM</u>	<u>PM10</u>	<u>PM2.5</u>
PTE at	8,760	0.0161	0.0076	0.0012

Process Step	PM	PM10	Direct PM2.5
Grinding	0.30	0.17	0.17
Conveying	0.02	0.01	0.001
Tub Grinder Total	0.32	0.17	0.17

**Appendix A to the Technical Support Document (TSD)
PTE - Parts Washer**

Company Name: Newton County Landfill
Address: 2266 East 500 South Road, Brook, Indiana 47922
Significant Source Modification No.: 111-35382-00017
Part 70 Operating Permit Renewal No.: T111-35606-00017
Reviewer: David Matousek
Date: August 10, 2015

Potential to Emit

Solvent Properties

VOC Content	100%	(Assumed Solvent - Mineral Spirits)
Total HAP Content	3%	(Table 6 to Subpart VVV of Part 63)
Xylene	1%	(Table 6 to Subpart VVV of Part 63)
Toluene	1%	(Table 6 to Subpart VVV of Part 63)
Ethyl Benzene	1%	(Table 6 to Subpart VVV of Part 63)
Density	6.33	lb/gallon - MSDS
Annual Usage	160.00	gallons/year - Limited Usage

Estimated Emissions

Potential to Emit (TPY) = Annual Usage (gallons/yr) x Density (lb/gallon) x 1 ton /2,000 lb x Mass%
 Controlled Emissions (TPY) = PTE (TPY) x (1 - Control Efficiency)

Pollutant	PTE (TPY)	Control Efficiency	Controlled Emissions (TPY)
VOC	0.506	0%	0.506
Xylene	0.005	0%	0.005
Toluene	0.005	0%	0.005
Ethyl Benzene	0.005	0%	0.005
Total HAP	0.015	0%	0.015

**Appendix A to the Addendum to the Technical Support Document (TSD)
Underground Gasoline Storage and Vehicle Filling**

Company Name: Newton County Landfill

Address: 2266 East 500 South Road, Brook, Indiana 47922

Significant Source Modification No.: 111-35382-00017

Part 70 Operating Permit Renewal No.: T111-35606-00017

Reviewer: David Matousek

Date: August 10, 2015

Underground Gasoline Storage Tanks

VOC Emissions

Process	Throughput (gallons/year)	Emission Factor (lb/kgallon)	PTE VOC (TPY)	Source
Splash Fill Storage Tank	26,400	11.5	0.1518	AP-42, Ch. 5.2, Table 5.2-7, 6/08
Tank Breathing / Emptying / Hose Losses		1.0	0.0132	AP-42, Ch. 5.2, Table 5.2-7, 6/08
Displacement from Vehicle Filling		11.0	0.1452	AP-42, Ch. 5.2, Table 5.2-7, 6/08
Spillage		0.7	0.0092	AP-42, Ch. 5.2, Table 5.2-7, 6/08

0.32

HAP Emissions

Pollutant	Total VOC (TPY)	Vapor Mass %	PTE HAP (TPY)	Source
Benzene	0.32	1.41%	4.50E-03	U.S. EPA Speciate 4.4, Profile 2490
Cumene (Isopropyl Benzene)		0.01%	3.19E-05	U.S. EPA Speciate 4.4, Profile 2490
Ethyl Benzene		0.06%	1.92E-04	U.S. EPA Speciate 4.4, Profile 2490
Hexane		3.75%	1.20E-02	U.S. EPA Speciate 4.4, Profile 2490
Toluene		1.25%	3.99E-03	U.S. EPA Speciate 4.4, Profile 2490
Trimethylpentane, 2,2,4-		0.42%	1.34E-03	U.S. EPA Speciate 4.4, Profile 2490
Xylene		0.04%	1.28E-04	U.S. EPA Speciate 4.4, Profile 2490

0.02

Notes:

- 1) U.S. EPA, Speciate 4.4, Profile 2490, Composite of 14 Emission Profiles from Gasoline Storage Tanks, 19932)

Methodology:

- 1) PTE VOC (TPY) = Throughput (gallon/year) x 1 kgallon/1,000 gallons x Emission Factor (lb/kgallon) x 1 ton/2,000 pounds
 2) PTE HAP (TPY) = Total VOC (TPY) x Vapor Mass %

**Appendix A to the Addendum to the Technical Support Document (TSD)
Emission Calculations - Insignificant Activities - Propane Emergency Generators - After Project**

Company Name: Newton County Landfill
Address: 2266 East 500 South Road, Brook, Indiana 47922
Significant Source Modification No.: 111-35382-00017
Part 70 Operating Permit Renewal No.: T111-35606-00017
Reviewer: David Matousek
Date: August 10, 2015

Operating Parameters - Propane Fired Emergency Generators

	<u>Existing Generators</u>	<u>Proposed Generators</u>
Maximum Heat Input Capacity	0.237 MMBtu/hr, each engine	1.099 MMBtu/hr, each
Power Output	22.8 HP, each engine	118.0 HP, each
Liquid Propane Heat Content	90,500.00 Btu/gallon	90,500.00 Btu/gallon, each
Propane Usage as a Liquid	2.62 gallons/hr, each engine	12.14 gallons/hr, each
Number of Units	3.0 engines	1.0 engines
Hours per Unit	500 hr/yr	500 hr/yr, each
Total Hours - All Units	1,500 hr/yr, total	500 hr/yr, total
Propane Usage	3.9 kgallon/yr	6.1 kgallon/yr
Total Propane - All Units	10.00 kgallon/yr	

Emission All Three Units (TPY)				
Pollutant	Emission Factor		PTE (TPY)	Emission Factor Source
PM	5.0	lb/kgallon	0.03	SCC 2-02-010-01 US EPA 450/4-90-003, March 1990
PM ₁₀	5.0	lb/kgallon	0.03	SCC 2-02-010-01 US EPA 450/4-90-003, March 1990
PM _{2.5}	5.0	lb/kgallon	0.03	SCC 2-02-010-01 US EPA 450/4-90-003, March 1990
SO ₂	0.35	lb/kgallon	1.75E-03	SCC 2-02-010-01 US EPA 450/4-90-003, March 1990
VOC	83.0	lb/kgallon	0.42	SCC 2-02-010-01 US EPA 450/4-90-003, March 1990
CO	129.0	lb/kgallon	0.65	SCC 2-02-010-01 US EPA 450/4-90-003, March 1990
NO _x	139.0	lb/kgallon	0.70	SCC 2-02-010-01 US EPA 450/4-90-003, March 1990

Methodology:

- 1) PTE (TPY) = Propane Usage (kgallon/hr) x Emission Factor (lb/kgallon) x Operating Hours (hr/yr) x 1 ton/2,000 lb
- 2) Propane Usage (gallons/hour) = Heat Input (MMBtu/hr) x 1 gallon/90,500 Btu x 1.0E06 Btu/MMBtu

**Appendix A to the Addendum to the Technical Support Document (TSD)
Emission Calculations - Insignificant Activities - Propane Emergency Generators - After Project**

**Company Name: Newton County Landfill
Address: 2266 East 500 South Road, Brook, Indiana 47922
Significant Source Modification No.: 111-35382-00017
Part 70 Operating Permit Renewal No.: T111-35606-00017
Reviewer: David Matousek
Date: August 10, 2015**

Operating Parameters - Propane Fired Emergency Generators

	<u>Existing Generators</u>
Maximum Heat Input Capacity	0.237 MMBtu/hr, each engine
Power Output	22.8 HP, each engine
Liquid Propane Heat Content	90,500.00 Btu/gallon
Propane Usage as a Liquid	2.62 gallons/hr, each engine
Number of Units	3.0 engines
Hours per Unit	500 hr/yr
Total Hours - All Units	1,500 hr/yr, total
 Total Propane - All Units	 3.93 kgallon/yr

Emission All Three Units (TPY)				
Pollutant	Emission Factor		PTE (TPY)	Emission Factor Source
PM	5.0	lb/kgallon	0.01	SCC 2-02-010-01 US EPA 450/4-90-003, March 1990
PM ₁₀	5.0	lb/kgallon	0.01	SCC 2-02-010-01 US EPA 450/4-90-003, March 1990
PM _{2.5}	5.0	lb/kgallon	0.01	SCC 2-02-010-01 US EPA 450/4-90-003, March 1990
SO ₂	0.35	lb/kgallon	6.87E-04	SCC 2-02-010-01 US EPA 450/4-90-003, March 1990
VOC	83.0	lb/kgallon	0.16	SCC 2-02-010-01 US EPA 450/4-90-003, March 1990
CO	129.0	lb/kgallon	0.25	SCC 2-02-010-01 US EPA 450/4-90-003, March 1990
NO _x	139.0	lb/kgallon	0.27	SCC 2-02-010-01 US EPA 450/4-90-003, March 1990

Methodology:

- 1) PTE (TPY) = Propane Usage (kgallon/hr) x Emission Factor (lb/kgallon) x Operating Hours (hr/yr) x 1 ton/2,000 lb
- 2) Propane Usage (gallons/hour) = Heat Input (MMBtu/hr) x 1 gallon/90,500 Btu x 1.0E06 Btu/MMBtu

**Appendix A to the Addendum to the Technical Support Document (TSD)
Emission Calculations - Insignificant Activities - Proposed Generator**

Company Name: Newton County Landfill
Address: 2266 East 500 South Road, Brook, Indiana 47922
Significant Source Modification No.: 111-35382-00017
Part 70 Operating Permit Renewal No.: T111-35606-00017
Reviewer: David Matousek
Date: August 10, 2015

Operating Parameters - Propane Fired Emergency Generator - Leachate Treatment

Proposed Generators

Maximum Heat Input Capacity	1.099 MMBtu/hr, each engine
Power Output	118.0 HP, each engine
Liquid Propane Heat Content	90,500.00 Btu/gallon
Propane Usage as a Liquid	12.14 gallons/hr, each engine
Number of Units	1.0 engines
Hours per Unit	500 hr/yr
Total Hours - All Units	500 hr/yr, total
 Total Propane - All Units	 6.07 kgallon/yr

Potential to Emit (TPY)				
Pollutant	Emission Factor		PTE (TPY)	Emission Factor Source
PM	5.0	lb/kgallon	0.02	SCC 2-02-010-01 US EPA 450/4-90-003, March 1990
PM ₁₀	5.0	lb/kgallon	0.02	SCC 2-02-010-01 US EPA 450/4-90-003, March 1990
PM _{2.5}	5.0	lb/kgallon	0.02	SCC 2-02-010-01 US EPA 450/4-90-003, March 1990
SO ₂	0.35	lb/kgallon	1.06E-03	SCC 2-02-010-01 US EPA 450/4-90-003, March 1990
VOC	83.0	lb/kgallon	0.25	SCC 2-02-010-01 US EPA 450/4-90-003, March 1990
CO	129.0	lb/kgallon	0.39	SCC 2-02-010-01 US EPA 450/4-90-003, March 1990
NO _x	139.0	lb/kgallon	0.42	SCC 2-02-010-01 US EPA 450/4-90-003, March 1990

Methodology:

- 1) PTE (TPY) = Propane Usage (kgallon/hr) x Emission Factor (lb/kgallon) x Operating Hours (hr/yr) x 1 ton/2,000 lb
- 2) Propane Usage (gallons/hour) = Heat Input (MMBtu/hr) x 1 gallon/90,500 Btu x 1.0E06 Btu/MMBtu

**Appendix A to the Technical Support Document (TSD)
Potential to Emit - Leachate Storage Tanks and Oil/Water Separator**

Company Name: Newton County Landfill

Address: 2266 East 500 South Road, Brook, Indiana 47922

Significant Source Modification No.: 111-35382-00017

Part 70 Operating Permit Renewal No.: T111-35606-00017

Reviewer: David Matousek

Date: August 10, 2015

Tank 1 - 500,000 Gallons								
Pollutant	CAS Number	Concentration (mg/l)	VOC	HAP	Emission Rate (grams/sec)	PTE (TPY)	Control Efficiency	Controlled PTE (TPY)
2-Butanone (MEK)	78-93-3	25.9	Y		2.50E-04	8.69E-03	98%	1.74E-04
2-Methylnaphthalene	91-57-6	0.274	Y	Y	9.15E-05	3.18E-03		6.36E-05
2-Methylphenol (o-Cresol)	95-48-7	0.059	Y	Y	1.84E-07	6.40E-06		1.28E-07
3-Methylphenol (m-Cresol)	108-39-4	3.18	Y	Y	3.11E-06	1.08E-04		2.16E-06
4-Methylphenol (p-Cresol)	106-44-5							
Acenaphthene	83-32-9	0.103	Y	Y	9.13E-06	3.17E-04		6.35E-06
Benzoic Acid	65-85-0	9.94	Y		4.94E-09	1.72E-07		3.43E-09
Benzyl Alcohol	100-51-6	0.06	Y		8.29E-08	2.88E-06		5.76E-08
Dibenzofuran	134-64-9	0.057	Y	Y	6.00E-20	2.09E-18		4.17E-20
Fluorene	86-73-7	0.056	Y	Y	4.38E-06	1.52E-04		3.05E-06
Methyl Isobutyl Ketone	108-10-1	0.663	Y	Y	8.36E-05	2.91E-03		5.81E-05
Naphthalene	91-20-3	0.419	Y	Y	1.05E-04	3.65E-03		7.30E-05
Phenanthrene	85-01-8	0.062	Y	Y	5.64E-06	1.96E-04		3.92E-06
Phenol	108-95-2	4.01	Y	Y	2.31E-06	8.03E-05		1.61E-06
Xylene	1330-20-7	0.502	Y	Y	6.64E-04	2.31E-02		4.62E-04

VOC	0.04	8.47E-04
Combined HAP	0.03	6.74E-04
Single HAP - Xylene	0.02	4.62E-04

Tank 2 - 500,000 Gallons								
Pollutant	CAS Number	Concentration (mg/l)	VOC	HAP	Emission Rate (grams/sec)	PTE (TPY)	Control Efficiency	Controlled PTE (TPY)
2-Butanone (MEK)	78-93-3	25.9	Y		2.50E-04	8.69E-03	98%	1.74E-04
2-Methylnaphthalene	91-57-6	0.274	Y	Y	9.15E-05	3.18E-03		6.36E-05
2-Methylphenol (o-Cresol)	95-48-7	0.059	Y	Y	1.84E-07	6.40E-06		1.28E-07
3-Methylphenol (m-Cresol)	108-39-4	3.18	Y	Y	3.11E-06	1.08E-04		2.16E-06
4-Methylphenol (p-Cresol)	106-44-5							
Acenaphthene	83-32-9	0.103	Y	Y	9.13E-06	3.17E-04		6.35E-06
Benzoic Acid	65-85-0	9.94	Y		4.94E-09	1.72E-07		3.43E-09
Benzyl Alcohol	100-51-6	0.06	Y		8.29E-08	2.88E-06		5.76E-08
Dibenzofuran	134-64-9	0.057	Y	Y	6.00E-20	2.09E-18		4.17E-20
Fluorene	86-73-7	0.056	Y	Y	4.38E-06	1.52E-04		3.05E-06
Methyl Isobutyl Ketone	108-10-1	0.663	Y	Y	8.36E-05	2.91E-03		5.81E-05
Naphthalene	91-20-3	0.419	Y	Y	1.05E-04	3.65E-03		7.30E-05
Phenanthrene	85-01-8	0.062	Y	Y	5.64E-06	1.96E-04		3.92E-06
Phenol	108-95-2	4.01	Y	Y	2.31E-06	8.03E-05		1.61E-06
Xylene	1330-20-7	0.502	Y	Y	6.64E-04	2.31E-02		4.62E-04

VOC	0.04	8.47E-04
Combined HAP	0.03	6.74E-04
Single HAP - Xylene	0.02	4.62E-04

(continued on next page)

Appendix A to the Technical Support Document (TSD)
Potential to Emit - Leachate Storage Tanks and Oil/Water Separator
(continued from previous page)

Tank 3 - 319,000 Gallons								
Pollutant	CAS Number	Concentration (mg/l)	VOC	HAP	Emission Rate (grams/sec)	PTE (TPY)	Control Efficiency	Controlled PTE (TPY)
2-Butanone (MEK)	78-93-3	25.9	Y		1.05E-05	3.65E-04	98%	7.30E-06
2-Methylnaphthalene	91-57-6	0.274	Y	Y	1.25E-07	4.35E-06		8.69E-08
2-Methylphenol (o-Cresol)	95-48-7	0.059	Y	Y	3.55E-08	1.23E-06		2.47E-08
3-Methylphenol (m-Cresol)	108-39-4	3.18	Y	Y	1.77E-08	6.15E-07		1.23E-08
4-Methylphenol (p-Cresol)	106-44-5							5.65E-09
Acenaphthene	83-32-9	0.103	Y	Y	8.12E-09	2.82E-07		1.12E-13
Benzoic Acid	65-85-0	9.94	Y		1.61E-13	5.60E-12		7.44E-12
Benzyl Alcohol	100-51-6	0.060	Y		1.07E-11	3.72E-10		0.00E+00
Dibenzofuran	134-64-9	0.057	Y	Y	0.00E+00	0.00E+00		1.95E-09
Fluorene	86-73-7	0.056	Y	Y	2.81E-09	9.77E-08		3.09E-07
Methyl Isobutyl Ketone	108-10-1	0.663	Y	Y	4.44E-07	1.54E-05		2.01E-07
Naphthalene	91-20-3	0.419	Y	Y	2.89E-07	1.00E-05		2.70E-09
Phenanthrene	85-01-8	0.062	Y	Y	3.89E-09	1.35E-07		2.79E-07
Phenol	108-95-2	4.01	Y	Y	4.01E-07	1.39E-05		2.79E-07
Xylene	1330-20-7	0.502	Y	Y	4.01E-07	1.39E-05		2.79E-07
					VOC	4.25E-04		
					Combined HAP	6.01E-05		1.20E-06
					Single HAP - MIBK	1.54E-05		3.09E-07

Oil/Water Separator								
Pollutant	CAS Number	Concentration (mg/l)	VOC	HAP	Emission Rate (grams/sec)	PTE (TPY)	Control Efficiency	Controlled PTE (TPY)
1,4-Dichlorobenzene	106-46-7	869	Y	Y	2.11E-04	7.33E-03	98%	1.47E-04
2-Butanone (MEK)	78-93-3	277	Y		2.22E-04	7.72E-03		1.54E-04
2-Hexanone	591-78-6	107	Y		0.00E+00	0.00E+00		0.00E+00
2-Methylnaphthalene	91-57-6	1350	Y	Y	1.21E-03	4.21E-02		8.41E-04
3-Methylphenol (m-Cresol)	108-39-4	503	Y	Y	5.16E-06	1.79E-04		3.59E-06
4-Methylphenol (p-Cresol)	106-44-5							8.00E-07
Acenaphthene	83-32-9	348	Y	Y	1.15E-06	4.00E-05		1.16E-03
Benzene	71-43-2	242	Y	Y	1.67E-03	5.81E-02		0.00E+00
Dibenzofuran	134-64-9	179	Y	Y	0.00E+00	0.00E+00		5.73E-04
Ethyl Benzene	100-41-4	792	Y	Y	8.24E-04	2.86E-02		1.28E-07
Fluorene	86-73-7	154	Y	Y	1.84E-07	6.40E-06		4.07E-04
Methyl Isobutyl Ketone	108-10-1	229	Y	Y	5.85E-04	2.03E-02		2.30E-04
Naphthalene	91-20-3	3430	Y	Y	3.31E-04	1.15E-02		1.47E-08
Phenanthrene	85-01-8	90.2	Y	Y	2.11E-08	7.33E-07		2.29E-05
Styrene	100-42-5	93.8	Y	Y	3.29E-05	1.14E-03		9.39E-04
Toluene	108-88-3	563	Y	Y	1.35E-03	4.69E-02		1.42E-03
Xylene	1330-20-7	2200	Y	Y	2.04E-03	7.09E-02		
					VOC	0.29		5.90E-03
					Combined HAP	0.29		5.74E-03
					Single HAP - Xylene	0.07		1.42E-03

Methodology:

- 1) uncontrolled PTE (TPY) = emission rate (grams/sec) x 1 lb/453.59 grams x 1 ton/2,000 lb x 60 sec/min x 60 min/hr x 8760 hr/yr
- 2) controlled PTE (TPY) = uncontrolled PTE (TPY) x (1 - control efficiency)
- 3) Emission rates in grams per second from administrative amendment 111-35038-00017.

