



State of Ohio Environmental Protection Agency

**RE: FINAL PERMIT TO INSTALL  
LORAIN COUNTY**

**CERTIFIED MAIL**

Street Address:

Lazarus Gov. Center TELE: (614) 644-3020 FAX: (614) 644-2329

Mailing Address:

Lazarus Gov.  
Center

**Application No: 02-17061**

**DATE:** 3/6/2003

Browning-Ferris Industries of Ohio Inc  
David Matthews  
43502 Oberlin-Elyria Rd  
Oberlin, OH 44074

Enclosed please find an Ohio EPA Permit to Install which will allow you to install the described source(s) in a manner indicated in the permit. Because this permit contains several conditions and restrictions, I urge you to read it carefully.

The Ohio EPA is urging companies to investigate pollution prevention and energy conservation. Not only will this reduce pollution and energy consumption, but it can also save you money. If you would like to learn ways you can save money while protecting the environment, please contact our Office of Pollution Prevention at (614) 644-3469.

You are hereby notified that this action by the Director is final and may be appealed to the Ohio Environmental Review Appeals Commission pursuant to Chapter 3745.04 of the Ohio Revised Code. The appeal must be in writing and set forth the action complained of and the grounds upon which the appeal is based. It must be filed within thirty (30) days after the notice of the Directors action. A copy of the appeal must be served on the Director of the Ohio Environmental Protection Agency within three (3) days of filing with the Commission. An appeal may be filed with the Environmental Review Appeals Commission at the following address:

Environmental Review Appeals Commission  
236 East Town Street, Room 300  
Columbus, Ohio 43215

Very truly yours,

*Michael W. Ahern*

Michael W. Ahern, Supervisor  
Field Operations and Permit Section  
Division of Air Pollution Control

CC: USEPA

NEDO



STATE OF OHIO ENVIRONMENTAL PROTECTION AGENCY

**Permit To Install  
Terms and Conditions**

**Issue Date: 3/6/2003  
Effective Date: 3/6/2003**

**FINAL PERMIT TO INSTALL 02-17061**

Application Number: 02-17061  
APS Premise Number: 0247000760  
Permit Fee: **\$1000**  
Name of Facility: Browning-Ferris Industries of Ohio Inc  
Person to Contact: David Matthews  
Address: 43502 Oberlin-Elyria Rd  
Oberlin, OH 44074

Location of proposed air contaminant source(s) [emissions unit(s)]:  
**43502 Oberlin-Elyria Rd**  
**Oberlin, Ohio**

Description of proposed emissions unit(s):  
**Expansion of existing landfill.**

The above named entity is hereby granted a Permit to Install for the above described emissions unit(s) pursuant to Chapter 3745-31 of the Ohio Administrative Code. Issuance of this permit does not constitute expressed or implied approval or agreement that, if constructed or modified in accordance with the plans included in the application, the above described emissions unit(s) of environmental pollutants will operate in compliance with applicable State and Federal laws and regulations, and does not constitute expressed or implied assurance that if constructed or modified in accordance with those plans and specifications, the above described emissions unit(s) of pollutants will be granted the necessary permits to operate (air) or NPDES permits as applicable.

This permit is granted subject to the conditions attached hereto.

Ohio Environmental Protection Agency



Director

**Part I - GENERAL TERMS AND CONDITIONS****A. State and Federally Enforceable Permit To Install General Terms and Conditions****1. Monitoring and Related Record keeping and Reporting Requirements**

- a. Except as may otherwise be provided in the terms and conditions for a specific emissions unit, the permittee shall maintain records that include the following, where applicable, for any required monitoring under this permit:
  - i. The date, place (as defined in the permit), and time of sampling or measurements.
  - ii. The date(s) analyses were performed.
  - iii. The company or entity that performed the analyses.
  - iv. The analytical techniques or methods used.
  - v. The results of such analyses.
  - vi. The operating conditions existing at the time of sampling or measurement.
- b. Each record of any monitoring data, testing data, and support information required pursuant to this permit shall be retained for a period of five years from the date the record was created. Support information shall include, but not be limited to, all calibration and maintenance records and all original strip-chart recordings for continuous monitoring instrumentation, and copies of all reports required by this permit. Such records may be maintained in computerized form.
- c. Except as may otherwise be provided in the terms and conditions for a specific emissions unit, the permittee shall submit required reports in the following manner:
  - i. Reports of any required monitoring and/or record keeping of federally enforceable information shall be submitted to the appropriate Ohio EPA District Office or local air agency.
  - ii. Quarterly written reports of (i) any deviations from federally enforceable emission limitations, operational restrictions, and control device operating parameter limitations, excluding deviations resulting from malfunctions reported in accordance with OAC rule 3745-15-06, that have been detected by the testing, monitoring and record keeping requirements specified in this permit, (ii) the probable cause of such deviations, and (iii) any corrective actions or preventive measures taken, shall be made to the appropriate Ohio EPA District Office or local air agency. The written reports shall be submitted quarterly, i.e., by January 31, April 30, July 31, and October 31 of each year and shall cover the previous

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calendar quarters. See B.9 below if no deviations occurred during the quarter.

- iii. Written reports, which identify any deviations from the federally enforceable monitoring, record keeping, and reporting requirements contained in this permit shall be submitted to the appropriate Ohio EPA District Office or local air agency every six months, i.e., by January 31 and July 31 of each year for the previous six calendar months. If no deviations occurred during a six-month period, the permittee shall submit a semi-annual report, which states that no deviations occurred during that period.
- iv. Each written report shall be signed by a responsible official certifying that, based on information and belief formed after reasonable inquiry, the statements and information in the report are true, accurate, and complete.

## **2. Scheduled Maintenance/Malfunction Reporting**

Any scheduled maintenance of air pollution control equipment shall be performed in accordance with paragraph (A) of OAC rule 3745-15-06. The malfunction, i.e., upset, of any emissions units or any associated air pollution control system(s) shall be reported to the appropriate Ohio EPA District Office or local air agency in accordance with paragraph (B) of OAC rule 3745-15-06. (The definition of an upset condition shall be the same as that used in OAC rule 3745-15-06(B)(1) for a malfunction.) The verbal and written reports shall be submitted pursuant to OAC rule 3745-15-06.

Except as provided in that rule, any scheduled maintenance or malfunction necessitating the shutdown or bypassing of any air pollution control system(s) shall be accompanied by the shutdown of the emission unit(s) that is (are) served by such control system(s).

## **3. Risk Management Plans**

If the permittee is required to develop and register a risk management plan pursuant to section 112(r) of the Clean Air Act, as amended, 42 U.S.C. 7401 et seq. ("Act"), the permittee shall comply with the requirement to register such a plan.

## **4. Title IV Provisions**

If the permittee is subject to the requirements of 40 CFR Part 72 concerning acid rain, the permittee shall ensure that any affected emissions unit complies with those requirements. Emissions exceeding any allowances that are lawfully held under Title IV of the Act, or any regulations adopted thereunder, are prohibited.

## **5. Severability Clause**

A determination that any term or condition of this permit is invalid shall not invalidate the force or effect of any other term or condition thereof, except to the extent that any other term or condition depends in whole or in part for its operation or implementation upon the term or condition declared invalid.

