



John R. Kasich, Governor
Mary Taylor, Lt. Governor
Craig W. Butler, Director

10/28/2016

Mr. Dennis Bollinger
Brown County Landfill Gas Power Station
3322 West End Avenue, Suite 115
Nashville, TN 37203

RE: FINALAIR POLLUTION PERMIT-TO-INSTALL
Facility ID: 0708000095
Permit Number: P0119715
Permit Type: Initial Installation
County: Brown

Certified Mail

Yes	TOXIC REVIEW
No	PSD
No	SYNTHETIC MINOR TO AVOID MAJOR NSR
No	CEMS
Yes	MACT/GACT
Yes	NSPS
No	NESHAPS
Yes	NETTING
No	MAJOR NON-ATTAINMENT
Yes	MODELING SUBMITTED
No	MAJOR GHG
No	SYNTHETIC MINOR TO AVOID MAJOR GHG

Dear Permit Holder:

Enclosed please find a final Ohio Environmental Protection Agency (EPA) Air Pollution Permit-to-Install (PTI) which will allow you to install or modify the described emissions unit(s) in a manner indicated in the permit. Because this permit contains several conditions and restrictions, we urge you to read it carefully. Because this permit contains conditions and restrictions, please read it very carefully. In this letter you will find the information on the following topics:

- **How to appeal this permit**
- **How to save money, reduce pollution and reduce energy consumption**
- **How to give us feedback on your permitting experience**
- **How to get an electronic copy of your permit**
- **What should you do if you notice a spill or environmental emergency?**

How to appeal this permit

The issuance of this PTI is a final action of the Director and may be appealed to the Environmental Review Appeals Commission pursuant to Section 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. The appeal must be filed with the Commission within thirty (30) days after notice of the Director's action. The appeal must be accompanied by a filing fee of \$70.00, made payable to "Ohio Treasurer Josh Mandel," which the Commission, in its discretion, may reduce if by affidavit you demonstrate that payment of the full amount of the fee would cause extreme hardship. Notice of the filing of the appeal shall be filed with the Director within three (3) days of filing with the Commission. Ohio EPA requests that a copy of the appeal be served upon the Ohio Attorney General's Office, Environmental Enforcement Section. An appeal may be filed with the Environmental Review Appeals Commission at the following address:

Environmental Review Appeals Commission
77 South High Street, 17th Floor
Columbus, OH 43215

How to save money, reduce pollution and reduce energy consumption

The Ohio EPA is encouraging 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 Compliance Assistance and Pollution Prevention at (614) 644-3469. Additionally, all or a portion of the capital expenditures related to installing air pollution control equipment under this permit may be eligible for financing and State tax exemptions through the Ohio Air Quality Development Authority (OAQDA) under Ohio Revised Code Section 3706. For more information, see the OAQDA website: www.ohioairquality.org/clean_air

How to give us feedback on your permitting experience

Please complete a survey at www.epa.ohio.gov/survey.aspx and give us feedback on your permitting experience. We value your opinion.

How to get an electronic copy of your permit

This permit can be accessed electronically via the eBusiness Center: Air Services in Microsoft Word format or in Adobe PDF on the Division of Air Pollution Control (DAPC) Web page, www.epa.ohio.gov/dapc by clicking the "Search for Permits" link under the Permitting topic on the Programs tab.

What should you do if you notice a spill or environmental emergency?

Any spill or environmental emergency which may endanger human health or the environment should be reported to the Emergency Response 24-HOUR EMERGENCY SPILL HOTLINE toll-free at (800) 282-9378. Report non-emergency complaints to the appropriate district office or local air agency.

If you have any questions regarding your permit, please contact Portsmouth City Health Dept., Air Pollution Unit at (740)353-5156 or the Office of Compliance Assistance and Pollution Prevention at (614) 644-3469.