**Appendix A to the Addendum to the Technical Support Document (TSD)
Potential to Emit - Miscellaneous External Propane Combustion
Twelve (12) Existing Unit + Three (3) Proposed Units in Leachate Treatment Building**

Company Name: Newton County Landfill

Address: 2266 East 500 South Road, Brook, Indiana 47922

Significant Source Modification No.: 111-35382-00017

Part 70 Operating Permit Renewal No.: T111-35606-00017

Reviewer: David Matousek

Date: August 10, 2015

Calculation Basis

Source Wide Heat Input	6.000 MMBtu/hr	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	0.70	lb/kgallon	0.20	Applicant Estimate, based on 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	0.80	lb/kgallon	0.23	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 Units with Negligible Emissions**

Company Name: Newton County Landfill

Address: 2266 East 500 South Road, Brook, Indiana 47922

Significant Source Modification No.: 111-35382-00017

Part 70 Operating Permit Renewal No.: T111-35606-00017

Reviewer: David Matousek

Date: August 10, 2015

Emission Unit	Potential Regulated Pollutant Emissions
One (1) 57,000 gallon leachate storage tank	VOC, HAP
One (1) 158,000 gallon leachate storage tank	VOC, HAP
One (1) solidification process	VOC, HAP, PM, PM10, Direct PM2.5
One (1) above ground diesel fuel storage tank (Tank A-13)	VOC, HAP
One (1) 500 gallon used oil AST	VOC, HAP
One (1) 300 gallon transmission fluid AST	VOC, HAP
Two (2) 55 gallon transmission fluid AST	VOC, HAP
One (1) 55 gallon transmission fluid drum	VOC, HAP
One (1) 500 gallon spent oil AST	VOC, HAP
One (1) 600 gallon compressor oil AST	VOC, HAP
Four (4) 500 gallon oil AST	VOC, HAP
One (1) 12,000 gallon off-road diesel AST	VOC, HAP
One (1) 55 gallon automotive oil AST	VOC, HAP
Three (3) 55 gallon gear oil AST	VOC, HAP
Two (2) 55 gallon coolant AST	VOC
One (1) 55 gallon hydraulic fluid AST	VOC, HAP
Production related activities: protective coating, welding	VOC, HAP, PM, PM10, Direct PM2.5
Repair activities	PM10, PM10, PM2.5
Laboratory emission	none

**Appendix A to the Technical Support Document (TSD)
326 IAC 2-7-10.5 - Evaluation**

Company Name: Newton County Landfill
Address: 2266 East 500 South Road, Brook, Indiana 47922
Significant Source Modification No.: 111-35382-00017
Part 70 Operating Permit Renewal No.: T111-35606-00017
Reviewer: David Matousek
Date: August 10, 2015

326 IAC 2-7-10.5 Analysis - Uncontrolled PTE (TPY) for Project										
Emission Unit	PM	PM ₁₀	Direct PM _{2.5}	SO ₂	VOC	CO	NOx	Total HAP	Toluene	
Landfill After Expansion	0.00	0.00	0.00	0.00	280.08	39.74	0.00	101.39	36.43	
Landfill Before Expansion	0.00	0.00	0.00	0.00	135.69	19.25	0.00	49.11	17.64	
Increase in PTE due to Landfill Expansion	0.00	0.00	0.00	0.00	144.39	20.49	0.00	52.28	18.79	
Landfill Fugitive HAP After Expansion	0.00	0.00	0.00	0.00	0.00	0.00	0.00	25.35	9.11	
Landfill Fugitive HAP Prior Expansion	0.00	0.00	0.00	0.00	0.00	0.00	0.00	12.28	4.41	
Increase in Fugitive HAP PTE due to Landfill Expansion	0.00	0.00	0.00	0.00	0.00	0.00	0.00	13.07	4.70	
Enclosed Combustor (#4)	11.88	11.88	11.88	70.90	3.81	65.70	44.68	5.65	0	
Leachate Treatment System	0.00	0.00	0.00	0.00	5.71	0.00	0.00	0.86	0.00	
Propane Generator	0.02	0.02	0.02	1.06E-03	0.25	0.39	0.42	0.00	0.00	
Propane Heaters	negligible	negligible	negligible	negligible	negligible	negligible	negligible	negligible	negligible	
Total Emission Increase for Project	11.90	11.90	11.90	70.90	154.16	86.58	45.10	71.86	23.49	

Appendix A to the Technical Support Document (TSD) Fugitive Emissions from Paved Roads

Company Name: Newton County Landfill

Address: 2266 East 500 South Road, Brook, Indiana 47922

Significant Source Modification No.: 111-35382-00017

Part 70 Operating Permit Renewal No.: T111-35606-00017

Reviewer: David Matousek

Date: August 10, 2015

Average Vehicle Weight

Vehicle Type	Vehicles per Day	Average Weight (tons)	Trips per Year	Miles per Trip	Vehicle Miles Traveled (VMT) (miles/year)	Traffic Component	Component Weight (tons)
Transfer Trailer		27.50	99,000	2.2	217,800	45.00%	12.38
Front End Loader		24.05	3,300	2.2	7,260	1.50%	0.36
Rear End Loader		19.25	3,300	2.2	7,260	1.50%	0.29
Roll-Off Container		17.00	2,200	2.2	4,840	1.00%	0.17
Private Truck		2.85	2,200	2.2	4,840	1.00%	0.03
Dump Truck		15.50	110,000	2.2	242,000	50.00%	7.75
totals					484,000	100.00%	20.97

Unmitigated Emissions

Unmitigated Emission Factor = $k * [(sL)^{0.91}] * [(W)^{1.02}]$: Equation 1 from AP-42, Chapter 13.2.1, 01/2011

Unmitigated Emissions = $E \text{ (lb/VMT)} * \text{VMT (miles)/year} * 1 \text{ ton}/2,000 \text{ lb}$

Unmitigated Emissions		PM	PM10	PM2.5
Where k =	particle size multiplier (lb/VMT)	0.011	0.0022	0.00054
sL =	silt content (grains/square meter)	7.4	7.4	7.4
W =	component weight (ton)	20.97	20.97	20.97
E =	unmitigated emission factor (lb/VMT)	1.5153	0.3031	0.0744
VMT =	vehicle miles traveled (miles/yr)	484,000	484,000	484,000
Unmitigated Emissions =		366.69	73.34	18.00

Mitigated Emissions

Mitigation Factor = $[1 - (P / (4 \times 365))]$, Equation 3 from AP-42, Chapter 13.2.1, 01/2011

P (days) = 120

Mitigation Factor (unitless) = 0.9178

Mitigated Emissions (TPY) = Unmitigated Emissions * Mitigation Factor

mitigated PM = 336.55 TPY

mitigated PM10 = 67.31 TPY

mitigated PM2.5 = 16.52 TPY

Controlled Emissions

Controlled Emissions = Mitigated Emissions (TPY) * (1 - Dust Control Efficiency (%))

Fugitive Dust Plan Control Efficiency (%)

controlled PM =	90%	33.66 TPY
controlled PM10 =	90%	6.73 TPY
controlled PM2.5 =	80%	3.30 TPY

**Appendix A to the Technical Support Document (TSD)
Fugitive Emissions from Unpaved Roads**

Company Name: Newton County Landfill
 Address: 2266 East 500 South Road, Brook, Indiana 47922
 Significant Source Modification No.: 111-35382-00017
 Part 70 Operating Permit Renewal No.: T111-35606-00017
 Reviewer: David Matousek
 Date: August 10, 2015

Average Vehicle Weight

Vehicle Type	Vehicles per Day	Average Weight (tons)	Trips per Year	Miles per Trip	Vehicle Miles Traveled (VMT) (miles/year)	Traffic Component	Component Weight (tons)
Transfer Trailer	---	27.50	99,000	3.71	367,290.00	45.00%	12.38
Front End Loader	---	24.05	3,300	3.71	12,243.00	1.50%	0.36
Rear End Loader	---	19.25	3,300	3.71	12,243.00	1.50%	0.29
Roll-Off Container	---	17.00	2,200	3.71	8,162.00	1.00%	0.17
Private Truck	---	2.85	2,200	3.71	8,162.00	1.00%	0.03
Dump Truck	---	15.50	110,000	3.71	408,100.00	50.00%	7.75
					816,200.00	100.00%	20.97

Unmitigated Emissions

Unmitigated Emission Factor = $k * [(s/12)^a] * [(W/3)^b]$: Equation 1a from AP-42, Chapter 13.2.2, 11/2006
 Unmitigated Emissions = E (lb/VMT) * VMT (miles)/year * 1 ton/2,000 lb

Unmitigated Emissions		PM	PM10	PM2.5
Where k =	particle size multiplier (lb/VMT)	4.9	1.5	0.15
s =	silt content (%)	6.4	6.4	6.4
a =	unitless constant	0.7	0.9	0.9
W =	component weight (ton)	20.97	20.97	20.97
b =	unitless constant	0.45	0.45	0.45
E =	unmitigated emission factor (lb/VMT)	7.5707	2.0438	0.2044
VMT =	vehicle miles traveled (miles/yr)	816,200.00	816,200.00	816,200.00
	Unmitigated Emissions =	3,089.62	834.06	83.41

Mitigated Emissions

Mitigation Factor = $[(365 - P) / 365]$, Equation 2 from AP-42, Chapter 13.2.2, 11/2006

P (days) = 120
 Mitigation Factor (unitless) = 0.6712

Mitigated Emissions (TPY) = Unmitigated Emissions * Mitigation Factor

mitigated PM = 2,073.85 TPY
 mitigated PM10 = 559.85 TPY
 mitigated PM2.5 = 55.99 TPY

Controlled Emissions

Controlled Emissions = Mitigated Emissions (TPY) * (1 - Dust Control Efficiency (%))

Fugitive Dust Plan Control Efficiency (%)

controlled PM =	90%	207.39 TPY
controlled PM10 =	90%	55.99 TPY
controlled PM2.5 =	40%	33.59 TPY

Appendix A to the BACT Analysis
Cost Analysis - Environmental Information Logistics, LLC

(continued from previous page)

Annual Operating Costs

	<u>Direct Costs</u>			Source
	ULE Flare	Std. Flare	Difference	
Labor and Maintenance Costs				
Operating Labor (500 hrs at \$20/hr)	\$10,000.00	\$10,000.00	\$0.00	Permittee Estimate
Supervision (15% of Operating Labor)	\$1,500.00	\$1,500.00	\$0.00	US EPA Cost Manual, 6th Edition, 2002
Maintenance Labor (500 hrs at \$20/hr)	\$10,000.00	\$10,000.00	\$0.00	Permittee Estimate
Maintenance Materials (100% of Op. Labor)	\$10,000.00	\$10,000.00	\$0.00	US EPA Cost Manual, 6th Edition, 2002
Labor and Maintenance Costs	\$31,500.00	\$31,500.00	\$0.00	

Utilities

	ULE Flare	Std. Flare	Difference	Source
Electric 80 kw/hr @ \$0.059/kw.hr	\$41,347.20	\$41,347.20	\$0.00	Permittee Estimate
Total Direct Cost =	\$72,847.20	\$72,847.20	\$0.00	

Indirect Costs

	ULE Flare	Std. Flare	Difference	Source
Overhead (60% of O & M Cost)	\$18,900.00	\$18,900.00	\$0.00	US EPA Cost Manual, 6th Edition, 2002
Administrative Charges (2% of Total Capital)	\$31,104.00	\$12,096.00	\$19,008.00	US EPA Cost Manual, 6th Edition, 2002
Property Taxes (1% of Total Capital)	\$15,552.00	\$6,048.00	\$9,504.00	US EPA Cost Manual, 6th Edition, 2002
Insurance (1% of Total Capital)	\$15,552.00	\$6,048.00	\$9,504.00	US EPA Cost Manual, 6th Edition, 2002
Total Indirect Cost =	\$81,108.00	\$43,092.00	\$38,016.00	

Total Annual Operating Costs = \$153,955.20 ULE Flare \$115,939.20 Std. Flare \$38,016.00 Difference

Total Annualized Cost

	ULE Flare	Std. Flare	Difference
Total Annualized Capital Costs	\$259,096.32	\$100,759.68	\$158,336.64
Total Annual Operating Costs	\$153,955.20	\$115,939.20	\$38,016.00
	\$413,051.52	\$216,698.88	\$196,352.64

Cost Effectiveness

	ULE Flare	Std. Flare
Potential to Emit of Landfill (TPY)	280.08	280.08
Control Efficiency	99.0%	98.0%
VOC Destroyed (TPY)	277.28	274.48
Cost Effectiveness (\$ per ton of pollutant)	\$1,489.66	\$789.49

Incremental Change in VOC Emissions From 98% Control (Standard Flare) to 99% Control (ULE Flare)

Incremental Change in VOC Destroyed	2.80	TPY	From 98% to 99% Control
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Incremental Cost Increase From 98% Control (Standard Flare) to 99% Control (ULE Flare)

\$196,352.64	/	2.80 TPY	=	\$70,105.91	per ton of pollutant
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**Indiana Department of Environmental Management
Office of Air Quality**

**Appendix B to the Technical Support Document (TSD)
326 IAC 8-1-6 (Best Available Control Technology (BACT)) Review**

Source Background and Description

Source Name:	Newton County Landfill
Source Location:	2266 East 500 South Road, Brook, Indiana 47922
County:	Newton County, Jackson Township
SIC Code:	4953 (Refuse Systems)
Significant Source Modification No.:	111-35382-00017
Permit Renewal No.:	T111-35606-00017
Permit Reviewer:	David Matousek

Requirement for Best Available Control Technology (BACT)

On March 18, 2015, Newton County Landfill submitted an application to OAQ requesting a renewal of its operating permit. Newton County Landfill was issued its second Part 70 Operating Permit Renewal (T111-29224-00017) on March 11, 2011. During the review of the application, IDEM, OAQ discovered the landfill was not subject to 326 IAC 8-8.1 (Municipal Solid Waste Landfills Not Located in Clark, Floyd, Lake and Porter Counties) and was subject to the requirements of 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). 326 IAC 8-1-6 requires emission units subject to the rule to reduce VOC emissions using the Best Available Control Technology (BACT).

Newton County Landfill originally constructed a landfill in 1972 that was permitted under Solid Waste Permit No. 56-02. In 1995, the original landfill was excavated and the waste was deposited in the new and improved Newton County Landfill (permitted under new Solid Waste Permit No. 56-05). IDEM, OAQ considers the current Newton County Landfill to be constructed in 1995, has potential emissions of twenty-five (25) tons per year or more of VOC, and is not regulated by another Article 8 rule. Therefore, the requirements of 326 IAC 8-1-6 apply to the landfill and a control technology review is presented in this document. The landfill flares emission unit #3 and emission unit #4 are existing installations.

BACT Review – Subject Units

The following emission unit is subject to the control technology review requirements of 326 IAC 8-1-6 (New Facilities, General Reduction Requirements) as a result of this modification:

- (a) One (1) municipal solid waste landfill, identified as emissions unit #1, constructed in 1995 and modified in 2006 in accordance with 40 CFR 60, Subpart WWW, and approved for modification in 2006 and 2016 in accordance with 326 IAC 2-7-10.5, but not 40 CFR 60, Subpart WWW, with a maximum design capacity of 102,030,469 megagrams (Mg) and 124,965,933 bank cubic yards. The landfill includes a gas treatment system installed in 2009. Landfill gas is sent offsite for sale or use and/or is combusted in one (1) or more of the enclosed combustors (emission units #3 and #4 and the leachate evaporator). [40 CFR 60, Subpart WWW] [40 CFR 63, Subpart AAAA] [40 CFR 61, Subpart M]

Newton County Landfill produces landfill gas through a collection system throughout the landfill. Newton County Landfill currently sends approximately 1,000 acfm of landfill gas via pipeline to an industrial park next to the landfill for beneficial use by egg carton manufacturer (INIG Inc.) to power its drying equipment as part of its production process. If there is a future demand, Newton may also make landfill gas available to other businesses located in the industrial park. Any landfill gas that is not used by the industrial park is burned off by flaring at the landfill. Any changes to demand for landfill gas by the industrial park will result in short-term landfill gas flow fluctuations to the landfill flare.

Summary of the Best Available Control Technology (BACT) Process

BACT is an emission limitation based on the maximum degree of pollution reduction of emissions, which is achievable on a case-by-case basis. A BACT analysis takes into account the energy, environmental, and economic impacts on the source. These reductions may be determined through the application of available control techniques, process design, work practices, and operational limitations. There will still be air pollution from this project; however, the Permittee will be required to demonstrate that the emissions will be reduced to the maximum extent. Federal EPA generally requires an evaluation that follows a "top down" process. In this approach, the applicant identifies the best controlled similar source on the basis of controls required by regulation or permit, or controls achieved in practice. The highest level of control is then evaluated for technical feasibility. IDEM evaluates BACT based on a "top down" approach. The five (5) basic steps of a top-down BACT analysis used by the Office of Air Quality (OAQ) to make BACT determinations are listed below:

Step 1: Identify Potential Control Technologies

The first step is to identify potentially "available" control options for each emission unit and for each pollutant under review. Available options should consist of a comprehensive list of those technologies with a potentially practical application to the emissions unit in question. The list should include lowest achievable emission rate (LAER) technologies and controls applied to similar source categories.

Step 2: Eliminate Technically Infeasible Options

The second step is to eliminate technically infeasible options from further consideration. To be considered feasible, a technology must be both available and applicable. It is important in this step that any presentation of a technical argument for eliminating a technology from further consideration be clearly documented based on physical, chemical, engineering, and source specific factors related to safe and successful use of the controls. Innovative control means a control that has not been demonstrated in a commercial application on similar units. Innovative controls are normally given a waiver from the BACT requirements due to the uncertainty of actual control efficiency. IDEM evaluates any innovative controls if proposed by the source. The Permittee has not submitted any innovative control technologies for consideration. A control technology is considered available when there is sufficient data indicating that the technology results in a reduction in emissions of regulated pollutants.

Step 3: Rank the Remaining Control Technologies by Control Effectiveness

The third step is to rank the technologies not eliminated in Step 2 in order of descending control effectiveness for each pollutant of concern. The ranked alternatives are reviewed in terms of control effectiveness (percent pollutant removed). If the highest ranked technology is proposed as BACT, it is not necessary to perform any further technical or economic evaluation, except, for the environmental analyses and any more stringent limits established from other RBLC Permits.