## **6. General Requirements**

- a. The permittee must comply with all terms and conditions of this permit. Any noncompliance with the federally enforceable terms and conditions of this permit constitutes a violation of the Act, and is grounds for enforcement action or for permit revocation, revocation and reissuance, or modification, or for denial of a permit renewal application.
- b. 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 federally enforceable terms and conditions of this permit.
- c. This permit may be modified, reopened, revoked, or revoked and reissued, for cause. The filing of a request by the permittee for a permit modification, revocation and reissuance, or revocation, or of a notification of planned changes or anticipated noncompliance does not stay any term and condition of this permit.
- d. This permit does not convey any property rights of any sort, or any exclusive privilege.
- e. The permittee shall furnish to the Director of the Ohio EPA, or an authorized representative of the Director, upon receipt of a written request and within a reasonable time, any information that may be requested to determine whether cause exists for modifying, reopening or revoking this permit or to determine compliance with this permit. Upon request, the permittee shall also furnish to the Director or an authorized representative of the Director, copies of records required to be kept by this permit. For information claimed to be confidential in the submittal to the Director, if the Administrator of the U.S. EPA requests such information, the permittee may furnish such records directly to the Administrator along with a claim of confidentiality.

## **7. Fees**

The permittee shall pay fees to the Director of the Ohio EPA in accordance with ORC section 3745.11 and OAC Chapter 3745-78. The permittee shall pay all applicable Permit To Install fees within 30 days after the issuance of this Permit To Install.

## **8. Federal and State Enforceability**

Only those terms and conditions designated in this permit as federally enforceable, that are

required under the Act, or any of its applicable requirements, including relevant provisions designed to limit the potential to emit of a source, are enforceable by the Administrator of the U.S. EPA, the State, and citizens under the Act. All other terms and conditions of this permit shall not be federally enforceable and shall be enforceable under State law only.

## **9. Compliance Requirements**

- a. Any document (including reports) required to be submitted and required by a federally applicable requirement in this permit shall include a certification by a responsible official that, based on information and belief formed after reasonable inquiry, the statements in the document are true, accurate, and complete.
- b. Upon presentation of credentials and other documents as may be required by law, the permittee shall allow the Director of the Ohio EPA or an authorized representative of the Director to:
  - i. At reasonable times, enter upon the permittee's premises where a source is located or the emissions-related activity is conducted, or where records must be kept under the conditions of this permit.
  - ii. Have access to and copy, at reasonable times, any records that must be kept under the conditions of this permit, subject to the protection from disclosure to the public of confidential information consistent with ORC section 3704.08.
  - iii. Inspect at reasonable times any facilities, equipment (including monitoring and air pollution control equipment), practices, or operations regulated or required under this permit.
  - iv. As authorized by the Act, sample or monitor at reasonable times substances or parameters for the purpose of assuring compliance with the permit and applicable requirements.
- c. The permittee shall submit progress reports to the appropriate Ohio EPA District Office or local air agency concerning any schedule of compliance for meeting an applicable requirement. Progress reports shall be submitted semiannually, or more frequently if specified in the applicable requirement or by the Director of the Ohio EPA. Progress reports shall contain the following:
  - i. Dates for achieving the activities, milestones, or compliance required in any schedule of compliance, and dates when such activities, milestones, or compliance were achieved.
  - ii. An explanation of why any dates in any schedule of compliance were not or will not be met, and any preventive or corrective measures adopted.

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#### **10. Permit To Operate Application**

- a. If the permittee is required to apply for a Title V permit pursuant to OAC Chapter 3745-77, the permittee shall submit a complete Title V permit application or a complete Title V permit modification application within twelve (12) months after commencing operation of the emissions units covered by this permit. However, if the proposed new or modified source(s) would be prohibited by the terms and conditions of an existing Title V permit, a Title V permit modification must be obtained before the operation of such new or modified source(s) pursuant to OAC rule 3745-77-04(D) and OAC rule 3745-77-08(C)(3)(d).
- b. If the permittee is required to apply for permit(s) pursuant to OAC Chapter 3745-35, the source(s) identified in this Permit To Install is (are) permitted to operate for a period of up to one year from the date the source(s) commenced operation. Permission to operate is granted only if the facility complies with all requirements contained in this permit and all applicable air pollution laws, regulations, and policies. Pursuant to OAC Chapter 3745-35, the permittee shall submit a complete operating permit application within ninety (90) days after commencing operation of the source(s) covered by this permit.

#### **11. Best Available Technology**

As specified in OAC Rule 3745-31-05, all new sources must employ Best Available Technology (BAT). Compliance with the terms and conditions of this permit will fulfill this requirement.

#### **12. Air Pollution Nuisance**

The air contaminants emitted by the emissions units covered by this permit shall not cause a public nuisance, in violation of OAC rule 3745-15-07.

**B. State Only Enforceable Permit To Install General Terms and Conditions**

**1. Compliance Requirements**

The emissions unit(s) identified in this Permit to Install shall remain in full compliance with all applicable State laws and regulations and the terms and conditions of this permit.

**2. Reporting Requirements**

The permittee shall submit required reports in the following manner:

- a. Reports of any required monitoring and/or record keeping of state-only enforceable information shall be submitted to the appropriate Ohio EPA District Office or local air agency.
- b. Except as otherwise may be provided in the terms and conditions for a specific emissions unit, quarterly written reports of (a) any deviations (excursions) from state-only required emission limitations, operational restrictions, and control device operating parameter limitations that have been detected by the testing, monitoring, and record keeping requirements specified in this permit, (b) the probable cause of such deviations, and (c) any corrective actions or preventive measures which have been or will be taken, shall be submitted to the appropriate Ohio EPA District Office or local air agency. If no deviations occurred during a calendar quarter, the permittee shall submit a quarterly report, which states that no deviations occurred during that quarter. The reports shall be submitted quarterly, i.e., by January 31, April 30, July 31, and October 31 of each year and shall cover the previous calendar quarters. (These quarterly reports shall exclude deviations resulting from malfunctions reported in accordance with OAC rule 3745-15-06.)

**3. Permit Transfers**

This Permit To Install is applicable only to the emissions unit(s) identified in the Permit To Install. Separate Permit To Install for the installation or modification of any other emissions unit(s) are required for any emissions unit for which a Permit To Install is required.

**4. Termination of Permit To Install**

This permit to install shall terminate within eighteen months of the effective date of the permit to install if the owner or operator has not undertaken a continuing program of installation or modification or has not entered into a binding contractual obligation to undertake and complete within a reasonable time a continuing program of installation or modification. This deadline may be extended by up to 12 months if application is made to the Director within a reasonable time before the termination date and the party shows good cause for any such extension.

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## **5. Construction of New Sources(s)**

The proposed emissions unit(s) shall be constructed in strict accordance with the plans and application submitted for this permit to the Director of the Ohio Environmental Protection Agency. There may be no deviation from the approved plans without the express, written approval of the Agency. Any deviations from the approved plans or the above conditions may lead to such sanctions and penalties as provided under Ohio law. Approval of these plans does not constitute an assurance that the proposed facilities will operate in compliance with all Ohio laws and regulations. Additional facilities shall be installed upon orders of the Ohio Environmental Protection Agency if the proposed sources cannot meet the requirements of this permit or cannot meet applicable standards.

If the construction of the proposed emissions unit(s) has already begun or has been completed prior to the date the Director of the Environmental Protection Agency approves the permit application and plans, the approval does not constitute expressed or implied assurance that the proposed facility has been constructed in accordance with the approved plans. The action of beginning and/or completing construction prior to obtaining the Director's approval constitutes a violation of OAC rule 3745-31-02. Furthermore, issuance of the Permit to Install does not constitute an assurance that the proposed source will operate in compliance with all Ohio laws and regulations. Approval of the plans in any case is not to be construed as an approval of the facility as constructed and/or completed. Moreover, issuance of the Permit to Install is not to be construed as a waiver of any rights that the Ohio Environmental Protection Agency (or other persons) may have against the applicant for starting construction prior to the effective date of the permit. Additional facilities shall be installed upon orders of the Ohio Environmental Protection Agency if the proposed facilities cannot meet the requirements of this permit or cannot meet applicable standards.