Sincerely,



Michael E. Hopkins, P.E.
Assistant Chief, Permitting Section, DAPC

Cc: U.S. EPA
Portsmouth; Indiana; Kentucky



Response to Comments

Facility ID:	0708000095
Facility Name:	Brown County Landfill Gas Power Station
Facility Description:	Landfill gas to electricity power station
Facility Address:	9427 Beyers Road Georgetown, OH 45121-9301 Brown County
Permit:	P0119715, Permit-To-Install - Initial Installation
A public notice for the draft permit issuance was published in the Ohio EPA Weekly Review and appeared in the <i>The News Democrat</i> on 8-21-2016. The comment period ended on 9-23-2016.	
Hearing date (if held)	9-20-2016
Hearing Public Notice Date (if different from draft public notice)	

The following comments were received during the comment period specified. Ohio EPA reviewed and considered all comments received during the public comment period that pertain to the air permit requested by Bio-Energy (Ohio) to build a landfill gas power station at the Rumpke Brown County Landfill in Georgetown. This document is limited to responses to those comments. By law, Ohio EPA has authority to consider specific issues related to protection of the environment and public health. Often, public concerns fall outside the scope of that authority. For example, concerns about zoning issues are addressed at the local level. Ohio EPA may respond to those concerns in this document by identifying another government agency with more direct authority over the issue.

In an effort to help you review this document, the questions are grouped by topic and organized in a consistent format. PDF copies of the original comments in the format submitted are available upon request.

1. Topic: Company Comments

- a. Comment: Declassification of the engines as control devices in accordance with the recently amended Emission Guidelines and New Source Performance Standards (NSPS) for Municipal Solid Waste Landfill (40 CFR 60 Subparts WWW and XXX, respectively). The requirements in new subpart XXX apply to MSW landfills for which construction, reconstruction, or modification commenced after July 17, 2014, the date of the proposed rule. The requirements in subpart WWW continue to apply to MSW landfills for which construction, reconstruction, or modification was commenced on or after May 30, 1991, and on or before July 17, 2014. As this project will represent modification of the facility after the July 17, 2014, timeline, in our opinion, Subpart XXX is the applicable standard that will apply.
- b. Response: Ohio EPA has reviewed the definition of modification found in 40 CFR Part 60, Subpart XXX and determined that this project does not represent a modification of the facility as defined in NSPS XXX.
- c. Comment:As gas will be treated pursuant to Subpart XXX, the engines will no longer be classified as control systems per 40 CFR 60.752(b)(2)(iii)(B). In turn, the gas will be treated to meet the beneficial use standard per 40 CFR60.762(b)(2)(iii)(C).



- d. Response: Per response 1.b above, Ohio EPA does not believe the engines are subject to

NSPS XXX. Ohio EPA has determined 40 CFR Part 60, Subpart WWW requires all emissions from the gas treatment system to be controlled per 40 CFR 60.752(b)(2)(iii)(B).

- e. Comment: Ohio EPA has recently clarified application of the Air Toxics Rule specific to formaldehyde emissions from internal combustion engines. Per recent communication with Paul Koval (Ohio EPA, Air Toxics Unit Lead), the following exposure thresholds may be applied to formaldehyde emission resulting from internal combustion engine operation:

Maximum Allowable Ground Level Concentrations (MAGLC):

- i. One-hour short-term property line concentration. Not to exceed the Agency for Toxic Substance and Disease Registry (ATSDR) Minimal Risk Level (MRL) for acute exposure (0.04 ppm or 49 micrograms/m³).
- ii. Long-term (average annual) concentration not to exceed the Integrated Risk Information System (IRIS) Carcinogenicity Assessment for Lifetime Exposure (1 in 100,000) level of 0.8 micrograms/m³.

The applicant has completed enhanced air modeling of the proposed facility which reflects the revised exposure limits, including allowable adjustment in the emission rate for each of the three proposed engine installations. The allowable engine emission rate, as indicated through modeling is in excess of 2.5 pounds per hour, which is our requested emission rate.