Step 4: Evaluate the Most Effective Controls and Document the Results

The fourth step begins with an evaluation of the remaining technologies under consideration for each pollutant of concern in regards to energy, environmental, and economic impacts for determining a final control technology. The highest ranked alternative is evaluated for environmental, energy and economic impacts specific to the proposed modification. If the analysis determines that the highest ranked control is not appropriate as BACT, due to any of the energy, environmental, and economic impacts, then the next most effective control is evaluated. The evaluation continues until a technology under consideration cannot be eliminated based on adverse energy, environmental, or economic impacts. If the highest ranked technology is proposed as BACT, it is not necessary to perform any further economic or environmental analysis. In no case can the selected BACT be less stringent than any New Source Performance Standard (NSPS), National Emission Standards for Hazardous Air Pollutants (NESHAP) or Reasonably Available Control Technologies (RACT) standard or emission limit.

Step 5: Select BACT

The fifth and final step is to select as BACT the most effective of the remaining technologies under consideration for each pollutant of concern. For the technologies determined to be feasible, there may be several different limits that have been set as BACT for the same control technology. The permitting agency has to choose the most stringent limit as BACT unless the applicant demonstrates in a convincing manner why that limit is not feasible. The final BACT determination would be the technology with the most stringent corresponding limit that is economically feasible. BACT must, at a minimum, be no less stringent than the level of control required by any applicable New Source Performance Standard (NSPS) and National Emissions Standard for Hazardous Air Pollutants (NESHAP) or state regulatory standards applicable to the emission units included in the permits.

BACT Analyses – Municipal Solid Waste Landfill

Emission Unit Description

- (a) One (1) municipal solid waste landfill, identified as emissions unit #1, constructed in 1995 and modified in 2006 in accordance with 40 CFR 60, Subpart WWW, and approved for modification in 2006 and 2016 in accordance with 326 IAC 2-7-10.5, but not 40 CFR 60, Subpart WWW, with a maximum design capacity of 102,030,469 megagrams (Mg) and 124,965,933 bank cubic yards. The landfill includes a gas treatment system installed in 2009. Landfill gas is sent offsite for sale or use and/or is combusted in one (1) or more of the enclosed combustors (emission units #3 and #4 and the leachate evaporator). [40 CFR 60, Subpart WWW] [40 CFR 63, Subpart AAAA] [40 CFR 61, Subpart M]

Step 1: Identify Potential Control Technologies

VOC emissions are typically controlled by the use of add on control technologies that capture and recover the VOC or destroy it by oxidation to CO₂ and water vapor. IDEM, OAQ has identified the following VOC control technologies for the municipal solid waste landfill:

- (a) Carbon Adsorption;
- (b) Thermal Oxidizer;
- (c) Catalytic Oxidizer;
- (d) Open Flare;
- (e) Enclosed Combustor;
- (f) Biofiltration;

- (g) Cryogenic Condensation;
- (h) Wet Scrubber; and
- (i) Beneficial Reuse.

Step 2: Eliminate Technically Infeasible Options

Each of the control options listed above is evaluated as follows:

(a) **Carbon Adsorption**

Carbon adsorption is a process where a VOC rich gas is passed through a bed of solid carbon particles and the gas molecules are selectively held on the carbon surface by attractive forces. The adsorptive capacity of carbon for the gas molecules will increase with the gas phase concentration, molecular weight, diffusivity, polarity, and boiling point. This technology is best suited for recovery of VOCs with intermediate molecular weights, typically 45 to 130. Small compounds do not adsorb well and the large compounds are difficult to remove during regeneration of the carbon. The removal efficiency of carbon adsorbers has been reported from 95% to greater than 98% depending on the pollutant at input concentrations between 500 and 2,000 ppm.

The most commonly used adsorbers are fixed-bed systems and canister systems. Typically, fixed bed systems are constructed with two beds containing activated carbon. One bed is used to adsorb VOC while the second bed is undergoing desorption or carbon regeneration through steam cleaning. VOC concentrations in the waste gas are reduced as the gas passes from the entry to exit of the bed until the carbon bed is saturated and breakthrough occurs. Each bed and waste stream will have a specific breakthrough time when the bed requires regeneration. Canister systems consist of a returnable container filled with activated carbon which remains in service until breakthrough when it is returned to the manufacturer for regeneration and a new canister is placed in service. Canister systems are available with carbon capacities up to 2,000 pounds and waste gas flows of 8,000 ACFM.

Carbon adsorption is a technologically feasible control technology for VOC control in the municipal solid waste landfill.

(b) **Thermal Oxidizer**

A thermal oxidizer is typically applied for destruction of organic vapors and is considered a technology for controlling VOC emissions. The thermal oxidizer has a stabilized flame maintained by a combination of auxiliary fuel, waste gas compounds, and supplemental air which is added when necessary. The exhaust gas is mixed with combustion fuel and VOC is oxidized to carbon dioxide. The main design parameters of the thermal oxidizer are time, turbulence and temperature. Destruction of the pollutant is achieved by thoroughly mixing the waste gas (turbulence) in the combustion chamber at or above the oxidizing temperature of the pollutant (temperature). The final parameter (time) is achieved by maintaining a nearly constant flow rate, or space velocity through a fixed length combustion zone. The thermal oxidizer is not considered a feasible control technology due to the following factors:

- (1) Gas Flow: Thermal oxidizers are not appropriate for gas streams with wide fluctuations in gas flow because destruction efficiency is dependent on the residence time of the pollutant in the combustion zone and proper mixing. Most thermal oxidizers are designed for a residence time of approximately 0.75 to 1.0 second. The length of the gas path is set at initial design by the physical dimensions of the combustion chamber and once this distance is

set, it is extremely difficult to adjust. Flow must remain fairly constant to ensure the residence time required in the combustion chamber is achieved for proper destruction of the pollutant.

The generation of landfill gas from this municipal solid waste landfill is from a biological decomposition process. Landfill gas composition and quantity is expected to fluctuate over time as a result of the health and activity of this biological system. Additionally, the Newton County Landfill currently sends approximately 1,000 acfm of landfill gas via pipeline to an industrial park next to the landfill for beneficial use by egg carton manufacturer (INIG Inc.) to power its drying equipment as part of its production process. If there is a future demand, Newton may also make landfill gas available to other businesses located in the industrial park. Any landfill gas that is not used by the industrial park is burned off by flaring at the landfill. Any changes to demand for landfill gas by the industrial park will result in short-term landfill gas flow fluctuations to the landfill flare. The use of a thermal oxidizer is not considered a technologically feasible control option for the landfill due to the wide variation in landfill gas generation and short term flow fluctuation.

- (2) Acid Gas Production: Thermal oxidizers are not recommended for controlling waste gas steams containing significant amounts of halogen or sulfur containing compounds. When oxidized, these compounds can create sulfur dioxide, sulfuric acid, hydrogen chloride, and hydrogen fluoride which are extremely corrosive. Landfill gas is rich in halogen and sulfur containing compounds; therefore, the use of a thermal oxidizer not technologically feasible for VOC control.

(c) **Catalytic Oxidizer**

Catalytic thermal oxidizers are a widely used control technology to control pollutants where the waste gas is passed through a flame area and then through a catalyst bed for complete combustion of the waste in the gas. This technology is typically applied for destruction of organic vapors. Design and operation of the catalytic thermal oxidizer is similar to that of the thermal oxidizer. In the catalytic thermal oxidizer, the waste gas passes through a flame zone where the gas is heated to between 650 °F and 1,000 °F and then passes through a catalyst bed where the oxidation reaction takes place. The catalyst allows the oxidation reaction to occur at a temperature below the typical flame destruction temperature which results in lower auxiliary fuel costs and reduces the overall size of the incinerator.

The main design parameters of the catalytic thermal oxidizer are time, turbulence, temperature, water vapor content, and catalyst selection. Destruction of the pollutant is achieved by thoroughly mixing the waste gas (turbulence) in the flame zone at or above the oxidizing temperature of the pollutant (temperature) required by the catalyst. The proper residence time (time) is achieved by maintaining a steady gas flow rate or space velocity through the catalyst bed. The catalyst is typically a single or mixed metal oxide selected for the specific pollutant and characteristics of the waste gas stream. While the catalyst is not consumed in the oxidation reaction, it can be coated or blinded by constituents in the waste gas. Blinding or catalyst deactivation can occur in waste gases containing chlorine, sulfur, phosphorous, bismuth, lead, arsenic, antimony, mercury, iron oxide, tin and zinc. Water vapor content influences system design by binding adsorption sites. Since landfill gas is typically 100% saturated, the catalytic system is required to be much larger than an equivalent system for other processes.

The catalytic thermal oxidizer is not considered a feasible VOC control technology for the municipal solid waste landfill because:

- (1) Gas Flow: Catalytic thermal oxidizers are not appropriate for gas streams with wide fluctuations in gas flow because destruction efficiency is dependent on the residence time of the pollutant in the combustion zone and proper mixing. Most thermal oxidizers are designed for a residence time of approximately 0.75 to 1.0 second. The length of the gas path is set at initial design by the physical dimensions of the combustion chamber and once this distance is set, it is extremely difficult to adjust. Flow must remain fairly constant to ensure the residence time required in the combustion chamber is achieved for proper destruction of the pollutant. As discussed under thermal oxidation above, Newton County Landfill can be subject to significant fluctuation in landfill gas requiring control.
 - (2) Acid Gas Production: Catalytic thermal oxidizers are not recommended for controlling waste gas streams containing significant amounts of halogen or sulfur containing compounds. When oxidized, these compounds can create sulfur dioxide, sulfuric acid, hydrogen chloride, and hydrogen fluoride which are extremely corrosive. Landfill gas is rich in halogen and sulfur containing compounds. Therefore, the production of corrosive gases makes the use of a thermal oxidizer not technologically feasible for VOC control.
 - (3) Catalyst Deactivation: The waste gas stream from the municipal solid waste landfill will contain significant amounts of siloxane compounds, sulfur compounds, and small amounts of lead, and mercury. These compounds could present significant problems resulting in premature deactivation of the catalyst bed or blinding. Therefore, the possibility of catalyst deactivation makes the use of a thermal oxidizer not technologically feasible for VOC control.
 - (4) Water Vapor Content: Landfill gas is typically 100% saturated with water vapor. Water vapor binds activation sites within the catalyst. As such, more catalyst is required than would be necessary for similar VOC loading at other types of processes. Therefore, the high water vapor content of landfill gas makes thermal oxidation not technologically feasible for VOC control.
- (d) **Open Flare**
- Flaring is a VOC control process in which a VOC waste stream is collected and combusted in an open flame using a specially designed burner tip, auxiliary fuel, and steam or air. A properly design flare can regularly achieve 98% or more destruction of VOC when controlling emission streams with a heat content of at least 300 Btu/cubic foot. Destruction efficiency is determined by the flame temperature, residence time in the combustion zone, completeness of mixing and available oxygen. Flares can be described as ground or elevated flares. Elevated flares are used when an open flame at ground level may cause dangerous conditions to people and emission units. Also, flares are often elevated to reduce noise, heat, smoke, and possible odors. Flares can be described as steam-assisted, air-assisted, pressure-assisted, or non-assisted. Steam-assisted flares inject steam into the combustion zone to promote mixing and to induce air into the flame. Steam-assisted flares are the most commonly installed flares. Air-assisted flares inject air to promote mixing and are used in installations without access to steam. Pressure-assisted flares use the vent stream pressure to promote mixing in a high pressure drop burner tip. Non-assisted flares do not have any provisions to enhance mixing and are used on vent streams with low heat contents and a low carbon/hydrogen ratio that burn without producing smoke. Flaring is an economical way to control sudden releases of large amounts of gas and can be used to control intermittent or fluctuating waste streams. Flaring is a feasible VOC control measure for the municipal solid waste landfill.

(e) **Enclosed Combustor**

An enclosed combustor is defined in 40 CFR 60, Subpart WWW as an enclosed firebox which maintains a relatively constant limited peak temperature generally using a limited supply of combustion air. Enclosed combustors include reciprocating internal combustion engines (RICE), boilers, leachate evaporators, and gas/steam turbines. An enclosed flare is considered an enclosed combustor. Enclosed combustors are used on waste gas streams with a sufficient heating value to support combustion without auxiliary fuel. Most enclosed combustors can accept more than one fuel source. A landfill gas fired engine or boiler can be fitted to use natural gas. Enclosed combustors can be installed in a manner to accept some variation in flow of the waste gas stream. For example, engines can be added to the source in stages. Three units could be installed with two units accepting normal process waste gas production and the third unit could be used during peak generation periods. Today, RICE and gas turbines are the most common control technologies used to generate electricity from landfill gas. Boilers can be used to generate steam for use in comfort heating and steam turbines. RICE, boilers, and gas turbines allow the source to extract the full economic and environmental benefit of the waste gas stream while controlling VOC emissions. Enclosed combustors can achieve a high level of control depending on the heating value of the waste gas. AP-42, Chapter 2.4, Table 2.4-3 indicates a range of control efficiencies for this class of control technologies. A summary is shown below:

Control Efficiencies for Landfill Gas Non-Methane Organic Carbon (NMOC)			
Control Device	NMOC Control Efficiency Range (% by weight)	Typical NMOC Control Efficiency (% by weight)	Rating
Boiler/Steam Turbine	96-99+%	98%	D
IC Engine	94-99+%	97.2%	E
Gas Turbine	90-99+%	94.4%	E
Flare	90-99+%	99.2%	B

The highest level of control is achieved by the flare. The use of an enclosed combustor is a feasible VOC control technology for the municipal solid waste landfill.

(f) **Biofiltration**

Biofiltration is a fairly new technique to control VOC emissions in waste gas streams. This technology has been installed in Germany and the Netherlands in full scale applications to control odor, VOC and air toxics from a variety of industrial and public sector pollution sources. Control efficiencies of 90% or better have been achieved in practice. In biofiltration, biodegradable volatile organic compounds are vented through a biologically active filtration media consisting of a filter bed containing bacteria or other microorganisms. Filter media can be very simple and include earth, peat or even sewage sludge. Typically, this system is effective in controlling waste gas streams with VOC concentrations of 2,000 ppm or less. Hot waste gas streams require cooling prior to entering the filter media to prevent killing off the bacteria. Biofiltration has very low energy requirements. IDEM, OAQ considers this technology to be an innovative control technology not in wide spread use. In addition, this control technology has not been shown to allow the Permittee to consistently achieve the 98% by weight reduction in non-methane organic carbon (NMOC) required by 40 CFR 60, Subpart WWW. Therefore, biofiltration is not a feasible VOC control technology.

(g) **Cryogenic Condensation**

Cryogenic condensation is a control process where a VOC rich stream is cooled in a heat exchanger to lower the vapor pressure of the VOC and increasing its transfer to the liquid phase. Cryogenic condensation is best employed on waste gas streams containing a high concentration of a single VOC where recovery of the VOC makes economic sense. In other words, the VOC is worth recovering because replacement VOC is very expensive. Cryogenic condensation is often used in the dry cleaning industry, degreasing, petroleum industry, and on VOC storage tanks. Destruction or removal efficiency of cryogenic condensation depends on the cold side temperature of the system. A technical bulletin from the U.S. EPA titled "Refrigerated Condensers for Control of Organic Air Emissions" (EPA-456/R-01-2004) was produced in 2001 and lists the following recovery efficiencies:

Removal Efficiencies	
Cold Side Temperature	Removal Efficiency
less than 0 °F	50-90%
less than -65 °F	90% or better
less than -100 °F	98% or better
less than -352 °F	99+%

The landfill gas contains a wide variety of different hazardous air pollutants and volatile organic compounds which do not have significant economic value. The liquid condensed from the landfill gas would have to be disposed of as a hazardous waste. Therefore, the use of cryogenic condensation is not considered a feasible VOC control technology for the municipal solid waste landfill.

(h) **Wet Scrubber**

Wet scrubbers remove air pollutants by inertial or diffusional impaction, reaction with a sorbent or reagent slurry, or absorption into a liquid solvent. Wet scrubbers have traditionally been employed to control inorganic fumes, volatile organic compounds, PM, PM10, PM2.5, and hazardous air pollutants in the particulate form. Packed bed scrubbers and impingement plate towers are the most common design of wet scrubber for VOC control. Packed bed scrubbers remove gaseous pollutants from a waste gas stream by contacting the contaminated gas with a scrubbing liquid that absorbs or chemically reacts with the pollutant. The waste gas stream enters the bottom of the column while the scrubbing liquid is introduced at the top of the column, countercurrent flow. In order to maximize the removal efficiency of the scrubber, contact between the gas and the scrubbing liquid must be maximized. This is accomplished in a packed-bed scrubber by filling the reaction vessel with a specially designed packing material. The packing provides additional surface area for the mass transfer between the gas and the liquid to occur. In an impingement-plate scrubber, the reaction vessel is filled with horizontally mounted plates with openings to allow the gas to pass through instead of a packing. The waste gas enters the bottom of the vessel, while the scrubbing liquid enters the top, countercurrent flow. Contact between the liquid and the gas takes place on the plates.

Wet scrubbers can handle air flows between 1,000 SCFM and 75,000 SCFM and temperatures between 40 °F and 700 °F. For VOC control, control efficiencies range from 70% to 99%, depending on the VOC involved. The main design parameters used in wet scrubber design are tower diameter, packing depth, and recirculation flow rate. Once the wet scrubber is in operation and the tower diameter is set, gas velocity and recirculation rates should stay fairly constant to achieve peak performance. Wet scrubbing technology has been employed by landfills to remove hydrogen sulfide and carbon dioxide from landfill gas in the production of compressed natural gas, but it is

more commonly used in controlling inorganic gases such as HCL than for VOC or HAP removal. Wet scrubbing for the control of VOC from the municipal solid waste landfill is a feasible control technology.

(i) **Beneficial Reuse**

The landfill gas collected from the municipal solid waste landfill contains approximately 50% methane by weight and it is common practice today to use the heat content of this low-Btu waste gas to generate electricity or process heat for use at the landfill or in nearby industry. Newton County Landfill currently sends approximately 1,000 acfm of landfill gas via pipeline to an industrial park next to the landfill for beneficial use by egg carton manufacturer (INIG Inc.) to power its drying equipment as part of its production process. The use of landfill gas from Newton County Landfill will displace other fossil fuels used by local industry and will result in a net reduction in VOC emissions. The beneficial reuse of landfill gas is feasible control technology.

Step 3: Rank the Remaining Control Technologies by Control Effectiveness

IDEM, OAQ has ranked the remaining control technologies by control effectiveness as follows:

- (1) Enclosed Combustor, Flare (90-99%, by AP-42, Chapter 2.4, 98% by 40 CFR 60, Subpart WWW)
- (2) Enclosed Combustor/ Beneficial Reuse, Leachate Evaporator (98% by 40 CFR 60, Subpart WWW)
- (3) Open Flare (90-99%, by AP-42, Chapter 2.4, 98% by 40 CFR 60, Subpart WWW)
- (4) Wet Scrubber (70% to 99% by U.S. Fact Sheet EPA-452/F-03-015)

IDEM is aware that that the above control technologies may be able to periodically achieve control efficiencies that exceed 98% under certain operating conditions. However, BACT must be achievable on a consistent basis under normal operational conditions. BACT limitations do not necessarily reflect the highest possible control efficiency achievable by the technology on which the emission limitation is based. The permitting authority has the discretion to base the emission limitation on a control efficiency that is somewhat lower than the optimal level. There are several reasons why the permitting authority might choose to do this. One reason is that the control efficiency achievable through the use of the technology may fluctuate so that it would not always achieve its optimal control efficiency. In that case, setting the emission limitation to reflect the highest control efficiency would make violations of the permit unavoidable. To account for this possibility, a permitting authority must be allowed a certain degree of discretion to set the emission limitation at a level that does not necessarily reflect the highest possible control efficiency, but will allow the Permittee to achieve compliance consistently. While we recognize that greater than 98% may be achievable as an average during testing, IDEM allows for sources to include a safety factor, or margin of error, to allow for minor variations in the operation of the emission units and the control device.