## **6. Public Disclosure**

The facility is hereby notified that this permit, and all agency records concerning the operation of this permitted source, are subject to public disclosure in accordance with OAC rule 3745-49-03.

## **7. Applicability**

This Permit to Install is applicable only to the emissions unit(s) identified in the Permit To Install. Separate application must be made to the Director for the installation or modification of any other emissions unit(s).

## **8. Construction Compliance Certification**

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The applicant shall provide Ohio EPA with a written certification (see enclosed form) that the facility has been constructed in accordance with the Permit To Install application and the terms and conditions of the Permit to Install. The certification shall be provided to Ohio EPA upon completion of construction but prior to startup of the source.

**9. Additional Reporting Requirements When There Are No Deviations of Federally Enforceable Emission Limitations, Operational Restrictions, or Control Device Operating Parameter Limitations (See Section A of This Permit)**

If no deviations occurred during a calendar quarter, the permittee shall submit a quarterly report, which states that no deviations occurred during that quarter. The reports shall be submitted quarterly, i.e., by January 31, April 30, July 31, and October 31 of each year and shall cover the previous calendar quarters.

**C. Permit To Install Summary of Allowable Emissions**

The following information summarizes the total allowable emissions, by pollutant, based on the individual allowable emissions of each air contaminant source identified in this permit.

**SUMMARY (for informational purposes only)**  
**TOTAL PERMIT TO INSTALL ALLOWABLE EMISSIONS**

<u>Pollutant</u>	<u>Tons Per Year</u>
SO <sub>2</sub>	22.2
NO <sub>x</sub>	26.3
CO	218.0
NMOC	8.7
PE	66.9
HCl	0.2

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**Part II - FACILITY SPECIFIC TERMS AND CONDITIONS****A. State and Federally Enforceable Permit To Install Facility Specific Terms and Conditions**

1. This PTI is for a Title V facility that consists of three separate operations: Lorain County Landfill #1(LCLF1), Lorain County Landfill #2 (LCLF2), and Lorain County Resource Recovery (LCRR). Both of the Lorain County Landfills have collection and control equipment for landfill gas.

Per Engineering Guide # 58 and case history from the USEPA, LCLF1 and LCLF2 are considered to be one landfill. In June 2000 LCLF2 was permitted for a lateral expansion (known as the Northern Expansion). The expansion is considered a modification to the landfill and hence LCLF1 and LCLF2 are both regulated under Subpart WWW. This PTI is for a lateral and vertical expansion to LCLF2.

The LCRR facility consists of transfer operations where glass, plastic, metals, and paper are separated from each other within an enclosed building.

This permit incorporates Lorain County Landfill #1 and Lorain County Landfill #2 under one emissions unit (F002). The collection and combustors at each facility have different requirements.

2. This facility has contracted with Energy Development Incorporated to install and operate a landfill methane gas to energy power station on the premises, which has the potential to handle 4,000 CFM of LFMG. The landfill methane gas power station is permitted as Lorain County Landfill LFG Power Station (facility identification number 0247100968). The landfill has the potential to produce 7,430 CFM of LFMG in 2024. In 2024, no LFMG will be generated at Landfill #1. The combination of the flare at Landfill #2 and the inclusion of the generators provides this facility with the additional controls to exceed their projected NMOC production.

**B. State Only Enforceable Permit To Install Facility Specific Terms and Conditions**

None

**Part III - SPECIAL TERMS AND CONDITIONS FOR SPECIFIC EMISSIONS UNIT(S)**

**A. State and Federally Enforceable Section**

**I. Applicable Emissions Limitations and/or Control Requirements**

- 1. The specific operations(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be specified in narrative form following the table.

Operations, Property,  
and/or Equipment

**\*\*+\*\***

3,000 CFM Combustion device for  
Landfill #2

F002 - Landfill Operations at  
Lorain County Landfill #1  
and #2, to include an  
enclosed combustor for  
landfill #1 and an open flare  
for landfill #2. Additional  
controls by on-site power  
station owned and operated  
by an outside firm.

**\*\*++\*\***

2,000 CFM Internal Combustor for  
Landfill #1

Emissions Unit ID: F002

Applicable Emissions

Limitations/Control Measures

Applicable  
Rules/Requirements

\*\*\*\*  
OAC rule 3745-31-05 (A)(3)

\*\*\*  
Visible emissions of fugitive dust from the landfill operations unit shall not exceed 10 percent opacity as a six-minute average.

Best available control measures that are sufficient to minimize or eliminate visible emissions of fugitive dust (See sections A.I.2.a through A.I.2.f.)

\*\*\*\*  
40 CFR Part 60, Subpart WWW  
\*\*+\*\*\*  
OAC rule 3745-31-05 (A)(3)

Fugitive Non-methane organic compound emissions from both landfills shall not exceed 38.9 tons per year

Particulate emissions: Total of 55.7 tons per year from all the landfill operations excluding the enclosed combustor and open flare.

\*\*\*\*  
OAC rule 3745-17-08(B)(6)

\*\*\*\*  
This rule does not apply, per OAC rule 3745-17-08(A)(1). The emissions unit is not located in an Appendix A area.

\*\*\*\*  
OAC rule 3745-17-07(B)(1)

\*\*\*\*  
This rule does not apply, per OAC rule 3745-17-07(B)(11). The emissions unit is not located in an Appendix A area.

\*\*+\*\*\*  
OAC rule 3745-31-05 (A)(3)

\*\*+\*\*\*  
Visible particulate emissions from this combustion device shall not exceed 10 percent opacity as a six-minute average.

Oxides of nitrogen emissions shall not exceed 3.6 pounds per hour; 15.8 tons per year.

Sulfur dioxide emissions shall not exceed 3.0 pounds per hour; 13.3 tons per year.

\*\*\*\*  
40 CFR Part 60, Subpart WWW

Carbon monoxide emissions shall not exceed 32.8 pounds per hour; 143.5 tons per year.

Hydrogen chloride emissions shall not exceed 0.03 pounds per hour; 0.1 ton per

year.

See section A.I.2.g through A.I.2.l.

Particulate emissions shall not exceed 1.5 pounds per hour; 6.7 tons per year.

Non-methane organic compound emissions shall not exceed 1.2 pounds per hour; 5.2 tons per year.

\*\*\*\*

See section A.I.2.g through A.I.2.l.

\*\*++\*\*

Visible particulate emissions from this combustion device shall not exceed 10 percent opacity as a six-minute average.

Particulate emissions shall not exceed 1.0 pound per hour; 4.5 tons per year.

Sulfur dioxide emissions shall not exceed 2.0 pound per hour; 8.9 tons per year.

Non-methane organic compound emissions shall not exceed 0.8 pound per hour; 3.5 tons per year.

Oxides of nitrogen emissions shall not exceed 2.4 pounds per hour; 10.5 tons per year.

Carbon monoxide emissions shall not exceed 17.1 pounds per hour; 74.5 tons per year.

Hydrogen chloride emissions shall not exceed 0.03 pound per hour; 0.1 ton per year.