- f. Response: Based upon review of the requested additional information received via email on 9/15/16, Ohio EPA believes 2.1 pounds per hour is the acceptable emission limit for formaldehyde. The permit terms have been revised to include language of the Ohio EPA alternative health based standard in place of the standard air toxics MAGLC language for formaldehyde.
- g. Comment: Detailed information regarding the date of manufacture for refurbished engines that have been procured for the proposed project has been obtained. Based on these dates of manufacture, one engine will be subject to the provisions of 40 CFR 63 Subpart ZZZZ (Engine No. P001), with the remaining two (Engine No. P002, & Engine No. P003) subject to 40 CFR 60 Subpart JJJJ.
- h. Response: The terms and conditions have been revised to reflect the actual applicable rules to each engine, resulting in separating the grouping of emission units to P001 subject to 40 CFR Part 63, Subpart ZZZZ and P002, P003 subject to 40 CFR Part 60, Subpart JJJJJ.
- i. Comment: Based on further examination of engine operations at similar facilities operated by Bio Energy, an increase in maximum allowable fueling rate to 650 cfm is being requested. We note that this increase fueling rate will also slightly increase the Potential to Emit (PTE) for sulfur dioxide, hydrochloric acid and hydrogen fluoride. None of the proposed increases will approach levels of significance for either Air Toxics review, or alter minor modification status.



- j. Response: The terms and conditions have been revised to the fueling rate of 650 cfm for each engine.
- k. Comment: Section B(2). Facility-Wide Terms and Conditions

As currently set forth in the draft PTI:

2. The following emissions units contained in this permit are subject to 40 CFR Part 63, Subpart ZZZZ: P001, P002, P003.

The following compression ignition (CI) reciprocating internal combustion engine(s) (RICE) greater than 500 brake horse power and located at a major source for hazardous air pollutants (HAPs), is subject to the requirements of the National Emission Standards for Hazardous Air Pollutants (NESHAP) for Stationary Reciprocating Internal Combustion Engines, 40 CFR Part 63, Subpart ZZZZ. The new stationary CI RICE P001, P002, & P003, installed on or after 12/19/02, shall meet the requirements of 40 CFR Part 63, Subpart ZZZZ upon startup.

Requested modification: Language proposed to clarify applicable NESHAP and NSPS regulations as follows:

2. The following emissions units contained in this permit are subject to 40 CFR Part 63, Subpart ZZZZ: P001. The following emission units are subject to 40 CFR 60, Subpart JJJJ: P002 and P003.

The spark ignited (SI) reciprocating internal combustion engine(s) (RICE), greater than 500 brake horse power and located at a major source for hazardous air pollutants (HAPs), is subject to the requirements of NESHAP for Stationary Reciprocating Internal Combustion Engines, 40 CFR Part 63, Subpart ZZZZ (P001) and New Source Performance Standards for Stationary Reciprocating Internal Combustion Engines (RICE), 40 CFR 60, Subpart JJJJ (P002 and P003). Each engine shall meet requirements set forth in the applicable subparts on startup.

- l. Response: Facility-wide term and condition B.2 has been revised as suggested.
- m. Comment: Section C(1)(b)(1)(a)-(k) Applicable Emission Limitations and/or Control Requirements

Requested modification: It is requested that all emission limits assigned to P001 through P003 be stated in terms of lbs/hr as opposed to a dual limitation that includes lbs/hr and g/bhp-hr. As the heat content of engine fuel (landfill gas) is subject to variation based on numerous external forces, operation during periods of lower than expected energy content will result in decreased engine horsepower. During such periods, pound per hour limits can be maintained, however the decrease in engine horsepower effectively lowers allowable emission rates. Similarly, during periods where heat content of the gas exceeds normal ranges (50 percent methane) engine horsepower may slightly increase. This will effectively increase emission rates that are based on a horsepower rating. Therefore, it is requested that all emission rated be simply established based on a non-variable metric (time) and directly associated with a measurable metric (pounds).



We note that use of lb/hr limits will not affect compliance with prescriptive emission limits set forth in 40 CFR Subpart JJJJ (Section C(1)(b)(i)) as voluntary limits proposed by the applicant fall well below thresholds established in this regulation.

n. Response: The permit has been revised to change the P001 through P003 ORC 3704.03(T) gram per brake horsepower hour (g/bhp-hr) emission limits to pounds per hour (lbs/hr) emission limits as suggested.

o. Comment: Section C(1)(b)(2)(d) Specifications for Gas Treatment and Control

Requested modification: It is requested that the regulatory reference be revised to reflect the amended NSPS (40 CFR 60 Subpart XXX). As gas will be treated pursuant to Subpart XXX, the engines will no longer be classified as control systems per 40 CFR 60.762(b)(2)(iii)(B). In turn, the gas will be treated to meet the beneficial use standard per 40 CFR 60.762(b)(2)(iii)(C).

p. Response: See response 1.b. above. The permit terms will not be revised.

q. Comment: Redundant comment for formaldehyde emissions limit per comment 1.e above.

r. Response: See response 1.f above.

s. Comment: Section C(1)(c)(3) Maximum Annual Engine Hours

The "operating hours levels" table included in this section effectively limits the production capacity of the facility within the initial year of operation. We cannot determine the regulatory basis for this restriction. As a result, we request it be removed.