The Permittee has selected the use of an enclosed combustor, enclosed flare and leachate evaporator, which is the control technology with the highest demonstrated control efficiency. The leachate evaporator also constitutes beneficial reuse. Therefore, further analysis is not required.

Step 4: Evaluate the Most Effective Controls and Document the Results

The following table lists the proposed BACT determination for this facility along with the existing BACT determinations for similar emission units for controlling landfill gas (LFG) NMOC or VOC. All data in the table is based on the information obtained from the permit application submitted by the Applicant, the U.S. EPA RACT/BACT/LAER Clearinghouse (RBLC), Indiana issued permits, and electronic versions of permits available at the websites of other permitting agencies.

Enclosed Combustor - Enclosed Flare

RACT / BACT / LAER CLEARING HOUSE DATA							
Permit or RBLIC ID	Facility Name	Issued Date & Last Updated	Process Description	Capacity	Pollutant	Limitation	Control Method Required to Comply With Limitation
RI-0023 (LAER)	Ridgewood Power Management	05/12/09 & 03/05/10	MSW Landfill	630 SCFM	VOC	99% by wt. reduction NMOC or to 5 ppmv, dry, as hexane, corrected to 3% O2	ULE Enclosed Siloxane Regeneration Flare
SSM 111-35382-00017 (BACT-Other)	Newton County Landfill	proposed	MSW Landfill	102,030,469 Mg 11,500 SCFM	VOC	98% by wt. reduction NMOC or to 20 ppmv, dry, as hexane, corrected to 3% O2	Enclosed Flare #3 6,000 SCFM; Enclosed Flare #4 5,500 SCFM
RI-0023 (PSD-BACT)	Ridgewood Power Management	05/12/09 & 03/05/10	MSW Landfill	3,000 SCFM	VOC	98% by wt. reduction NMOC or to 20 ppmv, dry, as hexane, corrected to 3% O2	Enclosed Flare
OH-0358 (not specified)	Rumpke Sanitary Landfill	09/24/2013 & 05/04/2016	MSW Landfill	not specified	VOC	98% by wt. reduction NMOC or to 20 ppmv, dry, as hexane, corrected to 3% O2	enclosed flare
OH-0330 (BACT-Other)	Rumpke Sanitary Landfill	12/23/2008 & 05/18/2010	MSW Landfill	NMOC below 50 MG/yr	VOC	488.14 TPY NMOC 20 ppmv, dry as hexane, corrected to 3% O2	4 enclosed combustors and 5 open flares

Enclosed Combustor - RICE

RACT / BACT / LAER CLEARING HOUSE DATA							
Permit or RBLIC ID	Facility Name	Issued Date & Last Updated	Process Description	Capacity	Pollutant	Limitation	Control Method Required to Comply With Limitation
SSM 111-35382-00017 (BACT-Other)	Newton County Landfill	proposed	MSW Landfill	11,500 SCFM	VOC	98% by wt. reduction NMOC or to 20 ppmv, dry, as hexane, corrected to 3% O2	LFG RICE
Enclosed Flares and LFG RICE, subject to 40 CFR 60, Subpart WWW					NMOC	98% by wt. reduction NMOC or to 20 ppmv, dry, as hexane, corrected to 3% O2	multiple methods
NJ-0068 (BACT-Other)	Manchester Renewable Power	10/06/2006 & 07/24/2008	LFG RICE	2,233 HP	VOC	0.16 g/hp.hr	none
CA-1162 (PSD-BACT)	J&A Santa Maria, LLC	12/18/2006 & 04/22/2008	LFG RICE	1,468 HP	VOC	0.4 g/hp.hr	none
IN-0184 (BACT-Other)	General Motors Ft. Wayne	11/19/2013 & 05/05/2016	LFG RICE	2,242 HP	VOC	0.56 g/hp.hr	good combustion practices
MI-0411 (PSD-BACT)	Venice Park RDF	12/11/2013 & 05/05/2016	LFG RICE	1.6 MW	VOC	0.63 g/hp.hr	none
FL-0326 (BACT-Other)	Medley Landfill	08/25/11 & 12/12/2011	LFG RICE	588 SCFM	VOC	1.0 g/hp.hr	none
LFG RICE, subject to 40 CFR 60, Subpart JJJJ			LFG RICE	NA	VOC	1.0 g/bhp.hr or 80 ppmv, dry at 15% as propane	none

RBLC Review

The RBLC contains several entries for enclosed combustors consisting of enclosed flares and reciprocating internal combustion engines (RICE) controlling landfill gas emissions subject to the requirements of 40 CFR 60, Subpart WWW. The RBLC also includes multiple entries for RICE engines using treated landfill gas to generate electricity subject to the requirements of 40 CFR 60, Subpart JJJJ. All of the entries for landfill gas controlled by enclosed flares or RICE subject to the requirements of 40 CFR 60, Subpart WWW require either 98% by weight reduction of non-methane organic carbon (NMOC) or a reduction in NMOC to 20 ppmv, dry, as hexane, corrected to 3% O₂. The highest level of control for a landfill gas flare is 99% by weight reduction in NMOC or to 5% ppmv, dry, as hexane, corrected to 3% O₂ at Ridgewood Power Management in Rhode Island, which was determined to be the lowest achievable emission rate (LAER). Ridgewood Power Management uses the ultra-low emission (ULE) flare on a siloxane treatment unit to control landfill gas emissions during catalyst regeneration and is designed to control 630 SCFM on an intermittent basis. The siloxane regeneration flares is considered a landfill gas treatment vent and is subject to the requirements of 40 CFR 60, Subpart WWW in addition to LAER. In the same determination, RI-0023, Ridgewood Power Management installed a 3,000 SCFM flare at 98% by weight reduction in NMOC or to a level of 20 ppmv, dry as hexane, corrected to 3% O₂. Ridgewood Power Management found the ULE flare was LAER but not PSD-BACT.

The landfill gas flare proposed by Newton County Landfill will achieve 98% by weight reduction in NMOC or to a level of 20 ppmv, dry, as hexane, corrected to 3% O₂. While this is a lesser level of control compared to an ultra-low emission (ULE) flare, the landfill gas flares are designed to operate at 5,500 SCFM and 6,000 SCFM, respectively. This is a much higher flow rate than the ultra-low emission (ULE) flare flow rate in the Rhode Island determination. IDEM, OAQ requested Newton County Landfill to evaluate the cost effectiveness of the ULE flare for the current project compared to a standard enclosed flare. Newton County Landfill estimates the additional 1% reduction in VOC (from 98% to 99% by weight VOC removal), approximately 2.8 tons per year, from using a ULE flare will result in an additional incremental cost of \$70,106 per ton of VOC reduced. The full cost analysis is included as Appendix A to the Technical Support Document. IDEM, OAQ has reviewed the information provided by the Permittee and has determined the use of a ULE flare is not cost effective for this project, due to the high incremental cost compared to a standard enclosed flare. The Permittee has proposed top BACT for VOC control of landfill gas as 98% by weight reduction in NMOC or to a level of 20 ppmv, dry, as hexane, corrected to 3% O₂.

There are several RBLC entries for RICE subject to the requirements of 40 CFR 60, Subpart JJJJ. The VOC limit from 40 CFR 60, Subpart JJJJ is 1.0 g/bhp.hr or to a level of 80 ppmv, dry, as propane, at 15% O₂. The lowest reported emission rate listed in the RBLC is 0.16 g/hp.hr for the Manchester Renewable Power determination in New Jersey, which is entered as "other case by case BACT." To compare the emission limits, the emission limitations need to be converted to a common basis. The 40 CFR 60, Subpart JJJJ VOC limit can be converted to ppmv, dry, as hexane, corrected to 3% O₂ as follows:

ppmv, dry, as hexane, 15% O₂ = 80 ppmv as propane x 86.18 MW of hexane / 44.10 MW of propane
ppmv, dry, as hexane, 15% O₂ = 156.34 ppmv
ppmv, dry, as hexane at 3% O₂ = 156.34 ppmv @ 3% x (20.9 - 3) / (20.9 - 15)
ppmv, dry, as hexane at 3% O₂ = 474.31 ppmv

The allowable VOC emission rate under 40 CFR 60, Subpart WWW (20 ppmv, dry, as hexane, corrected to 3% O₂) is lower than the allowable emission rate under 40 CFR 60, Subpart JJJJ (converted as 474.31 ppmv, dry, as hexane at 3% O₂). The Manchester Renewable Power BACT of 0.16 g/hp.hr is 16% of the 40 CFR 60, Subpart JJJJ emission limitation. This would equate to 75.9 ppm NMOC, dry, as hexane at 3% O₂, assuming 16% of the converted 40 CFR 60, Subpart JJJJ emission limit of 474.31 ppmv, dry, as hexane at 3% O₂. For landfill gas-fired RICE,

compliance with the requirements of 40 CFR 60, Subpart WWW would constitute BACT. Looking at the typical control efficiencies for landfill gas from AP-42, the flare has a typical control efficiency of 99.2% by weight (B Rating), while the IC engine typically achieves 97.2% by weight control (E Rating). The flare and RICE would be required to achieve a minimum 98% by weight control efficiency pursuant to 40 CFR 60, Subpart WWW. In practice, the flare should achieve slightly higher control efficiency but the RICE would have the environmental benefit of displacing other fuels in the production of electricity.

Applicant Proposal

The applicant proposes the following as VOC BACT for the municipal solid waste landfill:

- (a) VOC emissions from the municipal solid waste landfill will be controlled by a flare or reciprocating internal combustion engine (RICE), or leachate evaporator.
- (b) VOC control will be by achieving a 98% by weight reduction in non-methane organic carbon (NMOC) collected from the landfill or by reducing the outlet concentration of NMOC to 20 ppmv on a dry basis as hexane corrected to 3% oxygen.

Step 5: Select BACT

IDEM, OAQ has established BACT to control VOC emissions from the municipal solid waste landfill as follows:

Pursuant to 326 IAC 8-1-6 (BACT) and significant source modification number 111-35382-00017, the Permittee shall control VOC emissions from the municipal solid waste landfill using Best Available Control Technology (BACT), which has been determined to be the following:

- (a) VOC in the landfill gas collected from the municipal solid waste landfill shall be controlled at all times by one (1) or more of the enclosed flares (emission units #3 and #4) and/or by sending the landfill gas offsite for sale or for beneficial reuse onsite in the leachate evaporator.
- (b) For any landfill gas that this not sent offsite for sale or used onsite for beneficial reuse in the leachate evaporator, VOC (measured as NMOC) in the landfill gas collected from the municipal solid waste landfill shall be controlled by one (1) or more of the enclosed flares (emission units #3 and #4) and each enclosed flare shall have at an NMOC control efficiency of 98% by weight or more or shall reduce the outlet concentration of NMOC to equal to or less than 20 ppmv, dry, as hexane corrected to 3% oxygen.



Summary Report

Landfill Name or Identifier: Newton County Landfill - After Expansion

Date: Tuesday, June 21, 2016

Description/Comments:

NMOC as hexane from Tier II testing.

About LandGEM:

First-Order Decomposition Rate Equation:

$$Q_{CH_4} = \sum_{i=1}^n \sum_{j=0.1}^1 kL_o \left(\frac{M_i}{10} \right) e^{-kt_{ij}}$$

Where,

Q_{CH_4} = 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 i^{th} year (Mg)

t_{ij} = age of the j^{th} section of waste mass M_i accepted in the i^{th} 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 conventional 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	1995	
Landfill Closure Year (with 80-year limit)	2062	
Actual Closure Year (without limit)	2062	
Have Model Calculate Closure Year?	Yes	
Waste Design Capacity	102,030,469	<i>megagrams</i>

MODEL PARAMETERS

Methane Generation Rate, k	0.040	<i>year⁻¹</i>
Potential Methane Generation Capacity, L ₀	100	<i>m³/Mg</i>
NMOC Concentration	816	<i>ppmv as hexane</i>
Methane Content	50	<i>% by volume</i>

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)
1995	19,833	21,816	0	0
1996	494,471	543,918	19,833	21,816
1997	1,007,319	1,108,051	514,304	565,734
1998	1,180,692	1,298,761	1,521,623	1,673,785
1999	1,110,011	1,221,012	2,702,315	2,972,547
2000	804,851	885,336	3,812,326	4,193,559
2001	1,070,932	1,178,025	4,617,177	5,078,895
2002	918,705	1,010,576	5,688,109	6,256,920
2003	1,001,825	1,102,008	6,606,814	7,267,495
2004	1,532,335	1,685,569	7,608,639	8,369,503
2005	1,950,159	2,145,175	9,140,974	10,055,071
2006	2,367,310	2,604,041	11,091,133	12,200,246
2007	2,446,821	2,691,503	13,458,443	14,804,287
2008	2,731,542	3,004,696	15,905,264	17,495,790
2009	2,950,469	3,245,516	18,636,806	20,500,487
2010	2,695,145	2,964,660	21,587,275	23,746,003
2011	2,508,097	2,758,907	24,282,420	26,710,662
2012	2,387,338	2,626,072	26,790,517	29,469,569
2013	2,357,627	2,593,390	29,177,855	32,095,641
2014	1,464,511	1,610,962	31,535,482	34,689,030
2015	1,464,511	1,610,962	32,999,993	36,299,992
2016	1,464,511	1,610,962	34,464,504	37,910,954
2017	1,464,511	1,610,962	35,929,015	39,521,917
2018	1,464,511	1,610,962	37,393,526	41,132,879
2019	1,464,511	1,610,962	38,858,037	42,743,841
2020	1,464,511	1,610,962	40,322,548	44,354,803
2021	1,464,511	1,610,962	41,787,059	45,965,765
2022	1,464,511	1,610,962	43,251,570	47,576,727
2023	1,464,511	1,610,962	44,716,081	49,187,689
2024	1,464,511	1,610,962	46,180,592	50,798,651
2025	1,464,511	1,610,962	47,645,103	52,409,613
2026	1,464,511	1,610,962	49,109,614	54,020,575
2027	1,464,511	1,610,962	50,574,125	55,631,538
2028	1,464,511	1,610,962	52,038,636	57,242,500
2029	1,464,511	1,610,962	53,503,147	58,853,462
2030	1,464,511	1,610,962	54,967,658	60,464,424
2031	1,464,511	1,610,962	56,432,169	62,075,386
2032	1,464,511	1,610,962	57,896,680	63,686,348
2033	1,464,511	1,610,962	59,361,191	65,297,310
2034	1,464,511	1,610,962	60,825,702	66,908,272

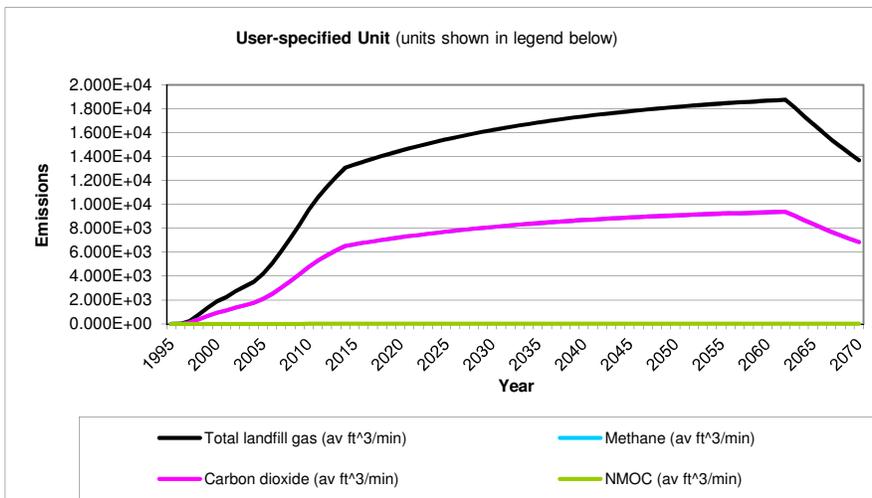
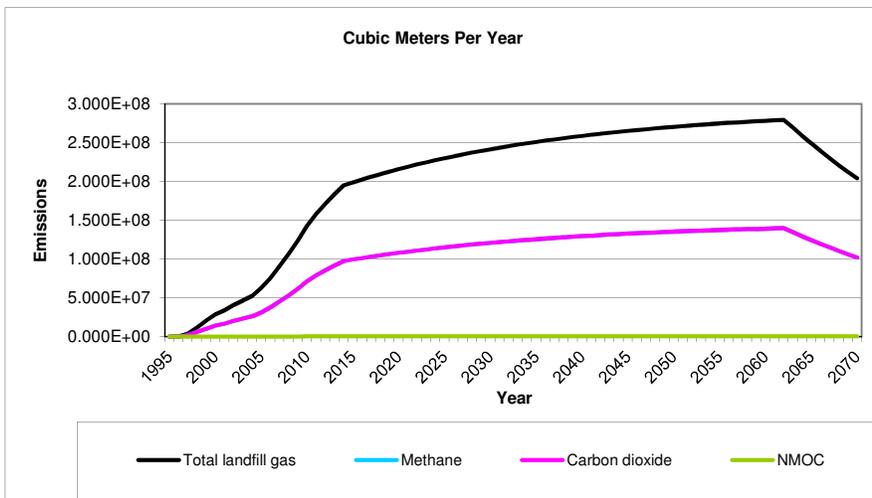
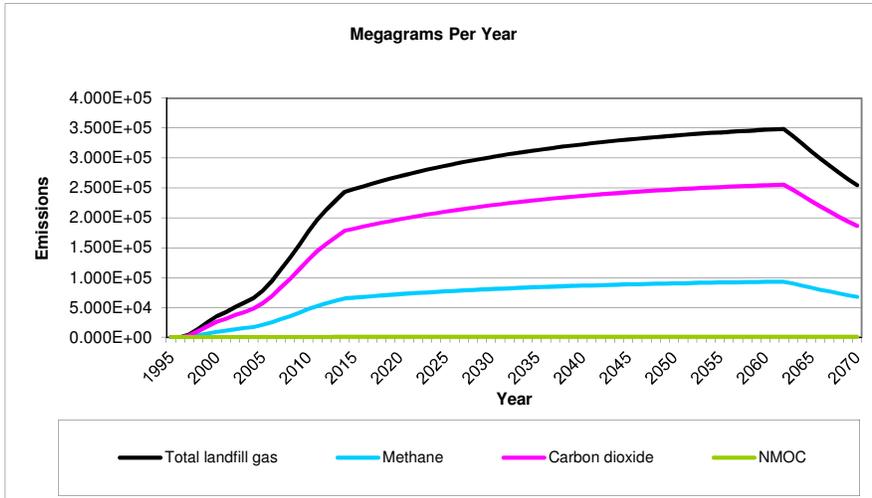
WASTE ACCEPTANCE RATES (Continued)