\*\*\*\*

## **2. Additional Terms and Conditions**

- 2.a** The landfill areas that are covered by this permit and subject to the requirements of OAC rule 3745-31-05 those landfill areas permitted under Ohio EPA's Division of Solid and Infectious Waste (DSIWM) permit numbers as follows:
- i. Lorain County #1 - Landfill PTI No. 02-8381, approved August 31, 1994, gas collection and enclosed flare system handling up to 2,000 SCFM.
  - ii. Lorain County #2 - Environmental Improvement Permit to Install (EIPTI) No. 02-8388 , approved December 20, 1994, installation of gas extraction system;
  - iii. Lorain County #2 - 10-Year Anniversary EIPTI No. 02-8972, approved April 4, 1996, capacity-1,743,420 cys.;
  - iv. Lorain County #2 - Northern Expansion PTI No. 02-12176, approved September 26, 2000, capacity-17.1 million cys.;
  - v. Lorain County #2 - Landfill PTI application No. 02-15346, a lateral and vertical expansion, upon its final issuance; and
  - v. Lorain County #1 - Closure date of May 31, 1985.
- 2.b** The permittee shall employ best available control measures on all landfill operations associated with the load-in of municipal solid waste (MSW) for the purpose of ensuring compliance with the above-mentioned applicable requirements. In accordance with the permittee's permit application, the permittee has committed to the watering of dusty materials, either prior to dumping or during dumping, and good operating practices to ensure compliance. Nothing in this paragraph shall prohibit the permittee from employing other control measures to ensure compliance.
- 2.c** The above-mentioned control measures shall be employed for each MSW landfill cell if the permittee determines, as a result of the inspection conducted pursuant to the monitoring section of this permit, that the control measures are necessary to ensure compliance with the above-mentioned applicable requirements. Any required implementation of the control measures shall continue during any such operation until further observation confirms that use of the measures is unnecessary.
- 2.d** The permittee shall employ best available control measures for wind erosion from the surface of the landfill for the purpose of ensuring compliance with the above-mentioned

Emissions Unit ID: F002

applicable requirements. In accordance with the permittee's permit application, the permittee has committed to watering the landfill surface, as necessary, to ensure compliance. Nothing in this paragraph shall prohibit the permittee from employing other control measures to ensure compliance.

- 2.e** The above-mentioned control measures shall be employed for wind erosion from the landfill if the permittee determines, as a result of the inspection conducted pursuant to the monitoring section of this permit, that the control measure is necessary to ensure compliance with the above-mentioned applicable requirements. Implementation of the control measure shall not be necessary for the landfill cell that is covered with snow and/or ice or if precipitation has occurred that is sufficient for that day to ensure compliance with the above-mentioned applicable requirements.
- 2.f** Implementation of the above-mentioned control measures in accordance with the terms and conditions of this permit is appropriate and sufficient to satisfy the requirements of OAC rule 3745-31-05.
- 2.g** The active collection system for Lorain County Landfill #1 and Lorain County Landfill #2 shall satisfy the following requirements, as specified in 40 CFR Part 60.752(b)(2)(ii)(A):
- i. The system shall 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. See II.A.2.k below.
  - ii. The system shall collect gas from each area, cell, or group of cells in the landfill in which the initial waste has been placed for a period of 5 years or more if active, or 2 years or more if closed or at final grade.
  - iii. The system shall collect gas at a sufficient extraction rate.
  - iv. The system shall be designed to minimize off-site migration of subsurface gas.
- 2.h** The permittee shall submit a collection and control system plan as specified in 40 CFR Part 60.752(b)(2)(i).
- 2.i** For Lorain County Landfill #1, the collected gas shall be vented to an enclosed combustor designed and operated as follows:
- The enclosed combustor shall either reduce non-methane organic compounds (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 three percent oxygen.
- 2.j** For Lorain County Landfill #2, the collected gas shall be vented to an enclosed combustor until such time as the open flare that is to replace the enclosed combustor, and be placed in close proximity to the Lorain County Landfill LFG Power Station (facility identification

number 0247100968) to serve as primary backup, is operational.

The enclosed combustor and/or open flare (combustion device) shall either reduce non-methane organic compounds (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 three percent oxygen.

- 2.k** For Lorain County Landfill #1 and Lorain County Landfill #2, the collection and control system may be capped or removed provided that all of the following conditions, as specified in 40 CFR Part 60.752(b)(2)(v), are met:
- i. The landfill shall be no longer accepting solid waste and be permanently closed (pursuant to 40 CFR Part 258.60).
  - ii. The collection and control system shall have been in operation a minimum of 15 years.
  - iii. The calculated NMOC gas produced by the landfill shall be less than 55 tons 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.
- 2.l** For Lorain County Landfill #1 and Lorain County Landfill #2, each landfill gas well shall be installed within 60 days of the date in which the initial solid waste has been in place for a period of:
- i. 5 years or more if active; or
  - ii. 2 years or more if closed or at final grade.

## **II. Operational Restrictions**

1. Open burning, at this facility is a violation pursuant to OAC Chapter 3745-19.
2. The permittee shall not accept or dispose of any friable asbestos or friable asbestos-containing materials. The receipt of any friable asbestos or friable asbestos containing waste without proper approval of the Ohio EPA is a violation of the NESHAP for Asbestos (40 CFR 61, Subpart M) and OAC Chapter 3745-20.
3. For Lorain County Landfill #1 and Lorain County Landfill #2 the permittee shall operate the collection systems such that gas is collected from each area, cell, or group of cells in the MSW

landfill in which solid waste has been placed for 5 years or more if active, or for 2 years or more if closed or at final grade.

4. For Lorain County Landfill #1 and Lorain County Landfill #2, the permittee shall operate the collection system with negative pressure at each wellhead except under the following conditions:
  - a. A fire or increased well temperature. (The permittee shall record instances when positive pressure occurs in efforts to avoid a fire.)
  - b. Use of a geomembrane or synthetic cover. (The permittee shall develop acceptable pressure limits in the design plan.)
  - c. A decommissioned well. (A well may experience a static positive pressure after shutdown to accommodate for declining flows. All design changes shall be approved by the Northeast District Office of the Ohio EPA.)
5. For Lorain County Landfill #1 and Lorain County Landfill #2, the permittee shall operate each interior wellhead in the collection system with a landfill gas temperature less than 55 degrees Centigrade and either a nitrogen level less than 20 percent or an oxygen level less than 5 percent. The permittee may establish a higher operating temperature, nitrogen, or oxygen value at a particular well. A higher operating value demonstration shall show supporting data that the elevated parameter does not cause fires or significantly inhibit anaerobic decomposition by killing methanogens.

If a well exceeds one of these parameters, action shall be initiated to correct the exceedance within 15 calendar days. If the correction can not 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, unless the reason for the exceedance is listed above in section A.II.2 of this permit.
6. For Lorain County Landfill #1 and Lorain County Landfill #2, the permittee shall operate the collection system so that the methane concentration is less than 500 parts per million above background at the surface of the landfill.
7. For Lorain County Landfill #1 and Lorain County Landfill #2, the permittee shall operate the collection system such that all collected gases are vented to a control system designed and operated in compliance with section A.I.2.g of this permit. In the event the collection or control system is inoperable, the gas mover system shall be shut down and all valves in the collection and control system contributing to venting of the gas to the atmosphere shall be closed within one hour.
8. For Lorain County Landfill #1 and Lorain County Landfill #2, the permittee shall operate the combustion device at all times when the collected gas is routed to the system.
9. The average combustion temperature, for the Lorain County Landfill #2 combustion device, for any 3-hour block of time when the emissions unit is in operation, shall not be less than 1370

degrees Fahrenheit.

**10.**

For Lorain County Landfill #2, the total quantity of landfill gas burned in the combustion device shall not exceed 3000 dry standard cubic feet per minute.

**11.** For Lorain County Landfill #1, the total quantity of landfill gas burned in the enclosed combustor shall not exceed 2000 dry standard cubic feet per minute.

**12.** The average combustion temperature, for the Lorain County Landfill #1 enclosed combustor, for any 3-hour block of time when the emissions unit is in operation, shall not be less than 1400 degrees Fahrenheit.