Year	Waste Accepted		Waste-In-Place	
	(Mg/year)	(short tons/year)	(Mg)	(short tons)
2035	1,464,511	1,610,962	62,290,213	68,519,234
2036	1,464,511	1,610,962	63,754,724	70,130,196
2037	1,464,511	1,610,962	65,219,235	71,741,159
2038	1,464,511	1,610,962	66,683,746	73,352,121
2039	1,464,511	1,610,962	68,148,257	74,963,083
2040	1,464,511	1,610,962	69,612,768	76,574,045
2041	1,464,511	1,610,962	71,077,279	78,185,007
2042	1,464,511	1,610,962	72,541,790	79,795,969
2043	1,464,511	1,610,962	74,006,301	81,406,931
2044	1,464,511	1,610,962	75,470,812	83,017,893
2045	1,464,511	1,610,962	76,935,323	84,628,855
2046	1,464,511	1,610,962	78,399,834	86,239,817
2047	1,464,511	1,610,962	79,864,345	87,850,780
2048	1,464,511	1,610,962	81,328,856	89,461,742
2049	1,464,511	1,610,962	82,793,367	91,072,704
2050	1,464,511	1,610,962	84,257,878	92,683,666
2051	1,464,511	1,610,962	85,722,389	94,294,628
2052	1,464,511	1,610,962	87,186,900	95,905,590
2053	1,464,511	1,610,962	88,651,411	97,516,552
2054	1,464,511	1,610,962	90,115,922	99,127,514
2055	1,464,511	1,610,962	91,580,433	100,738,476
2056	1,464,511	1,610,962	93,044,944	102,349,438
2057	1,464,511	1,610,962	94,509,455	103,960,401
2058	1,464,511	1,610,962	95,973,966	105,571,363
2059	1,464,511	1,610,962	97,438,477	107,182,325
2060	1,464,511	1,610,962	98,902,988	108,793,287
2061	1,464,511	1,610,962	100,367,499	110,404,249
2062	198,459	218,305	101,832,010	112,015,211
2063	0	0	102,030,469	112,233,516
2064	0	0	102,030,469	112,233,516
2065	0	0	102,030,469	112,233,516
2066	0	0	102,030,469	112,233,516
2067	0	0	102,030,469	112,233,516
2068	0	0	102,030,469	112,233,516
2069	0	0	102,030,469	112,233,516
2070	0	0	102,030,469	112,233,516
2071	0	0	102,030,469	112,233,516
2072	0	0	102,030,469	112,233,516
2073	0	0	102,030,469	112,233,516
2074	0	0	102,030,469	112,233,516

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		
	1,1,1,2,2-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		

Graphs



Results

Year	Total landfill gas			Methane		
	(Mg/year)	(m ³ /year)	(av ft ³ /min)	(Mg/year)	(m ³ /year)	(av ft ³ /min)
1995	0	0	0	0	0	0
1996	1.946E+02	1.558E+05	1.047E+01	5.199E+01	7.792E+04	5.236E+00
1997	5.039E+03	4.035E+06	2.711E+02	1.346E+03	2.018E+06	1.356E+02
1998	1.473E+04	1.179E+07	7.923E+02	3.934E+03	5.896E+06	3.962E+02
1999	2.574E+04	2.061E+07	1.385E+03	6.874E+03	1.030E+07	6.923E+02
2000	3.562E+04	2.852E+07	1.916E+03	9.514E+03	1.426E+07	9.582E+02
2001	4.212E+04	3.373E+07	2.266E+03	1.125E+04	1.686E+07	1.133E+03
2002	5.098E+04	4.082E+07	2.743E+03	1.362E+04	2.041E+07	1.371E+03
2003	5.799E+04	4.644E+07	3.120E+03	1.549E+04	2.322E+07	1.560E+03
2004	6.555E+04	5.249E+07	3.527E+03	1.751E+04	2.625E+07	1.763E+03
2005	7.802E+04	6.247E+07	4.198E+03	2.084E+04	3.124E+07	2.099E+03
2006	9.410E+04	7.535E+07	5.063E+03	2.513E+04	3.767E+07	2.531E+03
2007	1.136E+05	9.099E+07	6.114E+03	3.035E+04	4.550E+07	3.057E+03
2008	1.332E+05	1.067E+08	7.166E+03	3.558E+04	5.333E+07	3.583E+03
2009	1.548E+05	1.239E+08	8.327E+03	4.134E+04	6.197E+07	4.164E+03
2010	1.777E+05	1.423E+08	9.558E+03	4.745E+04	7.113E+07	4.779E+03
2011	1.971E+05	1.579E+08	1.061E+04	5.266E+04	7.893E+07	5.303E+03
2012	2.140E+05	1.714E+08	1.151E+04	5.717E+04	8.569E+07	5.757E+03
2013	2.291E+05	1.834E+08	1.232E+04	6.118E+04	9.171E+07	6.162E+03
2014	2.432E+05	1.948E+08	1.309E+04	6.496E+04	9.738E+07	6.543E+03
2015	2.480E+05	1.986E+08	1.335E+04	6.626E+04	9.931E+07	6.673E+03
2016	2.527E+05	2.023E+08	1.360E+04	6.750E+04	1.012E+08	6.798E+03
2017	2.572E+05	2.059E+08	1.384E+04	6.869E+04	1.030E+08	6.918E+03
2018	2.614E+05	2.094E+08	1.407E+04	6.983E+04	1.047E+08	7.033E+03
2019	2.656E+05	2.126E+08	1.429E+04	7.093E+04	1.063E+08	7.144E+03
2020	2.695E+05	2.158E+08	1.450E+04	7.199E+04	1.079E+08	7.250E+03
2021	2.733E+05	2.189E+08	1.471E+04	7.301E+04	1.094E+08	7.353E+03
2022	2.770E+05	2.218E+08	1.490E+04	7.398E+04	1.109E+08	7.451E+03
2023	2.805E+05	2.246E+08	1.509E+04	7.492E+04	1.123E+08	7.545E+03
2024	2.839E+05	2.273E+08	1.527E+04	7.582E+04	1.137E+08	7.636E+03
2025	2.871E+05	2.299E+08	1.545E+04	7.669E+04	1.149E+08	7.723E+03
2026	2.902E+05	2.324E+08	1.561E+04	7.752E+04	1.162E+08	7.807E+03
2027	2.932E+05	2.348E+08	1.578E+04	7.832E+04	1.174E+08	7.888E+03
2028	2.961E+05	2.371E+08	1.593E+04	7.909E+04	1.185E+08	7.965E+03
2029	2.988E+05	2.393E+08	1.608E+04	7.982E+04	1.197E+08	8.039E+03
2030	3.015E+05	2.414E+08	1.622E+04	8.053E+04	1.207E+08	8.111E+03
2031	3.040E+05	2.435E+08	1.636E+04	8.121E+04	1.217E+08	8.179E+03
2032	3.065E+05	2.454E+08	1.649E+04	8.187E+04	1.227E+08	8.245E+03
2033	3.088E+05	2.473E+08	1.662E+04	8.250E+04	1.237E+08	8.308E+03
2034	3.111E+05	2.491E+08	1.674E+04	8.310E+04	1.246E+08	8.369E+03
2035	3.133E+05	2.509E+08	1.686E+04	8.368E+04	1.254E+08	8.428E+03
2036	3.154E+05	2.525E+08	1.697E+04	8.424E+04	1.263E+08	8.484E+03
2037	3.174E+05	2.541E+08	1.708E+04	8.477E+04	1.271E+08	8.538E+03
2038	3.193E+05	2.557E+08	1.718E+04	8.529E+04	1.278E+08	8.590E+03
2039	3.212E+05	2.572E+08	1.728E+04	8.578E+04	1.286E+08	8.639E+03
2040	3.229E+05	2.586E+08	1.737E+04	8.626E+04	1.293E+08	8.687E+03
2041	3.246E+05	2.600E+08	1.747E+04	8.672E+04	1.300E+08	8.733E+03
2042	3.263E+05	2.613E+08	1.755E+04	8.715E+04	1.306E+08	8.777E+03
2043	3.279E+05	2.625E+08	1.764E+04	8.758E+04	1.313E+08	8.820E+03
2044	3.294E+05	2.637E+08	1.772E+04	8.798E+04	1.319E+08	8.861E+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)
2045	3.308E+05	2.649E+08	1.780E+04	8.837E+04	1.325E+08	8.900E+03
2046	3.322E+05	2.660E+08	1.787E+04	8.874E+04	1.330E+08	8.937E+03
2047	3.336E+05	2.671E+08	1.795E+04	8.910E+04	1.336E+08	8.974E+03
2048	3.349E+05	2.681E+08	1.802E+04	8.945E+04	1.341E+08	9.008E+03
2049	3.361E+05	2.691E+08	1.808E+04	8.978E+04	1.346E+08	9.042E+03
2050	3.373E+05	2.701E+08	1.815E+04	9.010E+04	1.350E+08	9.074E+03
2051	3.384E+05	2.710E+08	1.821E+04	9.040E+04	1.355E+08	9.105E+03
2052	3.395E+05	2.719E+08	1.827E+04	9.070E+04	1.359E+08	9.134E+03
2053	3.406E+05	2.727E+08	1.833E+04	9.098E+04	1.364E+08	9.163E+03
2054	3.416E+05	2.736E+08	1.838E+04	9.125E+04	1.368E+08	9.190E+03
2055	3.426E+05	2.743E+08	1.843E+04	9.151E+04	1.372E+08	9.216E+03
2056	3.435E+05	2.751E+08	1.848E+04	9.176E+04	1.375E+08	9.242E+03
2057	3.444E+05	2.758E+08	1.853E+04	9.200E+04	1.379E+08	9.266E+03
2058	3.453E+05	2.765E+08	1.858E+04	9.223E+04	1.383E+08	9.289E+03
2059	3.461E+05	2.772E+08	1.862E+04	9.246E+04	1.386E+08	9.311E+03
2060	3.469E+05	2.778E+08	1.867E+04	9.267E+04	1.389E+08	9.333E+03
2061	3.477E+05	2.784E+08	1.871E+04	9.287E+04	1.392E+08	9.354E+03
2062	3.484E+05	2.790E+08	1.875E+04	9.307E+04	1.395E+08	9.373E+03
2063	3.367E+05	2.696E+08	1.812E+04	8.994E+04	1.348E+08	9.058E+03
2064	3.235E+05	2.591E+08	1.741E+04	8.642E+04	1.295E+08	8.703E+03
2065	3.108E+05	2.489E+08	1.672E+04	8.303E+04	1.245E+08	8.362E+03
2066	2.986E+05	2.391E+08	1.607E+04	7.977E+04	1.196E+08	8.034E+03
2067	2.869E+05	2.298E+08	1.544E+04	7.664E+04	1.149E+08	7.719E+03
2068	2.757E+05	2.208E+08	1.483E+04	7.364E+04	1.104E+08	7.416E+03
2069	2.649E+05	2.121E+08	1.425E+04	7.075E+04	1.061E+08	7.125E+03
2070	2.545E+05	2.038E+08	1.369E+04	6.798E+04	1.019E+08	6.846E+03
2071	2.445E+05	1.958E+08	1.316E+04	6.531E+04	9.790E+07	6.578E+03
2072	2.349E+05	1.881E+08	1.264E+04	6.275E+04	9.406E+07	6.320E+03
2073	2.257E+05	1.807E+08	1.214E+04	6.029E+04	9.037E+07	6.072E+03
2074	2.169E+05	1.737E+08	1.167E+04	5.793E+04	8.683E+07	5.834E+03
2075	2.084E+05	1.668E+08	1.121E+04	5.565E+04	8.342E+07	5.605E+03
2076	2.002E+05	1.603E+08	1.077E+04	5.347E+04	8.015E+07	5.385E+03
2077	1.923E+05	1.540E+08	1.035E+04	5.138E+04	7.701E+07	5.174E+03
2078	1.848E+05	1.480E+08	9.943E+03	4.936E+04	7.399E+07	4.971E+03
2079	1.776E+05	1.422E+08	9.553E+03	4.743E+04	7.109E+07	4.776E+03
2080	1.706E+05	1.366E+08	9.178E+03	4.557E+04	6.830E+07	4.589E+03
2081	1.639E+05	1.312E+08	8.818E+03	4.378E+04	6.562E+07	4.409E+03
2082	1.575E+05	1.261E+08	8.473E+03	4.206E+04	6.305E+07	4.236E+03
2083	1.513E+05	1.212E+08	8.140E+03	4.041E+04	6.058E+07	4.070E+03
2084	1.454E+05	1.164E+08	7.821E+03	3.883E+04	5.820E+07	3.911E+03
2085	1.397E+05	1.118E+08	7.514E+03	3.731E+04	5.592E+07	3.757E+03
2086	1.342E+05	1.075E+08	7.220E+03	3.584E+04	5.373E+07	3.610E+03
2087	1.289E+05	1.032E+08	6.937E+03	3.444E+04	5.162E+07	3.468E+03
2088	1.239E+05	9.919E+07	6.665E+03	3.309E+04	4.960E+07	3.332E+03
2089	1.190E+05	9.530E+07	6.403E+03	3.179E+04	4.765E+07	3.202E+03
2090	1.143E+05	9.157E+07	6.152E+03	3.054E+04	4.578E+07	3.076E+03
2091	1.099E+05	8.798E+07	5.911E+03	2.935E+04	4.399E+07	2.956E+03
2092	1.056E+05	8.453E+07	5.679E+03	2.820E+04	4.226E+07	2.840E+03
2093	1.014E+05	8.121E+07	5.457E+03	2.709E+04	4.061E+07	2.728E+03
2094	9.744E+04	7.803E+07	5.243E+03	2.603E+04	3.901E+07	2.621E+03
2095	9.362E+04	7.497E+07	5.037E+03	2.501E+04	3.748E+07	2.519E+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)
2096	8.995E+04	7.203E+07	4.840E+03	2.403E+04	3.601E+07	2.420E+03
2097	8.642E+04	6.920E+07	4.650E+03	2.308E+04	3.460E+07	2.325E+03
2098	8.303E+04	6.649E+07	4.467E+03	2.218E+04	3.325E+07	2.234E+03
2099	7.978E+04	6.388E+07	4.292E+03	2.131E+04	3.194E+07	2.146E+03
2100	7.665E+04	6.138E+07	4.124E+03	2.047E+04	3.069E+07	2.062E+03
2101	7.365E+04	5.897E+07	3.962E+03	1.967E+04	2.949E+07	1.981E+03
2102	7.076E+04	5.666E+07	3.807E+03	1.890E+04	2.833E+07	1.903E+03
2103	6.798E+04	5.444E+07	3.658E+03	1.816E+04	2.722E+07	1.829E+03
2104	6.532E+04	5.230E+07	3.514E+03	1.745E+04	2.615E+07	1.757E+03
2105	6.276E+04	5.025E+07	3.376E+03	1.676E+04	2.513E+07	1.688E+03
2106	6.030E+04	4.828E+07	3.244E+03	1.611E+04	2.414E+07	1.622E+03
2107	5.793E+04	4.639E+07	3.117E+03	1.547E+04	2.319E+07	1.558E+03
2108	5.566E+04	4.457E+07	2.995E+03	1.487E+04	2.228E+07	1.497E+03
2109	5.348E+04	4.282E+07	2.877E+03	1.428E+04	2.141E+07	1.439E+03
2110	5.138E+04	4.114E+07	2.764E+03	1.372E+04	2.057E+07	1.382E+03
2111	4.937E+04	3.953E+07	2.656E+03	1.319E+04	1.976E+07	1.328E+03
2112	4.743E+04	3.798E+07	2.552E+03	1.267E+04	1.899E+07	1.276E+03
2113	4.557E+04	3.649E+07	2.452E+03	1.217E+04	1.825E+07	1.226E+03
2114	4.378E+04	3.506E+07	2.356E+03	1.170E+04	1.753E+07	1.178E+03
2115	4.207E+04	3.369E+07	2.263E+03	1.124E+04	1.684E+07	1.132E+03
2116	4.042E+04	3.236E+07	2.175E+03	1.080E+04	1.618E+07	1.087E+03
2117	3.883E+04	3.110E+07	2.089E+03	1.037E+04	1.555E+07	1.045E+03
2118	3.731E+04	2.988E+07	2.007E+03	9.966E+03	1.494E+07	1.004E+03
2119	3.585E+04	2.870E+07	1.929E+03	9.575E+03	1.435E+07	9.643E+02
2120	3.444E+04	2.758E+07	1.853E+03	9.200E+03	1.379E+07	9.265E+02
2121	3.309E+04	2.650E+07	1.780E+03	8.839E+03	1.325E+07	8.902E+02
2122	3.179E+04	2.546E+07	1.711E+03	8.492E+03	1.273E+07	8.553E+02
2123	3.055E+04	2.446E+07	1.643E+03	8.159E+03	1.223E+07	8.217E+02
2124	2.935E+04	2.350E+07	1.579E+03	7.839E+03	1.175E+07	7.895E+02
2125	2.820E+04	2.258E+07	1.517E+03	7.532E+03	1.129E+07	7.586E+02
2126	2.709E+04	2.169E+07	1.458E+03	7.237E+03	1.085E+07	7.288E+02
2127	2.603E+04	2.084E+07	1.400E+03	6.953E+03	1.042E+07	7.002E+02
2128	2.501E+04	2.003E+07	1.346E+03	6.680E+03	1.001E+07	6.728E+02
2129	2.403E+04	1.924E+07	1.293E+03	6.418E+03	9.621E+06	6.464E+02
2130	2.309E+04	1.849E+07	1.242E+03	6.167E+03	9.243E+06	6.211E+02
2131	2.218E+04	1.776E+07	1.193E+03	5.925E+03	8.881E+06	5.967E+02
2132	2.131E+04	1.707E+07	1.147E+03	5.693E+03	8.533E+06	5.733E+02
2133	2.048E+04	1.640E+07	1.102E+03	5.469E+03	8.198E+06	5.508E+02
2134	1.967E+04	1.575E+07	1.058E+03	5.255E+03	7.877E+06	5.292E+02
2135	1.890E+04	1.514E+07	1.017E+03	5.049E+03	7.568E+06	5.085E+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)
1995	0	0	0	0	0	0
1996	1.426E+02	7.792E+04	5.236E+00	4.558E-01	1.272E+02	8.544E-03
1997	3.693E+03	2.018E+06	1.356E+02	1.180E+01	3.293E+03	2.212E-01
1998	1.079E+04	5.896E+06	3.962E+02	3.449E+01	9.623E+03	6.465E-01
1999	1.886E+04	1.030E+07	6.923E+02	6.028E+01	1.682E+04	1.130E+00
2000	2.610E+04	1.426E+07	9.582E+02	8.342E+01	2.327E+04	1.564E+00
2001	3.087E+04	1.686E+07	1.133E+03	9.865E+01	2.752E+04	1.849E+00
2002	3.736E+04	2.041E+07	1.371E+03	1.194E+02	3.331E+04	2.238E+00
2003	4.250E+04	2.322E+07	1.560E+03	1.358E+02	3.789E+04	2.546E+00
2004	4.804E+04	2.625E+07	1.763E+03	1.535E+02	4.283E+04	2.878E+00
2005	5.718E+04	3.124E+07	2.099E+03	1.827E+02	5.098E+04	3.425E+00
2006	6.896E+04	3.767E+07	2.531E+03	2.204E+02	6.148E+04	4.131E+00
2007	8.328E+04	4.550E+07	3.057E+03	2.662E+02	7.425E+04	4.989E+00
2008	9.761E+04	5.333E+07	3.583E+03	3.120E+02	8.703E+04	5.847E+00
2009	1.134E+05	6.197E+07	4.164E+03	3.625E+02	1.011E+05	6.795E+00
2010	1.302E+05	7.113E+07	4.779E+03	4.161E+02	1.161E+05	7.800E+00
2011	1.445E+05	7.893E+07	5.303E+03	4.617E+02	1.288E+05	8.655E+00
2012	1.569E+05	8.569E+07	5.757E+03	5.013E+02	1.398E+05	9.396E+00
2013	1.679E+05	9.171E+07	6.162E+03	5.365E+02	1.497E+05	1.006E+01
2014	1.782E+05	9.738E+07	6.543E+03	5.696E+02	1.589E+05	1.068E+01
2015	1.818E+05	9.931E+07	6.673E+03	5.810E+02	1.621E+05	1.089E+01
2016	1.852E+05	1.012E+08	6.798E+03	5.918E+02	1.651E+05	1.109E+01
2017	1.885E+05	1.030E+08	6.918E+03	6.023E+02	1.680E+05	1.129E+01
2018	1.916E+05	1.047E+08	7.033E+03	6.123E+02	1.708E+05	1.148E+01
2019	1.946E+05	1.063E+08	7.144E+03	6.220E+02	1.735E+05	1.166E+01
2020	1.975E+05	1.079E+08	7.250E+03	6.313E+02	1.761E+05	1.183E+01
2021	2.003E+05	1.094E+08	7.353E+03	6.402E+02	1.786E+05	1.200E+01
2022	2.030E+05	1.109E+08	7.451E+03	6.487E+02	1.810E+05	1.216E+01
2023	2.056E+05	1.123E+08	7.545E+03	6.569E+02	1.833E+05	1.231E+01
2024	2.080E+05	1.137E+08	7.636E+03	6.648E+02	1.855E+05	1.246E+01
2025	2.104E+05	1.149E+08	7.723E+03	6.724E+02	1.876E+05	1.260E+01
2026	2.127E+05	1.162E+08	7.807E+03	6.797E+02	1.896E+05	1.274E+01
2027	2.149E+05	1.174E+08	7.888E+03	6.867E+02	1.916E+05	1.287E+01
2028	2.170E+05	1.185E+08	7.965E+03	6.935E+02	1.935E+05	1.300E+01
2029	2.190E+05	1.197E+08	8.039E+03	6.999E+02	1.953E+05	1.312E+01
2030	2.210E+05	1.207E+08	8.111E+03	7.062E+02	1.970E+05	1.324E+01
2031	2.228E+05	1.217E+08	8.179E+03	7.121E+02	1.987E+05	1.335E+01
2032	2.246E+05	1.227E+08	8.245E+03	7.179E+02	2.003E+05	1.346E+01
2033	2.264E+05	1.237E+08	8.308E+03	7.234E+02	2.018E+05	1.356E+01
2034	2.280E+05	1.246E+08	8.369E+03	7.287E+02	2.033E+05	1.366E+01
2035	2.296E+05	1.254E+08	8.428E+03	7.338E+02	2.047E+05	1.375E+01
2036	2.311E+05	1.263E+08	8.484E+03	7.386E+02	2.061E+05	1.385E+01
2037	2.326E+05	1.271E+08	8.538E+03	7.433E+02	2.074E+05	1.393E+01
2038	2.340E+05	1.278E+08	8.590E+03	7.479E+02	2.086E+05	1.402E+01
2039	2.354E+05	1.286E+08	8.639E+03	7.522E+02	2.098E+05	1.410E+01
2040	2.367E+05	1.293E+08	8.687E+03	7.564E+02	2.110E+05	1.418E+01
2041	2.379E+05	1.300E+08	8.733E+03	7.604E+02	2.121E+05	1.425E+01
2042	2.391E+05	1.306E+08	8.777E+03	7.642E+02	2.132E+05	1.432E+01
2043	2.403E+05	1.313E+08	8.820E+03	7.679E+02	2.142E+05	1.439E+01
2044	2.414E+05	1.319E+08	8.861E+03	7.714E+02	2.152E+05	1.446E+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)
2045	2.425E+05	1.325E+08	8.900E+03	7.749E+02	2.162E+05	1.452E+01
2046	2.435E+05	1.330E+08	8.937E+03	7.781E+02	2.171E+05	1.459E+01
2047	2.445E+05	1.336E+08	8.974E+03	7.813E+02	2.180E+05	1.464E+01
2048	2.454E+05	1.341E+08	9.008E+03	7.843E+02	2.188E+05	1.470E+01
2049	2.463E+05	1.346E+08	9.042E+03	7.872E+02	2.196E+05	1.476E+01
2050	2.472E+05	1.350E+08	9.074E+03	7.900E+02	2.204E+05	1.481E+01
2051	2.480E+05	1.355E+08	9.105E+03	7.927E+02	2.211E+05	1.486E+01
2052	2.489E+05	1.359E+08	9.134E+03	7.953E+02	2.219E+05	1.491E+01
2053	2.496E+05	1.364E+08	9.163E+03	7.977E+02	2.226E+05	1.495E+01
2054	2.504E+05	1.368E+08	9.190E+03	8.001E+02	2.232E+05	1.500E+01
2055	2.511E+05	1.372E+08	9.216E+03	8.024E+02	2.239E+05	1.504E+01
2056	2.518E+05	1.375E+08	9.242E+03	8.046E+02	2.245E+05	1.508E+01
2057	2.524E+05	1.379E+08	9.266E+03	8.067E+02	2.251E+05	1.512E+01
2058	2.531E+05	1.383E+08	9.289E+03	8.087E+02	2.256E+05	1.516E+01
2059	2.537E+05	1.386E+08	9.311E+03	8.107E+02	2.262E+05	1.520E+01
2060	2.543E+05	1.389E+08	9.333E+03	8.126E+02	2.267E+05	1.523E+01
2061	2.548E+05	1.392E+08	9.354E+03	8.144E+02	2.272E+05	1.527E+01
2062	2.554E+05	1.395E+08	9.373E+03	8.161E+02	2.277E+05	1.530E+01
2063	2.468E+05	1.348E+08	9.058E+03	7.887E+02	2.200E+05	1.478E+01
2064	2.371E+05	1.295E+08	8.703E+03	7.577E+02	2.114E+05	1.420E+01
2065	2.278E+05	1.245E+08	8.362E+03	7.280E+02	2.031E+05	1.365E+01
2066	2.189E+05	1.196E+08	8.034E+03	6.995E+02	1.951E+05	1.311E+01
2067	2.103E+05	1.149E+08	7.719E+03	6.720E+02	1.875E+05	1.260E+01
2068	2.020E+05	1.104E+08	7.416E+03	6.457E+02	1.801E+05	1.210E+01
2069	1.941E+05	1.061E+08	7.125E+03	6.204E+02	1.731E+05	1.163E+01
2070	1.865E+05	1.019E+08	6.846E+03	5.961E+02	1.663E+05	1.117E+01
2071	1.792E+05	9.790E+07	6.578E+03	5.727E+02	1.598E+05	1.073E+01
2072	1.722E+05	9.406E+07	6.320E+03	5.502E+02	1.535E+05	1.031E+01
2073	1.654E+05	9.037E+07	6.072E+03	5.287E+02	1.475E+05	9.909E+00
2074	1.589E+05	8.683E+07	5.834E+03	5.079E+02	1.417E+05	9.521E+00
2075	1.527E+05	8.342E+07	5.605E+03	4.880E+02	1.361E+05	9.148E+00
2076	1.467E+05	8.015E+07	5.385E+03	4.689E+02	1.308E+05	8.789E+00
2077	1.410E+05	7.701E+07	5.174E+03	4.505E+02	1.257E+05	8.444E+00
2078	1.354E+05	7.399E+07	4.971E+03	4.328E+02	1.207E+05	8.113E+00
2079	1.301E+05	7.109E+07	4.776E+03	4.159E+02	1.160E+05	7.795E+00
2080	1.250E+05	6.830E+07	4.589E+03	3.995E+02	1.115E+05	7.489E+00
2081	1.201E+05	6.562E+07	4.409E+03	3.839E+02	1.071E+05	7.196E+00
2082	1.154E+05	6.305E+07	4.236E+03	3.688E+02	1.029E+05	6.914E+00
2083	1.109E+05	6.058E+07	4.070E+03	3.544E+02	9.886E+04	6.642E+00
2084	1.065E+05	5.820E+07	3.911E+03	3.405E+02	9.498E+04	6.382E+00
2085	1.024E+05	5.592E+07	3.757E+03	3.271E+02	9.126E+04	6.132E+00
2086	9.835E+04	5.373E+07	3.610E+03	3.143E+02	8.768E+04	5.891E+00
2087	9.449E+04	5.162E+07	3.468E+03	3.020E+02	8.424E+04	5.660E+00
2088	9.079E+04	4.960E+07	3.332E+03	2.901E+02	8.094E+04	5.438E+00
2089	8.723E+04	4.765E+07	3.202E+03	2.788E+02	7.777E+04	5.225E+00
2090	8.381E+04	4.578E+07	3.076E+03	2.678E+02	7.472E+04	5.020E+00
2091	8.052E+04	4.399E+07	2.956E+03	2.573E+02	7.179E+04	4.823E+00
2092	7.736E+04	4.226E+07	2.840E+03	2.472E+02	6.897E+04	4.634E+00
2093	7.433E+04	4.061E+07	2.728E+03	2.375E+02	6.627E+04	4.453E+00
2094	7.141E+04	3.901E+07	2.621E+03	2.282E+02	6.367E+04	4.278E+00
2095	6.861E+04	3.748E+07	2.519E+03	2.193E+02	6.117E+04	4.110E+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)
2096	6.592E+04	3.601E+07	2.420E+03	2.107E+02	5.878E+04	3.949E+00
2097	6.334E+04	3.460E+07	2.325E+03	2.024E+02	5.647E+04	3.794E+00
2098	6.086E+04	3.325E+07	2.234E+03	1.945E+02	5.426E+04	3.645E+00
2099	5.847E+04	3.194E+07	2.146E+03	1.869E+02	5.213E+04	3.503E+00
2100	5.618E+04	3.069E+07	2.062E+03	1.795E+02	5.008E+04	3.365E+00
2101	5.397E+04	2.949E+07	1.981E+03	1.725E+02	4.812E+04	3.233E+00
2102	5.186E+04	2.833E+07	1.903E+03	1.657E+02	4.623E+04	3.106E+00
2103	4.982E+04	2.722E+07	1.829E+03	1.592E+02	4.442E+04	2.985E+00
2104	4.787E+04	2.615E+07	1.757E+03	1.530E+02	4.268E+04	2.868E+00
2105	4.599E+04	2.513E+07	1.688E+03	1.470E+02	4.101E+04	2.755E+00
2106	4.419E+04	2.414E+07	1.622E+03	1.412E+02	3.940E+04	2.647E+00
2107	4.246E+04	2.319E+07	1.558E+03	1.357E+02	3.785E+04	2.543E+00
2108	4.079E+04	2.228E+07	1.497E+03	1.304E+02	3.637E+04	2.444E+00
2109	3.919E+04	2.141E+07	1.439E+03	1.253E+02	3.494E+04	2.348E+00
2110	3.766E+04	2.057E+07	1.382E+03	1.203E+02	3.357E+04	2.256E+00
2111	3.618E+04	1.976E+07	1.328E+03	1.156E+02	3.226E+04	2.167E+00
2112	3.476E+04	1.899E+07	1.276E+03	1.111E+02	3.099E+04	2.082E+00
2113	3.340E+04	1.825E+07	1.226E+03	1.067E+02	2.978E+04	2.001E+00
2114	3.209E+04	1.753E+07	1.178E+03	1.025E+02	2.861E+04	1.922E+00
2115	3.083E+04	1.684E+07	1.132E+03	9.853E+01	2.749E+04	1.847E+00
2116	2.962E+04	1.618E+07	1.087E+03	9.466E+01	2.641E+04	1.774E+00
2117	2.846E+04	1.555E+07	1.045E+03	9.095E+01	2.537E+04	1.705E+00
2118	2.734E+04	1.494E+07	1.004E+03	8.739E+01	2.438E+04	1.638E+00
2119	2.627E+04	1.435E+07	9.643E+02	8.396E+01	2.342E+04	1.574E+00
2120	2.524E+04	1.379E+07	9.265E+02	8.067E+01	2.250E+04	1.512E+00
2121	2.425E+04	1.325E+07	8.902E+02	7.750E+01	2.162E+04	1.453E+00
2122	2.330E+04	1.273E+07	8.553E+02	7.446E+01	2.077E+04	1.396E+00
2123	2.239E+04	1.223E+07	8.217E+02	7.155E+01	1.996E+04	1.341E+00
2124	2.151E+04	1.175E+07	7.895E+02	6.874E+01	1.918E+04	1.289E+00
2125	2.067E+04	1.129E+07	7.586E+02	6.604E+01	1.843E+04	1.238E+00
2126	1.986E+04	1.085E+07	7.288E+02	6.345E+01	1.770E+04	1.189E+00
2127	1.908E+04	1.042E+07	7.002E+02	6.097E+01	1.701E+04	1.143E+00
2128	1.833E+04	1.001E+07	6.728E+02	5.858E+01	1.634E+04	1.098E+00
2129	1.761E+04	9.621E+06	6.464E+02	5.628E+01	1.570E+04	1.055E+00
2130	1.692E+04	9.243E+06	6.211E+02	5.407E+01	1.509E+04	1.014E+00
2131	1.626E+04	8.881E+06	5.967E+02	5.195E+01	1.449E+04	9.738E-01
2132	1.562E+04	8.533E+06	5.733E+02	4.992E+01	1.393E+04	9.356E-01
2133	1.501E+04	8.198E+06	5.508E+02	4.796E+01	1.338E+04	8.990E-01
2134	1.442E+04	7.877E+06	5.292E+02	4.608E+01	1.285E+04	8.637E-01
2135	1.385E+04	7.568E+06	5.085E+02	4.427E+01	1.235E+04	8.298E-01