**III. Monitoring and/or Record keeping Requirements**

- 1.** The permittee shall perform daily inspections of each load-in operation at each active MSW landfill cell.
- 2.** Except as otherwise provided in this section, the permittee shall perform daily inspections of the wind erosion from each active MSW landfill cell surfaces.
- 3.** Except as otherwise provided in this section, the permittee shall perform monthly inspections of the wind erosion from each closed MSW landfill cell surfaces.
- 4.** The purpose of the inspections is to determine the need for implementing the control measures specified in this permit for load-in of a MSW landfill cell and wind erosion from the surface of a MSW landfill cell. The inspections shall be performed during representative, normal landfill operating conditions.
- 5.** No inspection shall be necessary for wind erosion from the surface of a MSW landfill cell when the cell is covered with snow and/or ice and for any landfill cell activity if precipitation has occurred that is sufficient for that day to ensure compliance with the above-mentioned applicable requirements. Any required inspection that is not performed due to any of the above-mentioned events shall be performed as soon as such event(s) has (have) ended, except if the next required inspection is within one week.
- 6.** The permittee may, upon receipt of written approval from the Northeast District Office of the Ohio EPA, modify the above-mentioned inspection frequencies if operating experience indicates that less frequent inspections would be sufficient to ensure compliance with the above-mentioned applicable requirements. Such modified inspection frequencies would not be considered a minor

or significant modification that would be subject to the Title V permit modification requirements in paragraphs (C)(1) and (C)(3) of OAC rule 3745-77-08.

7. The permittee shall maintain records of the following information:
  - a. The date and reason any required inspection was not performed, including those inspections that were not performed due to snow and/or ice cover or precipitation;
  - b. The date of each inspection where it was determined by the permittee that it was necessary to implement the control measures;
  - c. The dates the control measures were implemented; and
  - d. On a calendar quarter basis, the total number of days the control measures were implemented and, for wind erosion from landfill surfaces, the total number of days where snow and/or ice cover or precipitation were sufficient to not require the control measure.

The information required in 7.d shall be kept separately for (i) the load-in operation and (ii) the landfill surfaces (wind erosion), and shall be updated on a calendar quarter basis within 30 days after the end of each calendar quarter.
  - e. The permittee shall annually record the amount of MSW waste deposited.
8. For the Lorain County Landfill #1 active gas collection system, the permittee shall install a sampling port at each wellhead and record the gauge pressure in the gas collection header on a monthly basis.
9. For the Lorain County Landfill #2 active gas collection system, the permittee shall install a sampling port and a thermometer or other temperature measuring device, or an access port for temperature measurements at each wellhead and record the following information on a monthly basis:
  - a. The gauge pressure in the gas collection header at each individual well;
  - b. The nitrogen or oxygen concentration in the landfill gas; and
  - c. The temperature of the landfill gas.
10. For Lorain County Landfill #2, the permittee shall monitor surface concentrations of methane on a quarterly basis as follows:
  - a. Monitor surface concentrations of methane along the entire perimeter of the collection area and along a serpentine pattern spaced 30 meters apart (or a site-specific established spacing) for each collection area.

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- b. The background concentration shall be determined by moving the probe inlet upwind and downwind outside the boundary of the landfill at a distance of at least 30 meters from the perimeter wells.
  - c. Surface emissions monitoring shall be performed in accordance with section 4.3.1 of Method 21 of Appendix A of 40 CFR, Part 60, except that the probe inlet shall be placed within 5 to 10 centimeters of the ground. Monitoring shall be performed during typical meteorological conditions.
  - d. Any reading of 500 parts per million or more above background at any location shall be recorded as a monitored exceedance and the actions specified below shall be taken. As long as the specified actions are taken, the exceedance is not a violation of the operational requirements listed in A.II.6:
    - 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 remonitored within 10 calendar days of detecting the exceedance.
    - iii. If the remonitoring 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 remonitoring shows a third exceedance for the same location, 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 Ohio EPA for approval. No further monitoring of that location is required until the action specified 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 remonitoring specified above, shall be remonitored one month from the initial exceedance. If the one month remonitoring shows a concentration less than 500 parts per million above background, no further monitoring of that location is required until the next quarterly monitoring period. If the one month remonitoring shows an exceedance, the actions specified above shall be taken.
11. For the enclosed combustor at Lorain County Landfill #1 and the combustion device at Lorain County Landfill #2, the permittee shall calibrate, maintain, and operate according to the manufacturer's specifications a gas flow rate measuring device that provides a measurement of gas flow to the control device. The gas flow shall be recorded at least every 15 minutes.
12. For Lorain County Landfill #1 and Lorain County Landfill #2, the permittee shall operate and

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maintain a continuous temperature monitor and recorder which measures and records the combustion temperature within each combustion device when the emissions unit is in operation. Units shall be in degrees Fahrenheit. The monitoring and recording devices shall be capable of accurately measuring the desired parameter. The temperature monitor and recorder shall be installed, calibrated, operated and maintained in accordance with the manufacturer's recommendations, with any modifications deemed necessary by the permittee.

13. For Lorain County Landfill #1 and Lorain County Landfill #2, if a gas flow measuring device is not installed for the bypass line, then the permittee shall 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.
14. For Lorain County Landfill #1 and Lorain County Landfill #2, the permittee shall maintain all the following information for the life of the control equipment as measured during the initial performance tests or compliance demonstrations:

- a. The maximum expected gas generation flow rate as calculated based on the following:

$Q_m = \text{Summation of } \{2 \times k \times L_o \times M_i \times (e \text{ to the power } -k t_i \text{ for } i = 1 \text{ through } i = n)$   
where,

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

$k$  = methane generation rate constant, per year

$L_o$  = 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

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 paragraph A.III.14.a. If the landfill is still accepting waste, the actual measured flow rate will not equal the maximum expected gas generation rate, so calculations using the equations in paragraph A.III.14.a. 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. (The permittee may use another method to determine the maximum gas generation flow rate, if the method has been approved by the Ohio EPA.)

- b. The density of wells, horizontal collectors, surface collectors, or other gas extraction devices determined using the procedures specified in 40 CFR Part 60.759(a)(1).

- c. The percent reduction of NMOC achieved by the combustion device.
  - d. The gas flow rate or bypass flow rate measurements.
15. For Lorain County Landfill #1 and Lorain County Landfill #2, the permittee shall keep for the life of the collection systems up-to-date, readily accessible plot maps showing each existing and planned collector in the system and including a unique location label for each collector.
  16. For Lorain County Landfill #1 and Lorain County Landfill #2, the permittee shall keep for the life of the collection system up-to-date, readily accessible, on-site records of the maximum design capacity of each landfill, 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 hardcopy or electronic formats are acceptable. These records may be also required by the Ohio EPA, Division of Solid and Infectious Waste Management, and shall satisfy this permit condition.
  17. For Lorain County Landfill #1 and Lorain County Landfill #2, the permittee shall conduct surface testing around the perimeter of each collection area along a pattern that traverses each 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.
  18. For Lorain County Landfill #1 and Lorain County Landfill #2, the permittee shall monitor the gauge pressure in the gas collection header at each wellhead on a monthly basis. If a positive pressure exists, action shall be initiated to correct the exceedance within 5 calendar days, except for the conditions noted in A.II.4 of this permit. 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 measures shall not cause exceedances of other operational or performance standards.
  19. For Lorain County Landfill #2, the permittee shall record, each day, all 3-hour blocks of time during which the average combustion temperature within the combustion device was less than 1370 degrees Fahrenheit.
  20. For Lorain County Landfill #1, the permittee shall record, each day, all 3-hour blocks of time during which the average combustion temperature within the enclosed combustor was less than 1400 degrees Fahrenheit.

#### **IV. Reporting Requirements**

1. The permittee shall submit quarterly deviation reports that identify any of the following

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occurrences relating to fugitive dust emissions from the landfill operations:

- a. Each day during which an inspection was not performed by the required frequency, excluding an inspection which was not performed due to an exemption for snow and/or ice cover or precipitation; and
  - b. Each instance when a control measure, that was to be implemented as a result of an inspection, was not implemented.
2. For Lorain County Landfill #1 and Lorain County Landfill #2, the permittee shall submit deviation (excursion) reports that identify any of the following occurrences:
- a. Any record which indicates that the gauge pressure in the gas collection header at each individual well was positive, after actions specified in A.III.18 are taken;
  - b. Any record which indicates that the nitrogen or oxygen concentration in the landfill gas was greater than 20% or 5%, respectively, unless the conditions of A.II.5 are met;
  - c. Any record which indicates that the temperature of the landfill gas was greater than 55 degrees Celsius, unless the conditions of A.II.5 are met;
  - d. Any record which indicates that the surface concentration of methane was greater than 500 parts per million above background, after actions specified in A.III.10 are taken;
  - e. All periods when the gas stream is diverted from the control device through a bypass line or the indication of bypass flow or any record which indicates that the bypass line was not maintained in the closed position;
  - f. For Lorain County Landfill # 2, all 3-hour periods of operation during which the average combustion temperature was less than 1370 degrees Fahrenheit; and
  - g. For Lorain County Landfill # 1, all 3-hour periods of operation during which the average combustion temperature was less than 1400 degrees Fahrenheit.
3. The deviation reports shall be submitted in accordance with the reporting requirements of the General Terms and Conditions of this permit.
4. For Lorain County Landfill #1 and Lorain County Landfill #2, any breakdown or malfunction of the landfill gas collection systems resulting in the emission of raw landfill gas emissions to the atmosphere shall be reported to the Northeast District Office of the Ohio EPA within one hour

after the occurrence, or as soon as reasonably possible, and immediate remedial measures shall be undertaken to correct the problem and prevent further emissions to the atmosphere.

5. For Lorain County Landfill #2, the permittee shall submit a closure report to the Northeast District Office of the Ohio EPA within 30 days of waste acceptance cessation. The Ohio EPA may request additional information as may be necessary to verify that permanent closure has taken place in accordance with the requirements of 40 CFR Part 258.60. For Lorain County Landfill #1, if a closure report has been submitted to the Ohio EPA, no additional wastes may be placed into the landfill without filing a notification of modification as described in 40 CFR Part 60.7(a)(4).
6. For Lorain County Landfill #2, the permittee shall submit an equipment removal report to the Northeast District Office of the Ohio EPA, 30 days prior to removal or cessation of operation of the control equipment. The equipment removal report shall contain the information specified in 40 CFR Part 60.757(e)(1). The Ohio EPA may request additional information as may be necessary to verify that all of the conditions for removal in 40 CFR Part 60.752(b)(2)(v) have been met.
7. For Lorain County Landfill #1, the permittee shall submit an equipment removal report to the Northeast District Office of the Ohio EPA, 30 days prior to removal or cessation of operation of the control equipment. The equipment removal report shall contain the information specified in 40 CFR Part 60.757(e)(1). The Ohio EPA may request additional information as may be necessary to verify that all of the conditions for removal in 40 CFR Part 60.752(b)(2)(v) have been met.
8. For Lorain County Landfill #1 and Lorain County Landfill #2, the permittee shall submit annual reports which include the following:
  - a. Any record indicating the date of installation and the location of each well or collection system expansion added pursuant to 40 CFR 60.755(a)(3), (b), and (c)(4); and
  - b. The description and duration of all periods when the combustion devices were not operating for a period exceeding 1-hour.

These reports shall be submitted by January 31 of each year.

9. For Lorain County Landfill #1 and Lorain County Landfill #2, the permittee shall submit annual reports which detail all periods when the collection system was not operating in excess of 5 days. These 5 days will include the 72 (3 days) hours allocated Energy Developments Incorporated in Ohio EPA PTI number 02-17062, should the power generation station not be operable. This

report shall be submitted by January 31 of each year.

## V. Testing Requirements

1. Compliance with the visible emission limitations for the landfill surfaces and combustion devices identified above shall be determined in accordance with Test Method 9 as set forth in "Appendix on Test Methods" in 40 CFR, Part 60 ("Standards of Performance for New Stationary Sources").
2. Emission Limit: 1.5 pounds per hour of particulate emissions from the Lorain County Landfill #2 combustion device.

Applicable Compliance Method: Compliance may be determined by the following equation:

$$ER = (17 \times F \times 0.5 \times 60) / 1E6 \quad \text{where:}$$

ER = emission rate (pounds per hour)

17 = emission factor from AP-42, section 2.4, Municipal Solid Waste Landfills, version 11/98 (lbs of particulate emissions per million cubic feet of methane)

F = average flow rate of landfill gas into combustion device (dscfm)

0.5 = assumption that 50% of landfill gas is methane

60 = conversion factor (minutes/hour)

1E6 = part of emission factor associated with AP-42

Compliance with the mass emission limitation shall be determined by using Method 5 as set forth in 40 CFR Part 60, Appendix A, if required by the Ohio EPA.

3. Emission Limit: 6.7 tons per year of particulate emissions from the Lorain County Landfill #2 combustion device.

Applicable Compliance Method: Compliance shall be determined by multiplying the pounds per hour limit above by 8760 (hours per year) and dividing by 2000 (pounds per ton).

4. Emission Limit: 3.6 pounds per hour of oxides of nitrogen from the Lorain County Landfill #2 combustion device

Applicable Compliance Method: Compliance may be determined by using the following equation:

$$ER = (40 \times F \times 0.5 \times 60) / 1E6 \quad \text{where:}$$

ER = emission rate (pounds per hour)

40 = emission factor from AP-42, section 2.4, Municipal Solid Waste Landfills, 11/98 version. (lbs of nitrogen oxides per million cubic feet of methane)

F = average flow rate of landfill gas into the combustion device (dscfm)

0.5 = assumption that 50% of landfill gas is methane

60 = conversion factor (min/hour)

1E 6 = part of emission factor associated with AP-42

Compliance with the mass emission limitation shall be determined by using Method 7 as set forth in 40 CFR Part 60, Appendix A, if required by the Ohio EPA.

5. Emission Limit: 15.8 tons per year of oxides of nitrogen from the Lorain County Landfill #2 combustion device.

Applicable Compliance Method: Compliance shall be determined by multiplying the pounds per hour limit by 8760 (hours per year) and dividing by 2000 (pounds per ton).

6. Emission Limit: 3.0 pounds per hour of sulfur dioxide from the Lorain County Landfill #2 combustion device.

Applicable Compliance Method: Compliance may be determined by using the following equation:

$$ER = (8.14E-6 \times F \times 0.5 \times 60) / 1E 6 \quad \text{where:}$$

ER = emission rate (pounds per hour)

8.14E-6 = emission factor from AP-42, section 2.4, Municipal Solid Waste Landfills, 11/98 version (lbs of sulfur dioxide per million cubic feet of methane)

F = average flow rate of landfill gas into the combustion device (dscfm)

0.5 = assumption that 50% of landfill gas is methane

60 = conversion factor (min/hour)

1E 6 = part of emission factor associated with AP-42

Compliance with the mass emission limitation shall be determined by using Method 6 as set forth in 40 CFR Part 60, Appendix A, if required by the Ohio EPA.