Summary Report

Landfill Name or Identifier: Newton County Landfill - Prior to Expansion

Date: Tuesday, June 21, 2016

Description/Comments:

NMOC as hexane from Tier II testing.

About LandGEM:

First-Order Decomposition Rate Equation:

$$Q_{CH_4} = \sum_{i=1}^n \sum_{j=0.1}^1 kL_o \left(\frac{M_i}{10} \right) e^{-kt_{ij}}$$

Where,

Q_{CH_4} = 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 i^{th} year (Mg)

t_{ij} = age of the j^{th} section of waste mass M_i accepted in the i^{th} 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 conventional 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	1995	
Landfill Closure Year (with 80-year limit)	2009	
Actual Closure Year (without limit)	2009	
Have Model Calculate Closure Year?	Yes	
Waste Design Capacity	20,683,404	<i>megagrams</i>

MODEL PARAMETERS

Methane Generation Rate, k	0.040	<i>year⁻¹</i>
Potential Methane Generation Capacity, L ₀	100	<i>m³/Mg</i>
NMOC Concentration	816	<i>ppmv as hexane</i>
Methane Content	50	<i>% by volume</i>

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)
1995	19,833	21,816	0	0
1996	494,471	543,918	19,833	21,816
1997	1,007,319	1,108,051	514,304	565,734
1998	1,180,692	1,298,761	1,521,623	1,673,785
1999	1,110,011	1,221,012	2,702,315	2,972,547
2000	804,851	885,336	3,812,326	4,193,559
2001	1,070,932	1,178,025	4,617,177	5,078,895
2002	918,705	1,010,576	5,688,109	6,256,920
2003	1,001,825	1,102,008	6,606,814	7,267,495
2004	1,532,335	1,685,569	7,608,639	8,369,503
2005	1,950,159	2,145,175	9,140,974	10,055,071
2006	2,367,310	2,604,041	11,091,133	12,200,246
2007	2,446,821	2,691,503	13,458,443	14,804,287
2008	2,731,542	3,004,696	15,905,264	17,495,790
2009	2,046,598	2,251,258	18,636,806	20,500,487
2010	0	0	20,683,404	22,751,744
2011	0	0	20,683,404	22,751,744
2012	0	0	20,683,404	22,751,744
2013	0	0	20,683,404	22,751,744
2014	0	0	20,683,404	22,751,744
2015	0	0	20,683,404	22,751,744
2016	0	0	20,683,404	22,751,744
2017	0	0	20,683,404	22,751,744
2018	0	0	20,683,404	22,751,744
2019	0	0	20,683,404	22,751,744
2020	0	0	20,683,404	22,751,744
2021	0	0	20,683,404	22,751,744
2022	0	0	20,683,404	22,751,744
2023	0	0	20,683,404	22,751,744
2024	0	0	20,683,404	22,751,744
2025	0	0	20,683,404	22,751,744
2026	0	0	20,683,404	22,751,744
2027	0	0	20,683,404	22,751,744
2028	0	0	20,683,404	22,751,744
2029	0	0	20,683,404	22,751,744
2030	0	0	20,683,404	22,751,744
2031	0	0	20,683,404	22,751,744
2032	0	0	20,683,404	22,751,744
2033	0	0	20,683,404	22,751,744
2034	0	0	20,683,404	22,751,744

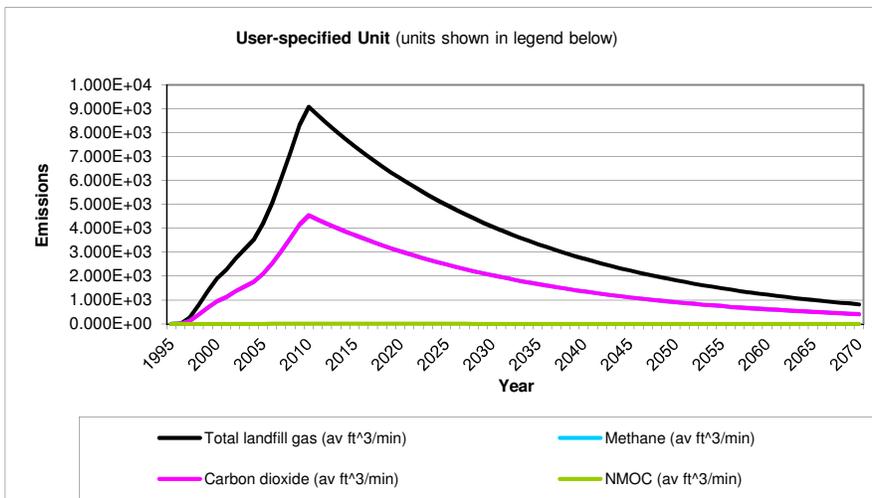
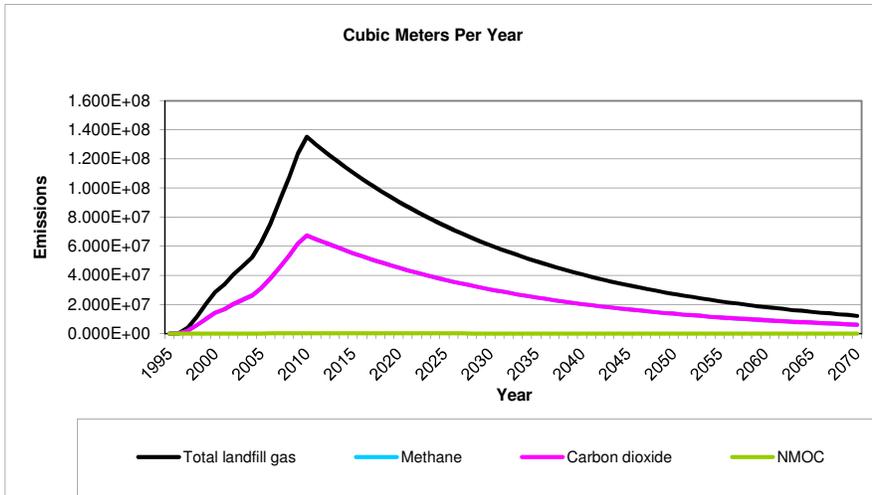
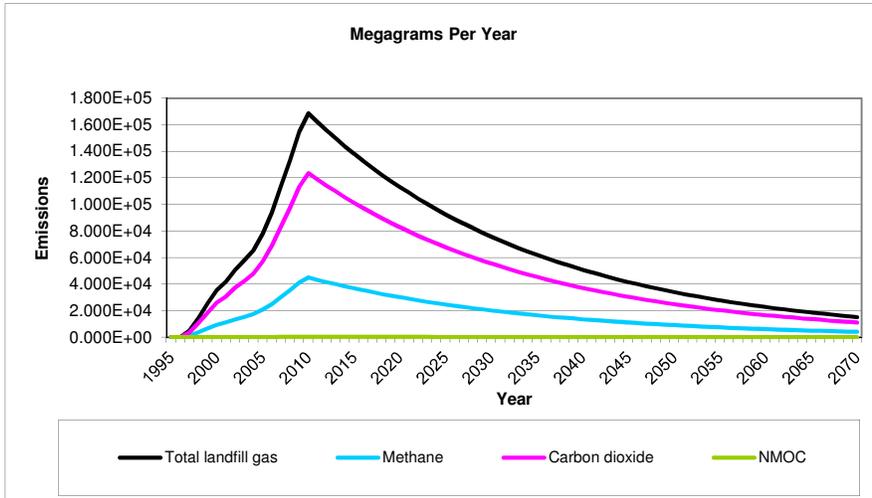
WASTE ACCEPTANCE RATES (Continued)