7. Emission Limit: 13.3 tons per year of sulfur dioxide from the Lorain County Landfill #2 combustion device.

Applicable Compliance Method: Compliance shall be determined by multiplying the pounds per hour limit by 8760 (hours per year) and dividing by 2000 (pounds per ton).

8. Emission Limit: 32.8 pounds per hour of carbon monoxide emissions from the Lorain County Landfill #2 combustion device.

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Applicable Compliance Method: If required, compliance shall be determined by performing emission tests in accordance with Method 10 of 40 CFR Part 60, Appendix A.

9. Emission Limit: 143.5 tons per year of carbon monoxide emissions from the Lorain County Landfill #2 combustion device.

Applicable Compliance Method: Compliance shall be determined by multiplying the pounds per hour limit by 8760 (hours per year) and dividing by 2000 (pounds per ton).

10. Emission Limit: 1.2 pounds per hour of non-methane organic compound emissions from the Lorain County Landfill #2 combustion device.

Applicable Compliance Method: If required, compliance shall be determined by performing emission tests in accordance with Method 25 or Method 25A of 40 CFR Part 60, Appendix A.

11. Emission Limit: 5.2 tons per year of non-methane organic compound emissions from the Lorain County Landfill #2 combustion device.

Applicable Compliance Method: Compliance shall be determined by multiplying the pounds per hour limit above by 8760 (hours per year) and dividing by 2000 (pounds per ton).

12. Emission Limit: 0.03 pound per hour of hydrogen chloride emissions from the Lorain County Landfill #2 combustion device.

Applicable Compliance Method: If required, compliance shall be determined by performing emission tests in accordance with Method 26 or Method 26A of 40 CFR Part 60, Appendix A.

13. Emission Limit: 0.1 ton per year of hydrogen chloride emission from the Lorain County Landfill #2 combustion device.

Applicable Compliance Method: Compliance shall be determined by multiplying the pounds per hour limit by 8760 (hours per year) and dividing by 2000 (pounds per ton).

14. Emission Limit: 55.7 tons per year of particulate emissions from the landfill surfaces.

Applicable Compliance Method: Compliance shall be determined by adding the results from applying the following equations:

For waste handling, AP-42, section 13.2.4, Aggregate Handling and Storage Piles, version 1/95:

$$E = \{[k \times 0.0032 (U/5)^{1.3}] / (M/2)^{1.4}\} \times \text{TPY} / 2000, \text{ where:}$$

E = emission rate, tons per year  
 k = particulate emissions coefficient, 0.74  
 U = mean wind speed in mph, 10  
 M = moisture content, 14%  
 TPY = waste acceptance rate, tons per year (391,400)  
 2000 = conversion factor, pounds per ton

For wind erosion, from Air Pollution Engineering Manual, Chapter 4, Wind Erosion:

$E = 1.7 \times (s/1.5) \times [(365-p)/235] \times (f/15) \times A \times 365/2000$ , where:

E = emissions (tons per year)  
 s = silt content (5.2%)  
 p = number of days with precipitation greater than or equal to 0.01 inches (156.4)  
 f = percent of time the wind speed exceeds 12 miles per hour (26.5%)  
 A = area of landfill (acres) (5 acres uncovered at any time)  
 365 = conversion factor (days per year)  
 2000 = conversion factor (pounds per ton)

15. The nitrogen level shall be determined using Method 3C of 40 CFR Part 60, Appendix A, unless an alternative test method is established as allowed by 40 CFR Part 60.752 (b)(2)(i).
16. The oxygen level shall be determined by an oxygen meter using Method 3A of 40 CFR Part 60, Appendix A, unless an alternative test method is established as allowed by 40 CFR Part 60.752 (b)(2)(i), except that:
  - a. The span shall be set so that the regulatory limit is between 20% and 50% of the span;
  - b. A data recorder is not required;
  - c. Only two calibration gases are required, a zero and span, and ambient air may be used as the span;
  - d. A calibration error check is not required ; and
  - e. The allowable sample bias, zero drift, and calibration drift are plus or minus 10%.
17. For Lorain County Landfill #2, after installation of a collection and control system in compliance with 40 CFR Part 60.755, the permittee shall calculate the NMOC emission rate for the purpose of determining when the system can be removed as provided in 40 CFR Part 60.752 (B)(2)(v) in

accordance with the equation and procedures specified in 40 CFR Part 60.754(b), (b)(1), and (b)(2). The permittee may use another method to determine landfill gas flow rate and NMOC concentration if the method has been approved by the Ohio EPA as provided in 40 CFR Part 60.752(b)(2)(i)(B).

18. For Lorain County Landfill # 1 and Lorain County Landfill #2, the surface methane background concentration shall be determined by the following:
  - a. Use of an organic vapor analyzer, flame ionization detector, or other portable monitor meeting the specifications of 40 CFR 60.755(d);
  - b. Moving the probe inlet upwind and downwind outside the boundary of the landfill at a distance of at least 30 meters from the perimeter of the wells;
  - c. In accordance with Method 21, Section 4.3.1 of 40 CFR 60, Appendix A, except that the probe inlet shall be placed within 5 to 10 centimeters of the ground; and
  - d. Monitoring shall be performed during typical meteorological conditions.
19. For Lorain County Landfill #1 and Lorain County Landfill #2, the flow rate of landfill gas shall be determined by measuring the total landfill gas flow rate at the common header pipe that leads to the combustion devices using a gas flow measuring device calibrated according to the provisions of section 4 of Method 2E of Appendix A of 40 CFR Part 60.
20. For Lorain County Landfill #1 and Lorain County Landfill #2, the average NMOC concentration shall be determined by collecting and analyzing landfill gas sampled from the common header pipe before the gas moving or condensate removal equipment, using the procedures in Method 25C or Method 18 of 40 CFR 60, Appendix A.
21. The permittee shall conduct, or have conducted, emission testing for the Lorain County Landfill #1 enclosed combustor and Lorain County Landfill #2 combustion device in accordance with the following requirements:
  - a. The emission testing shall be conducted approximately 2.5 years after permit issuance and within 6 months prior to permit expiration.
  - b. The emission testing shall be conducted to demonstrate compliance with (i) the reduction of NMOC by 98 weight percent or reducing the NMOC outlet concentration to less than 20 parts per million by volume, dry basis as hexane at three percent oxygen, (ii) the allowable emission rate for hydrogen chloride, and (iii) the allowable emission rate for

carbon monoxide.

- c. The following test method(s) shall be employed to demonstrate compliance with the allowable mass emission rate(s): for NMOC, Method 25, 25A or Method 18 of 40 CFR Part 60, Appendix A; for hydrogen chloride, Method 26 or Method 26A of 40 CFR Part 60, Appendix A; for carbon monoxide Method 10 of 40 CFR Part 60, Appendix A. Alternative USEPA approved test methods may be used with prior approval from the Ohio EPA.
- d. The test(s) shall be conducted while the emissions unit is operating at or near its maximum capacity, unless otherwise specified or approved by the Northeast District Office of the Ohio EPA.

Not later than 30 days prior to the proposed test date(s), the permittee shall submit an "Intent to Test" notification to the Northeast District Office of the Ohio EPA. The "Intent to Test" notification shall describe in detail the proposed test methods and procedures, the emissions unit operating parameters, the time(s) and date(s) of the test(s), and the person(s) who will be conducting the test(s). Failure to submit such notification for review and approval prior to the test(s) may result in the Ohio EPA Northeast District Office's refusal to accept the results of the emission test(s).