Year	Waste Accepted		Waste-In-Place	
	(Mg/year)	(short tons/year)	(Mg)	(short tons)
2035	0	0	20,683,404	22,751,744
2036	0	0	20,683,404	22,751,744
2037	0	0	20,683,404	22,751,744
2038	0	0	20,683,404	22,751,744
2039	0	0	20,683,404	22,751,744
2040	0	0	20,683,404	22,751,744
2041	0	0	20,683,404	22,751,744
2042	0	0	20,683,404	22,751,744
2043	0	0	20,683,404	22,751,744
2044	0	0	20,683,404	22,751,744
2045	0	0	20,683,404	22,751,744
2046	0	0	20,683,404	22,751,744
2047	0	0	20,683,404	22,751,744
2048	0	0	20,683,404	22,751,744
2049	0	0	20,683,404	22,751,744
2050	0	0	20,683,404	22,751,744
2051	0	0	20,683,404	22,751,744
2052	0	0	20,683,404	22,751,744
2053	0	0	20,683,404	22,751,744
2054	0	0	20,683,404	22,751,744
2055	0	0	20,683,404	22,751,744
2056	0	0	20,683,404	22,751,744
2057	0	0	20,683,404	22,751,744
2058	0	0	20,683,404	22,751,744
2059	0	0	20,683,404	22,751,744
2060	0	0	20,683,404	22,751,744
2061	0	0	20,683,404	22,751,744
2062	0	0	20,683,404	22,751,744
2063	0	0	20,683,404	22,751,744
2064	0	0	20,683,404	22,751,744
2065	0	0	20,683,404	22,751,744
2066	0	0	20,683,404	22,751,744
2067	0	0	20,683,404	22,751,744
2068	0	0	20,683,404	22,751,744
2069	0	0	20,683,404	22,751,744
2070	0	0	20,683,404	22,751,744
2071	0	0	20,683,404	22,751,744
2072	0	0	20,683,404	22,751,744
2073	0	0	20,683,404	22,751,744
2074	0	0	20,683,404	22,751,744

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		
	1,1,1,2,2-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		

Graphs



Results

Year	Total landfill gas			Methane		
	(Mg/year)	(m ³ /year)	(av ft ³ /min)	(Mg/year)	(m ³ /year)	(av ft ³ /min)
1995	0	0	0	0	0	0
1996	1.946E+02	1.558E+05	1.047E+01	5.199E+01	7.792E+04	5.236E+00
1997	5.039E+03	4.035E+06	2.711E+02	1.346E+03	2.018E+06	1.356E+02
1998	1.473E+04	1.179E+07	7.923E+02	3.934E+03	5.896E+06	3.962E+02
1999	2.574E+04	2.061E+07	1.385E+03	6.874E+03	1.030E+07	6.923E+02
2000	3.562E+04	2.852E+07	1.916E+03	9.514E+03	1.426E+07	9.582E+02
2001	4.212E+04	3.373E+07	2.266E+03	1.125E+04	1.686E+07	1.133E+03
2002	5.098E+04	4.082E+07	2.743E+03	1.362E+04	2.041E+07	1.371E+03
2003	5.799E+04	4.644E+07	3.120E+03	1.549E+04	2.322E+07	1.560E+03
2004	6.555E+04	5.249E+07	3.527E+03	1.751E+04	2.625E+07	1.763E+03
2005	7.802E+04	6.247E+07	4.198E+03	2.084E+04	3.124E+07	2.099E+03
2006	9.410E+04	7.535E+07	5.063E+03	2.513E+04	3.767E+07	2.531E+03
2007	1.136E+05	9.099E+07	6.114E+03	3.035E+04	4.550E+07	3.057E+03
2008	1.332E+05	1.067E+08	7.166E+03	3.558E+04	5.333E+07	3.583E+03
2009	1.548E+05	1.239E+08	8.327E+03	4.134E+04	6.197E+07	4.164E+03
2010	1.688E+05	1.352E+08	9.081E+03	4.509E+04	6.758E+07	4.541E+03
2011	1.622E+05	1.299E+08	8.725E+03	4.332E+04	6.493E+07	4.363E+03
2012	1.558E+05	1.248E+08	8.383E+03	4.162E+04	6.238E+07	4.192E+03
2013	1.497E+05	1.199E+08	8.054E+03	3.999E+04	5.994E+07	4.027E+03
2014	1.438E+05	1.152E+08	7.739E+03	3.842E+04	5.759E+07	3.869E+03
2015	1.382E+05	1.107E+08	7.435E+03	3.691E+04	5.533E+07	3.718E+03
2016	1.328E+05	1.063E+08	7.144E+03	3.547E+04	5.316E+07	3.572E+03
2017	1.276E+05	1.021E+08	6.863E+03	3.407E+04	5.107E+07	3.432E+03
2018	1.226E+05	9.814E+07	6.594E+03	3.274E+04	4.907E+07	3.297E+03
2019	1.178E+05	9.430E+07	6.336E+03	3.145E+04	4.715E+07	3.168E+03
2020	1.131E+05	9.060E+07	6.087E+03	3.022E+04	4.530E+07	3.044E+03
2021	1.087E+05	8.705E+07	5.849E+03	2.904E+04	4.352E+07	2.924E+03
2022	1.044E+05	8.363E+07	5.619E+03	2.790E+04	4.182E+07	2.810E+03
2023	1.003E+05	8.035E+07	5.399E+03	2.680E+04	4.018E+07	2.699E+03
2024	9.641E+04	7.720E+07	5.187E+03	2.575E+04	3.860E+07	2.594E+03
2025	9.263E+04	7.418E+07	4.984E+03	2.474E+04	3.709E+07	2.492E+03
2026	8.900E+04	7.127E+07	4.788E+03	2.377E+04	3.563E+07	2.394E+03
2027	8.551E+04	6.847E+07	4.601E+03	2.284E+04	3.424E+07	2.300E+03
2028	8.216E+04	6.579E+07	4.420E+03	2.195E+04	3.289E+07	2.210E+03
2029	7.894E+04	6.321E+07	4.247E+03	2.108E+04	3.160E+07	2.123E+03
2030	7.584E+04	6.073E+07	4.080E+03	2.026E+04	3.037E+07	2.040E+03
2031	7.287E+04	5.835E+07	3.920E+03	1.946E+04	2.917E+07	1.960E+03
2032	7.001E+04	5.606E+07	3.767E+03	1.870E+04	2.803E+07	1.883E+03
2033	6.727E+04	5.386E+07	3.619E+03	1.797E+04	2.693E+07	1.810E+03
2034	6.463E+04	5.175E+07	3.477E+03	1.726E+04	2.588E+07	1.739E+03
2035	6.209E+04	4.972E+07	3.341E+03	1.659E+04	2.486E+07	1.670E+03
2036	5.966E+04	4.777E+07	3.210E+03	1.594E+04	2.389E+07	1.605E+03
2037	5.732E+04	4.590E+07	3.084E+03	1.531E+04	2.295E+07	1.542E+03
2038	5.507E+04	4.410E+07	2.963E+03	1.471E+04	2.205E+07	1.482E+03
2039	5.291E+04	4.237E+07	2.847E+03	1.413E+04	2.119E+07	1.423E+03
2040	5.084E+04	4.071E+07	2.735E+03	1.358E+04	2.035E+07	1.368E+03
2041	4.884E+04	3.911E+07	2.628E+03	1.305E+04	1.956E+07	1.314E+03
2042	4.693E+04	3.758E+07	2.525E+03	1.254E+04	1.879E+07	1.262E+03
2043	4.509E+04	3.611E+07	2.426E+03	1.204E+04	1.805E+07	1.213E+03
2044	4.332E+04	3.469E+07	2.331E+03	1.157E+04	1.734E+07	1.165E+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)
2045	4.162E+04	3.333E+07	2.239E+03	1.112E+04	1.666E+07	1.120E+03
2046	3.999E+04	3.202E+07	2.152E+03	1.068E+04	1.601E+07	1.076E+03
2047	3.842E+04	3.077E+07	2.067E+03	1.026E+04	1.538E+07	1.034E+03
2048	3.692E+04	2.956E+07	1.986E+03	9.861E+03	1.478E+07	9.931E+02
2049	3.547E+04	2.840E+07	1.908E+03	9.474E+03	1.420E+07	9.541E+02
2050	3.408E+04	2.729E+07	1.833E+03	9.103E+03	1.364E+07	9.167E+02
2051	3.274E+04	2.622E+07	1.762E+03	8.746E+03	1.311E+07	8.808E+02
2052	3.146E+04	2.519E+07	1.693E+03	8.403E+03	1.259E+07	8.463E+02
2053	3.022E+04	2.420E+07	1.626E+03	8.073E+03	1.210E+07	8.131E+02
2054	2.904E+04	2.325E+07	1.562E+03	7.757E+03	1.163E+07	7.812E+02
2055	2.790E+04	2.234E+07	1.501E+03	7.453E+03	1.117E+07	7.506E+02
2056	2.681E+04	2.147E+07	1.442E+03	7.160E+03	1.073E+07	7.211E+02
2057	2.576E+04	2.062E+07	1.386E+03	6.880E+03	1.031E+07	6.929E+02
2058	2.475E+04	1.982E+07	1.331E+03	6.610E+03	9.908E+06	6.657E+02
2059	2.378E+04	1.904E+07	1.279E+03	6.351E+03	9.519E+06	6.396E+02
2060	2.284E+04	1.829E+07	1.229E+03	6.102E+03	9.146E+06	6.145E+02
2061	2.195E+04	1.757E+07	1.181E+03	5.862E+03	8.787E+06	5.904E+02
2062	2.109E+04	1.689E+07	1.135E+03	5.632E+03	8.443E+06	5.673E+02
2063	2.026E+04	1.622E+07	1.090E+03	5.412E+03	8.112E+06	5.450E+02
2064	1.947E+04	1.559E+07	1.047E+03	5.199E+03	7.794E+06	5.236E+02
2065	1.870E+04	1.498E+07	1.006E+03	4.996E+03	7.488E+06	5.031E+02
2066	1.797E+04	1.439E+07	9.668E+02	4.800E+03	7.194E+06	4.834E+02
2067	1.726E+04	1.382E+07	9.289E+02	4.611E+03	6.912E+06	4.644E+02
2068	1.659E+04	1.328E+07	8.924E+02	4.431E+03	6.641E+06	4.462E+02
2069	1.594E+04	1.276E+07	8.575E+02	4.257E+03	6.381E+06	4.287E+02
2070	1.531E+04	1.226E+07	8.238E+02	4.090E+03	6.131E+06	4.119E+02
2071	1.471E+04	1.178E+07	7.915E+02	3.930E+03	5.890E+06	3.958E+02
2072	1.413E+04	1.132E+07	7.605E+02	3.776E+03	5.659E+06	3.802E+02
2073	1.358E+04	1.087E+07	7.307E+02	3.628E+03	5.437E+06	3.653E+02
2074	1.305E+04	1.045E+07	7.020E+02	3.485E+03	5.224E+06	3.510E+02
2075	1.254E+04	1.004E+07	6.745E+02	3.349E+03	5.019E+06	3.372E+02
2076	1.204E+04	9.645E+06	6.480E+02	3.217E+03	4.823E+06	3.240E+02
2077	1.157E+04	9.267E+06	6.226E+02	3.091E+03	4.633E+06	3.113E+02
2078	1.112E+04	8.903E+06	5.982E+02	2.970E+03	4.452E+06	2.991E+02
2079	1.068E+04	8.554E+06	5.748E+02	2.854E+03	4.277E+06	2.874E+02
2080	1.026E+04	8.219E+06	5.522E+02	2.742E+03	4.109E+06	2.761E+02
2081	9.862E+03	7.897E+06	5.306E+02	2.634E+03	3.948E+06	2.653E+02
2082	9.475E+03	7.587E+06	5.098E+02	2.531E+03	3.794E+06	2.549E+02
2083	9.103E+03	7.290E+06	4.898E+02	2.432E+03	3.645E+06	2.449E+02
2084	8.746E+03	7.004E+06	4.706E+02	2.336E+03	3.502E+06	2.353E+02
2085	8.403E+03	6.729E+06	4.521E+02	2.245E+03	3.365E+06	2.261E+02
2086	8.074E+03	6.465E+06	4.344E+02	2.157E+03	3.233E+06	2.172E+02
2087	7.757E+03	6.212E+06	4.174E+02	2.072E+03	3.106E+06	2.087E+02
2088	7.453E+03	5.968E+06	4.010E+02	1.991E+03	2.984E+06	2.005E+02
2089	7.161E+03	5.734E+06	3.853E+02	1.913E+03	2.867E+06	1.926E+02
2090	6.880E+03	5.509E+06	3.702E+02	1.838E+03	2.755E+06	1.851E+02
2091	6.610E+03	5.293E+06	3.557E+02	1.766E+03	2.647E+06	1.778E+02
2092	6.351E+03	5.086E+06	3.417E+02	1.696E+03	2.543E+06	1.709E+02
2093	6.102E+03	4.886E+06	3.283E+02	1.630E+03	2.443E+06	1.642E+02
2094	5.863E+03	4.695E+06	3.154E+02	1.566E+03	2.347E+06	1.577E+02
2095	5.633E+03	4.511E+06	3.031E+02	1.505E+03	2.255E+06	1.515E+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)
2096	5.412E+03	4.334E+06	2.912E+02	1.446E+03	2.167E+06	1.456E+02
2097	5.200E+03	4.164E+06	2.798E+02	1.389E+03	2.082E+06	1.399E+02
2098	4.996E+03	4.001E+06	2.688E+02	1.334E+03	2.000E+06	1.344E+02
2099	4.800E+03	3.844E+06	2.583E+02	1.282E+03	1.922E+06	1.291E+02
2100	4.612E+03	3.693E+06	2.481E+02	1.232E+03	1.847E+06	1.241E+02
2101	4.431E+03	3.548E+06	2.384E+02	1.184E+03	1.774E+06	1.192E+02
2102	4.257E+03	3.409E+06	2.291E+02	1.137E+03	1.705E+06	1.145E+02
2103	4.090E+03	3.275E+06	2.201E+02	1.093E+03	1.638E+06	1.100E+02
2104	3.930E+03	3.147E+06	2.114E+02	1.050E+03	1.573E+06	1.057E+02
2105	3.776E+03	3.024E+06	2.032E+02	1.009E+03	1.512E+06	1.016E+02
2106	3.628E+03	2.905E+06	1.952E+02	9.690E+02	1.453E+06	9.759E+01
2107	3.486E+03	2.791E+06	1.875E+02	9.310E+02	1.396E+06	9.377E+01
2108	3.349E+03	2.682E+06	1.802E+02	8.945E+02	1.341E+06	9.009E+01
2109	3.218E+03	2.577E+06	1.731E+02	8.595E+02	1.288E+06	8.656E+01
2110	3.091E+03	2.475E+06	1.663E+02	8.258E+02	1.238E+06	8.316E+01
2111	2.970E+03	2.378E+06	1.598E+02	7.934E+02	1.189E+06	7.990E+01
2112	2.854E+03	2.285E+06	1.535E+02	7.623E+02	1.143E+06	7.677E+01
2113	2.742E+03	2.196E+06	1.475E+02	7.324E+02	1.098E+06	7.376E+01
2114	2.634E+03	2.109E+06	1.417E+02	7.037E+02	1.055E+06	7.087E+01
2115	2.531E+03	2.027E+06	1.362E+02	6.761E+02	1.013E+06	6.809E+01
2116	2.432E+03	1.947E+06	1.308E+02	6.496E+02	9.736E+05	6.542E+01
2117	2.336E+03	1.871E+06	1.257E+02	6.241E+02	9.355E+05	6.285E+01
2118	2.245E+03	1.798E+06	1.208E+02	5.996E+02	8.988E+05	6.039E+01
2119	2.157E+03	1.727E+06	1.160E+02	5.761E+02	8.635E+05	5.802E+01
2120	2.072E+03	1.659E+06	1.115E+02	5.535E+02	8.297E+05	5.575E+01
2121	1.991E+03	1.594E+06	1.071E+02	5.318E+02	7.972E+05	5.356E+01
2122	1.913E+03	1.532E+06	1.029E+02	5.110E+02	7.659E+05	5.146E+01
2123	1.838E+03	1.472E+06	9.889E+01	4.909E+02	7.359E+05	4.944E+01
2124	1.766E+03	1.414E+06	9.501E+01	4.717E+02	7.070E+05	4.750E+01
2125	1.697E+03	1.359E+06	9.128E+01	4.532E+02	6.793E+05	4.564E+01
2126	1.630E+03	1.305E+06	8.770E+01	4.354E+02	6.527E+05	4.385E+01
2127	1.566E+03	1.254E+06	8.426E+01	4.183E+02	6.271E+05	4.213E+01
2128	1.505E+03	1.205E+06	8.096E+01	4.019E+02	6.025E+05	4.048E+01
2129	1.446E+03	1.158E+06	7.779E+01	3.862E+02	5.789E+05	3.889E+01
2130	1.389E+03	1.112E+06	7.474E+01	3.710E+02	5.562E+05	3.737E+01
2131	1.335E+03	1.069E+06	7.181E+01	3.565E+02	5.343E+05	3.590E+01
2132	1.282E+03	1.027E+06	6.899E+01	3.425E+02	5.134E+05	3.450E+01
2133	1.232E+03	9.865E+05	6.628E+01	3.291E+02	4.933E+05	3.314E+01
2134	1.184E+03	9.478E+05	6.369E+01	3.162E+02	4.739E+05	3.184E+01
2135	1.137E+03	9.107E+05	6.119E+01	3.038E+02	4.553E+05	3.059E+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)
1995	0	0	0	0	0	0
1996	1.426E+02	7.792E+04	5.236E+00	4.558E-01	1.272E+02	8.544E-03
1997	3.693E+03	2.018E+06	1.356E+02	1.180E+01	3.293E+03	2.212E-01
1998	1.079E+04	5.896E+06	3.962E+02	3.449E+01	9.623E+03	6.465E-01
1999	1.886E+04	1.030E+07	6.923E+02	6.028E+01	1.682E+04	1.130E+00
2000	2.610E+04	1.426E+07	9.582E+02	8.342E+01	2.327E+04	1.564E+00
2001	3.087E+04	1.686E+07	1.133E+03	9.865E+01	2.752E+04	1.849E+00
2002	3.736E+04	2.041E+07	1.371E+03	1.194E+02	3.331E+04	2.238E+00
2003	4.250E+04	2.322E+07	1.560E+03	1.358E+02	3.789E+04	2.546E+00
2004	4.804E+04	2.625E+07	1.763E+03	1.535E+02	4.283E+04	2.878E+00
2005	5.718E+04	3.124E+07	2.099E+03	1.827E+02	5.098E+04	3.425E+00
2006	6.896E+04	3.767E+07	2.531E+03	2.204E+02	6.148E+04	4.131E+00
2007	8.328E+04	4.550E+07	3.057E+03	2.662E+02	7.425E+04	4.989E+00
2008	9.761E+04	5.333E+07	3.583E+03	3.120E+02	8.703E+04	5.847E+00
2009	1.134E+05	6.197E+07	4.164E+03	3.625E+02	1.011E+05	6.795E+00
2010	1.237E+05	6.758E+07	4.541E+03	3.953E+02	1.103E+05	7.410E+00
2011	1.189E+05	6.493E+07	4.363E+03	3.798E+02	1.060E+05	7.120E+00
2012	1.142E+05	6.238E+07	4.192E+03	3.649E+02	1.018E+05	6.841E+00
2013	1.097E+05	5.994E+07	4.027E+03	3.506E+02	9.782E+04	6.572E+00
2014	1.054E+05	5.759E+07	3.869E+03	3.369E+02	9.398E+04	6.315E+00
2015	1.013E+05	5.533E+07	3.718E+03	3.237E+02	9.030E+04	6.067E+00
2016	9.731E+04	5.316E+07	3.572E+03	3.110E+02	8.676E+04	5.829E+00
2017	9.349E+04	5.107E+07	3.432E+03	2.988E+02	8.335E+04	5.601E+00
2018	8.983E+04	4.907E+07	3.297E+03	2.871E+02	8.009E+04	5.381E+00
2019	8.630E+04	4.715E+07	3.168E+03	2.758E+02	7.695E+04	5.170E+00
2020	8.292E+04	4.530E+07	3.044E+03	2.650E+02	7.393E+04	4.967E+00
2021	7.967E+04	4.352E+07	2.924E+03	2.546E+02	7.103E+04	4.772E+00
2022	7.655E+04	4.182E+07	2.810E+03	2.446E+02	6.824E+04	4.585E+00
2023	7.354E+04	4.018E+07	2.699E+03	2.350E+02	6.557E+04	4.406E+00
2024	7.066E+04	3.860E+07	2.594E+03	2.258E+02	6.300E+04	4.233E+00
2025	6.789E+04	3.709E+07	2.492E+03	2.170E+02	6.053E+04	4.067E+00
2026	6.523E+04	3.563E+07	2.394E+03	2.085E+02	5.815E+04	3.907E+00
2027	6.267E+04	3.424E+07	2.300E+03	2.003E+02	5.587E+04	3.754E+00
2028	6.021E+04	3.289E+07	2.210E+03	1.924E+02	5.368E+04	3.607E+00
2029	5.785E+04	3.160E+07	2.123E+03	1.849E+02	5.158E+04	3.466E+00
2030	5.558E+04	3.037E+07	2.040E+03	1.776E+02	4.956E+04	3.330E+00
2031	5.340E+04	2.917E+07	1.960E+03	1.707E+02	4.761E+04	3.199E+00
2032	5.131E+04	2.803E+07	1.883E+03	1.640E+02	4.575E+04	3.074E+00
2033	4.930E+04	2.693E+07	1.810E+03	1.575E+02	4.395E+04	2.953E+00
2034	4.736E+04	2.588E+07	1.739E+03	1.514E+02	4.223E+04	2.837E+00
2035	4.551E+04	2.486E+07	1.670E+03	1.454E+02	4.057E+04	2.726E+00
2036	4.372E+04	2.389E+07	1.605E+03	1.397E+02	3.898E+04	2.619E+00
2037	4.201E+04	2.295E+07	1.542E+03	1.343E+02	3.745E+04	2.516E+00
2038	4.036E+04	2.205E+07	1.482E+03	1.290E+02	3.598E+04	2.418E+00
2039	3.878E+04	2.119E+07	1.423E+03	1.239E+02	3.457E+04	2.323E+00
2040	3.726E+04	2.035E+07	1.368E+03	1.191E+02	3.322E+04	2.232E+00
2041	3.580E+04	1.956E+07	1.314E+03	1.144E+02	3.192E+04	2.144E+00
2042	3.439E+04	1.879E+07	1.262E+03	1.099E+02	3.066E+04	2.060E+00
2043	3.305E+04	1.805E+07	1.213E+03	1.056E+02	2.946E+04	1.980E+00
2044	3.175E+04	1.734E+07	1.165E+03	1.015E+02	2.831E+04	1.902E+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)
2045	3.050E+04	1.666E+07	1.120E+03	9.749E+01	2.720E+04	1.827E+00
2046	2.931E+04	1.601E+07	1.076E+03	9.366E+01	2.613E+04	1.756E+00
2047	2.816E+04	1.538E+07	1.034E+03	8.999E+01	2.511E+04	1.687E+00
2048	2.706E+04	1.478E+07	9.931E+02	8.646E+01	2.412E+04	1.621E+00
2049	2.599E+04	1.420E+07	9.541E+02	8.307E+01	2.318E+04	1.557E+00
2050	2.498E+04	1.364E+07	9.167E+02	7.981E+01	2.227E+04	1.496E+00
2051	2.400E+04	1.311E+07	8.808E+02	7.669E+01	2.139E+04	1.437E+00
2052	2.305E+04	1.259E+07	8.463E+02	7.368E+01	2.055E+04	1.381E+00
2053	2.215E+04	1.210E+07	8.131E+02	7.079E+01	1.975E+04	1.327E+00
2054	2.128E+04	1.163E+07	7.812E+02	6.801E+01	1.897E+04	1.275E+00
2055	2.045E+04	1.117E+07	7.506E+02	6.535E+01	1.823E+04	1.225E+00
2056	1.965E+04	1.073E+07	7.211E+02	6.278E+01	1.752E+04	1.177E+00
2057	1.888E+04	1.031E+07	6.929E+02	6.032E+01	1.683E+04	1.131E+00
2058	1.814E+04	9.908E+06	6.657E+02	5.796E+01	1.617E+04	1.086E+00
2059	1.742E+04	9.519E+06	6.396E+02	5.568E+01	1.554E+04	1.044E+00
2060	1.674E+04	9.146E+06	6.145E+02	5.350E+01	1.493E+04	1.003E+00
2061	1.608E+04	8.787E+06	5.904E+02	5.140E+01	1.434E+04	9.635E-01
2062	1.545E+04	8.443E+06	5.673E+02	4.939E+01	1.378E+04	9.258E-01
2063	1.485E+04	8.112E+06	5.450E+02	4.745E+01	1.324E+04	8.895E-01
2064	1.427E+04	7.794E+06	5.236E+02	4.559E+01	1.272E+04	8.546E-01
2065	1.371E+04	7.488E+06	5.031E+02	4.380E+01	1.222E+04	8.211E-01
2066	1.317E+04	7.194E+06	4.834E+02	4.209E+01	1.174E+04	7.889E-01
2067	1.265E+04	6.912E+06	4.644E+02	4.044E+01	1.128E+04	7.580E-01
2068	1.216E+04	6.641E+06	4.462E+02	3.885E+01	1.084E+04	7.282E-01
2069	1.168E+04	6.381E+06	4.287E+02	3.733E+01	1.041E+04	6.997E-01
2070	1.122E+04	6.131E+06	4.119E+02	3.586E+01	1.001E+04	6.722E-01
2071	1.078E+04	5.890E+06	3.958E+02	3.446E+01	9.613E+03	6.459E-01
2072	1.036E+04	5.659E+06	3.802E+02	3.311E+01	9.236E+03	6.206E-01
2073	9.953E+03	5.437E+06	3.653E+02	3.181E+01	8.874E+03	5.962E-01
2074	9.563E+03	5.224E+06	3.510E+02	3.056E+01	8.526E+03	5.728E-01
2075	9.188E+03	5.019E+06	3.372E+02	2.936E+01	8.192E+03	5.504E-01
2076	8.828E+03	4.823E+06	3.240E+02	2.821E+01	7.870E+03	5.288E-01
2077	8.481E+03	4.633E+06	3.113E+02	2.710E+01	7.562E+03	5.081E-01
2078	8.149E+03	4.452E+06	2.991E+02	2.604E+01	7.265E+03	4.881E-01
2079	7.829E+03	4.277E+06	2.874E+02	2.502E+01	6.980E+03	4.690E-01
2080	7.522E+03	4.109E+06	2.761E+02	2.404E+01	6.707E+03	4.506E-01
2081	7.227E+03	3.948E+06	2.653E+02	2.310E+01	6.444E+03	4.330E-01
2082	6.944E+03	3.794E+06	2.549E+02	2.219E+01	6.191E+03	4.160E-01
2083	6.672E+03	3.645E+06	2.449E+02	2.132E+01	5.948E+03	3.997E-01
2084	6.410E+03	3.502E+06	2.353E+02	2.049E+01	5.715E+03	3.840E-01
2085	6.159E+03	3.365E+06	2.261E+02	1.968E+01	5.491E+03	3.689E-01
2086	5.917E+03	3.233E+06	2.172E+02	1.891E+01	5.276E+03	3.545E-01
2087	5.685E+03	3.106E+06	2.087E+02	1.817E+01	5.069E+03	3.406E-01
2088	5.462E+03	2.984E+06	2.005E+02	1.746E+01	4.870E+03	3.272E-01
2089	5.248E+03	2.867E+06	1.926E+02	1.677E+01	4.679E+03	3.144E-01
2090	5.042E+03	2.755E+06	1.851E+02	1.611E+01	4.496E+03	3.021E-01
2091	4.845E+03	2.647E+06	1.778E+02	1.548E+01	4.319E+03	2.902E-01
2092	4.655E+03	2.543E+06	1.709E+02	1.488E+01	4.150E+03	2.788E-01
2093	4.472E+03	2.443E+06	1.642E+02	1.429E+01	3.987E+03	2.679E-01
2094	4.297E+03	2.347E+06	1.577E+02	1.373E+01	3.831E+03	2.574E-01
2095	4.128E+03	2.255E+06	1.515E+02	1.319E+01	3.681E+03	2.473E-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)
2096	3.966E+03	2.167E+06	1.456E+02	1.268E+01	3.536E+03	2.376E-01
2097	3.811E+03	2.082E+06	1.399E+02	1.218E+01	3.398E+03	2.283E-01
2098	3.662E+03	2.000E+06	1.344E+02	1.170E+01	3.264E+03	2.193E-01
2099	3.518E+03	1.922E+06	1.291E+02	1.124E+01	3.136E+03	2.107E-01
2100	3.380E+03	1.847E+06	1.241E+02	1.080E+01	3.013E+03	2.025E-01
2101	3.247E+03	1.774E+06	1.192E+02	1.038E+01	2.895E+03	1.945E-01
2102	3.120E+03	1.705E+06	1.145E+02	9.971E+00	2.782E+03	1.869E-01
2103	2.998E+03	1.638E+06	1.100E+02	9.580E+00	2.673E+03	1.796E-01
2104	2.880E+03	1.573E+06	1.057E+02	9.205E+00	2.568E+03	1.725E-01
2105	2.767E+03	1.512E+06	1.016E+02	8.844E+00	2.467E+03	1.658E-01
2106	2.659E+03	1.453E+06	9.759E+01	8.497E+00	2.370E+03	1.593E-01
2107	2.555E+03	1.396E+06	9.377E+01	8.164E+00	2.278E+03	1.530E-01
2108	2.454E+03	1.341E+06	9.009E+01	7.844E+00	2.188E+03	1.470E-01
2109	2.358E+03	1.288E+06	8.656E+01	7.536E+00	2.102E+03	1.413E-01
2110	2.266E+03	1.238E+06	8.316E+01	7.241E+00	2.020E+03	1.357E-01
2111	2.177E+03	1.189E+06	7.990E+01	6.957E+00	1.941E+03	1.304E-01
2112	2.092E+03	1.143E+06	7.677E+01	6.684E+00	1.865E+03	1.253E-01
2113	2.009E+03	1.098E+06	7.376E+01	6.422E+00	1.792E+03	1.204E-01
2114	1.931E+03	1.055E+06	7.087E+01	6.170E+00	1.721E+03	1.157E-01
2115	1.855E+03	1.013E+06	6.809E+01	5.928E+00	1.654E+03	1.111E-01
2116	1.782E+03	9.736E+05	6.542E+01	5.696E+00	1.589E+03	1.068E-01
2117	1.712E+03	9.355E+05	6.285E+01	5.472E+00	1.527E+03	1.026E-01
2118	1.645E+03	8.988E+05	6.039E+01	5.258E+00	1.467E+03	9.856E-02
2119	1.581E+03	8.635E+05	5.802E+01	5.052E+00	1.409E+03	9.469E-02
2120	1.519E+03	8.297E+05	5.575E+01	4.854E+00	1.354E+03	9.098E-02
2121	1.459E+03	7.972E+05	5.356E+01	4.663E+00	1.301E+03	8.741E-02
2122	1.402E+03	7.659E+05	5.146E+01	4.480E+00	1.250E+03	8.398E-02
2123	1.347E+03	7.359E+05	4.944E+01	4.305E+00	1.201E+03	8.069E-02
2124	1.294E+03	7.070E+05	4.750E+01	4.136E+00	1.154E+03	7.753E-02
2125	1.243E+03	6.793E+05	4.564E+01	3.974E+00	1.109E+03	7.449E-02
2126	1.195E+03	6.527E+05	4.385E+01	3.818E+00	1.065E+03	7.157E-02
2127	1.148E+03	6.271E+05	4.213E+01	3.668E+00	1.023E+03	6.876E-02
2128	1.103E+03	6.025E+05	4.048E+01	3.524E+00	9.832E+02	6.606E-02
2129	1.060E+03	5.789E+05	3.889E+01	3.386E+00	9.447E+02	6.347E-02
2130	1.018E+03	5.562E+05	3.737E+01	3.253E+00	9.076E+02	6.098E-02
2131	9.781E+02	5.343E+05	3.590E+01	3.126E+00	8.721E+02	5.859E-02
2132	9.398E+02	5.134E+05	3.450E+01	3.003E+00	8.379E+02	5.630E-02
2133	9.029E+02	4.933E+05	3.314E+01	2.886E+00	8.050E+02	5.409E-02
2134	8.675E+02	4.739E+05	3.184E+01	2.772E+00	7.734E+02	5.197E-02
2135	8.335E+02	4.553E+05	3.059E+01	2.664E+00	7.431E+02	4.993E-02



Indiana Department of Environmental Management

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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

July 6, 2016

Jim Love
Newton County Landfill
2266 East 500 South Road
Brook, IN 47922

Re: Public Notice
Newton County Landfill
Permit Level: Title V - Significant Source Modification & Title V - Renewal
Permit Number: 111 - 35382 - 00017 & 111 - 35606 - 00017

Dear Jim Love:

Enclosed is a copy of your draft Title V - Significant Source Modification & Title V - 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 Newton County Enterprise in Kentland, Indiana publish the abbreviated version of the public notice no later than July 20, 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 Brook Iroquois Twp Library, 100 West Main St. in Brook IN. 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,
Len Pogost

Len Pogost
Permits Branch
Office of Air Quality

Enclosures
PN Applicant Cover letter 2/17/2016



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Commissioner

ATTENTION: PUBLIC NOTICES, LEGAL ADVERTISING

July 6, 2016

Newton County Enterprise
Attn: Classifieds
305 East Graham
Kentland, Indiana 47951

Enclosed, please find one Indiana Department of Environmental Management Notice of Public Comment for Newton County Landfill, Newton 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 July 20, 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 Len Pogost at 800-451-6027 and ask for extension 3-2803 or dial 317-233-2803.

Sincerely,

Len Pogost

Len Pogost
Permit Branch
Office of Air Quality

Permit Level: Title V - Significant Source Modification & Title V - Renewal
Permit Number: 111 - 35382 - 00017 & 111 - 35606 - 00017

Enclosure
PN Newspaper.dot 6/13/2013



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Michael R. Pence
Governor

Carol S. Comer
Commissioner

July 6, 2016

To: Brook Iroquois Twp Library 100 West Main St. Brook IN

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: Newton County Landfill
Permit Number: 111 - 35382 - 00017 & 111 - 35606 - 00017

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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Carol S. Comer
Commissioner

Notice of Public Comment

July 6, 2016

Newton County Landfill

111 - 35382 - 00017 & 111 - 35606 - 00017

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



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Michael R. Pence
Governor

Carol S. Comer
Commissioner

AFFECTED STATE NOTIFICATION OF PUBLIC COMMENT PERIOD DRAFT INDIANA AIR PERMIT

July 6, 2016

A 30-day public comment period has been initiated for:

Permit Number: 111 - 35382 - 00017 & 111 - 35606 - 00017
Applicant Name: Newton County Landfill
Location: Brook, Newton County, Indiana

The public notice, draft permit and technical support documents can be accessed via the **IDEM Air Permits Online** site at:

<http://www.in.gov/ai/appfiles/idem-caats/>

Questions or comments on this draft permit should be directed to the person identified in the public notice by telephone or in writing to:

Indiana Department of Environmental Management
Office of Air Quality, Permits Branch
100 North Senate Avenue
Indianapolis, IN 46204

Questions or comments regarding this email notification or access to this information from the EPA Internet site can be directed to Chris Hammack at chammack@idem.IN.gov or (317) 233-2414.

Affected States Notification.dot 2/17/2016

Mail Code 61-53

IDEM Staff	LPOGOST 7/6/2016 Newton County Landfill 111 - 35382 - 00017 & 111 - 35606 - 00017 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	Handling 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		Jim Love Newton County Landfill 2266 East 500 South Road Brook IN 47922 (Source CAATS)									
2		Terry Zona General Manager Newton County Landfill 2266 E 500 S Road Brook IN 47922 (RO CAATS)									
3		Newton County Commissioners 201 N. 3rd Street, Courthouse Square Kentland IN 47951 (Local Official)									
4		Mr. Bernard and Judith Schultz 4080 S. 100 E Morocco IN 47963 (Affected Party)									
5		Newton County Health Department 4117 S. 240 W. Suite 500 Morocco IN 47963 (Health Department)									
6		Mr. Dennis Hahney Pipefitters Association, Local Union 597 1461 East Summit St Crown Point IN 46307 (Affected Party)									
7		Mr. Kenny Haun P.O. Box 280 Rensselaer IN 47978 (Affected Party)									
8		Brook Iroquois Twp Library 100 West Main St. Brook IN 47922-0155 (Library)									
9		Brook Town Council P.O. Box 182 Brook IN 47922 (Local Official)									
10		Laura Niemann Environmental Information Logistics, LLC 130 E Main Street Caledonia MI 49316 (Consultant)									
11											
12											
13											
14											
15											

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