Personnel from the Ohio EPA Northeast District Office shall be permitted to witness the test(s), examine the testing equipment, and acquire data and information necessary to ensure that the operation of the emissions unit and the testing procedures provide a valid characterization of the emissions from the emissions unit and/or the performance of the control equipment.

A comprehensive written report on the results of the emissions test(s) shall be signed by the person or persons responsible for the tests and submitted to the Northeast District Office of the Ohio EPA within 30 days following completion of the test(s). The permittee may request additional time for the submittal of the written report, where warranted, with prior approval from the Ohio EPA Northeast District Office.

- 22.** Emission Limit: 1.0 pound per hour of particulate emissions from the Lorain County Landfill #1 enclosed combustor.

Applicable Compliance Method: Compliance shall be determined by the following equation:

$$ER = (17 \times F \times 0.5 \times 60) / 1E6 \quad \text{where:}$$

ER = emission rate (pounds per hour)

17 = emission factor from AP-42, section 2.4, Municipal Solid Waste Landfills, version 11/98 (lbs of particulate emissions per million cubic feet of methane).

F = average flow rate of landfill gas into enclosed combustor (dscf)

0.5 = assumption that 50% of landfill gas is methane

60 = conversion factor (minutes/hour)

1E6 = part of emission factor associated with AP-42

23. Emission Limit: 4.5 tons per year of particulate emissions from the Lorain County Landfill #1 enclosed combustor.

Applicable Compliance Method: Compliance shall be determined by multiplying the pounds per hour limit by 8760 (hours per year) and dividing by 2000 (pounds per ton).

24. Emission Limit: 2.4 pounds per hour of oxides of nitrogen from the Lorain County Landfill #1 enclosed combustor.

Applicable Compliance Method: Compliance shall be determined by using the following equation:

$$ER = (40 \times F \times 0.5 \times 60) / 1E6 \quad \text{where:}$$

ER = emission rate (pounds per hour)

40 = emission factor from AP-42, section 2.4, Municipal Solid Waste Landfills, 11/98 version (lbs of nitrogen oxides per million cubic feet of methane)

F = average flow rate of landfill gas into the enclosed combustor (dscfm)

0.5 = assumption that 50% of landfill gas is methane

60 = conversion factor (min/hour)

1E6 = part of emission factor associated with AP-42

Compliance with the mass emission limitation shall be determined by using Method 7 as set forth in 40 CFR Part 60, Appendix A, if required by the Ohio EPA.

25. Emission Limit: 10.5 tons per year of oxides of nitrogen from the Lorain County Landfill #1 enclosed combustor.

Applicable Compliance Method: Compliance shall be determined by multiplying the pounds per hour limit by 8760 (hours per year) and dividing by 2000 (pounds per ton).

26. Emission Limit: 2.0 pounds per hour of sulfur dioxide from the Lorain County Landfill #1 enclosed combustor.

$$ER = (8.14E-6 \times F \times 0.5 \times 60) / 1E6 \quad \text{where:}$$

ER = emission rate (pounds per hour)

8.14E-6 = emission factor from AP-42, section 2.4, Municipal Solid Waste Landfills, 11/98 version (lbs of sulfur dioxide per million cubic feet of methane)

F = average flow rate of landfill gas into the combustion device (dscfm)

0.5 = assumption that 50% of landfill gas is methane

60 = conversion factor (min/hour)

1E6 = part of emission factor associated with AP-42

Compliance with the mass emission limitation shall be determined by using Method 6 as set forth in 40 CFR Part 60, Appendix A, if required by the Ohio EPA.

27. Emission Limit: 8.9 tons per year of sulfur dioxide from the Lorain County Landfill #1 enclosed combustor.

Applicable Compliance Method: Compliance shall be determined by multiplying the pounds per hour limit by 8760 (hours per year) and dividing by 2000 (pounds per ton).

28. Emission Limit: 17.1 pounds per hour of carbon monoxide from the Lorain County Landfill #1 enclosed combustor.

Applicable Compliance Method: If required, compliance shall be determined by performing emission tests in accordance with Method 10 of 40 CFR Part 60, Appendix A.

29. Emission Limit: 74.5 tons per year of carbon monoxide from the Lorain County Landfill #1 enclosed combustor.

Applicable Compliance Method: Compliance shall be determined by multiplying the limit above by 8760 (hours per year) and dividing by 2000 (pounds per ton).

30. Emission Limit: 0.03 pound per hour of hydrogen chloride from the Lorain County Landfill #1 enclosed combustor.

Applicable Compliance Method: If required, compliance shall be determined by performing emission tests in accordance with Method 26 or Method 26A of 40 CFR Part 60, Appendix A.

31. Emission Limit: 0.1 ton per year of hydrogen chloride from the Lorain County Landfill #1 enclosed combustor.

Applicable Compliance Method: Compliance shall be determined by multiplying the allowable emission rate above by 8760 (hours per year) and dividing by 2000 (pounds per ton).

32. Emission Limit: 0.8 pound per hour of non-methane organic compound emissions from the Lorain County Landfill #1 enclosed combustor.

Applicable Compliance Method: If required, compliance shall be determined by performing emission tests in accordance with Method 25 or Method 25A of 40 CFR Part 60, Appendix A.

33. Emission Limit: 3.5 tons per year of non-methane organic compound emissions from the Lorain

County Landfill #1 enclosed combustor.

Applicable Compliance Method: Compliance shall be determined by multiplying the pounds per hour limit above by 8760 (hours per year) and dividing by 2000 (pounds per ton).

- 34.** Emission Limit: 38.9 tons per year of fugitive non-methane organic compound emissions from the Lorain County Landfill #1 and Lorain County Landfill #2.

Applicable Compliance Method: Compliance shall be determined by multiplying the maximum NMOC generation rate, as calculated by LandGEM (259.38 tons), by the percent NMOC not captured (15 percent) and dividing by 2000 (pounds per hour).

## **VI. Miscellaneous Requirements**

- 1.** Pursuant to the authority in OAC 3745-77-07 (C)(2) or ORC Section 3704.03 (L), any representative of the Director may, upon presentation of proper identification, enter at any reasonable time upon any portion of the property where this landfill is located, including any improvements thereon, to make inspections, take samples, conduct tests and examine records or reports pertaining to any emissions of air contaminants and any monitoring equipment, emissions control equipment or methods. No operator or agent of this landfill shall act in any manner to refuse, hinder, or thwart this legal right of entry.
- 2.** This permit to install replaces the following permits to install, for the landfill operations only:
  - a. 02-8381 for Lorain County I Landfill;
  - b. 02-8382 for Lorain County II Landfill; and
  - c. 02-13577 for Lorain County II Landfill Northern Expansion.

**B. State Only Enforceable Section**

**I. Applicable Emissions Limitations and/or Control Requirements**

1. The specific operations(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be specified in narrative form following the table.

<u>Operations, Property, and/or Equipment</u>	<u>Applicable Rules/Requirements</u>	<u>Applicable Emissions Limitations/Control Measures</u>
F002 - Landfill Operations at Lorain County Landfill no. 1 and no. 2, to include an enclosed combustor for landfill no. 1 and a combustion device for landfill no. 2. Additional controls by others.	OAC rule 3745-31-05	None
Lorain County Landfill #2 combustion device	None	None
Enclosed Combustor for Landfill #1	None	None

**2. Additional Terms and Conditions**

**2.a** None

**II. Operational Restrictions**

None

**III. Monitoring and/or Record keeping Requirements**

None

**IV. Reporting Requirements**

None

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**Brown**

**PTI A**

**Issued: 3/6/2003**

Emissions Unit ID: **F002**

**V. Testing Requirements**

None

**VI. Miscellaneous Requirements**

None