With request to potential enforceability of permit emission limits, Bio Energy proposes to complete performance testing of all engines within 90 days following initial continuous operation. This will facilitate near immediate determination of compliance with applicable permit emission limits and allow for rapid assessment of any limits of concern.

t. Response: To ensure federal enforceability, the operating hours restriction during the first 12 months of operation will remain in the permit. However, the permit terms were revised to clarify that the amount of hours in the table pertains to each engine.

u. Comment: Section C(1)(c)(4) Maximum Allowable Gas Flow Rate

Response: See comment 1.i and response 1.j above. The permit terms have been revised to reference a gas flow rate of 650 cfm.

v. Comment: Section C(1)(c)(5)-(6) and Performance Test Compliance Demonstrations

Requested modification: As indicated in item k. above, based on the nature of landfill operations as the variety of external forces that may impact gas quality (specifically heat content), gas composition as measured during any specific performance test may change following that test period. These changes may necessitate (minor) adjustment of engine operation (including gas flow rate) and may also impact engine combustion chamber temperature, exhaust temperatures and a variety of similar engine operating metrics.



Therefore, it is requested that an operating allowance of plus/minus 15 percent be incorporated within these permit terms to facilitate necessary adjustment of engine operation as well as expected variability in engine performance resulting from changes in gas composition.

w. Response: The requested change will not be made. No other permits issued in Ohio during the permit review were found with a plus or minus 15 percent factor, nor were any other facilities operated by Energy Developments, Inc. (EDI).

x. Comment: Section C(1)(d)(3) Fuel Rate Monitoring

Requested modification: It is requested the maximum fueling rate be increased to 650 cfm.

y. Response: The permit terms have been revised to reference a fueling rate of 650 cfm for each engine.

z. Comment: Section C(1)(d)(4)-(6) Engine Performance Monitoring

Requested modification: It is requested that each of these terms be modified to indicate: "...During any period exceeding one-hour in duration, when untreated landfill gas is being delivered to the internal combustion engines, to demonstrate compliance with 40 CFR 60.762(b)(2)(ii)(b)...".

aa. Response: See response 1.b. above. The permit terms will not be revised.

bb. Comment: Section C(1)(d)(9) Visible Emissions Monitoring

Requested modification: It is requested that the frequency of visible emissions monitoring be reduced to monthly.

cc. Response: The permit terms will remain the same with weekly monitoring.

dd. Comment: Section C(1)(d)(10)-(12) Air Toxics Compliance

Requested modification: It is requested that the basis for Air Toxics compliance be revised to reflect the current Ohio EPA standard applicable to internal combustion engines as set forth in item c. above.

ee. Response: The permit terms have been revised to address the Ohio EPA alternative health based standard rather than the standard air toxics language.

ff. Comment: Section C(1)(e)(3) Fuel Rate Reporting

Requested modification: It is requested that the maximum fueling rate be increased to 650 cfm.

gg. Response: The permit terms have been revised to the fueling rate of 650 cfm for each engine.

hh. Comment: Section C(1)(e)(6)(d) Engine Combustion Temperature Reporting



Requested modification: It is requested that the applicable regulation be revised to 40 CFR 60.762(b)(2)(iii)(B).

ii. Response: See response 1.b. above. The permit terms will not be revised.

jj. Comment: Section C(1)(f)(2)(e) Formaldehyde Emission Limitations

Requested modification: It is requested that formaldehyde emission limits, per engine be revised as follows: 2.5 lbs/hr, 60 lbs/day, 13.15 tpy as a rolling 12-month summation.

kk. Response: The permit terms have been revised to 2.1 lbs/hr and 8.74 tpy as a rolling 12-month summation for each engine. This change was due to the alternative health-based standard for formaldehyde.

ll. Comment: Section C(1)(f)(2)(g) Sulfur Dioxide Emission Limitations

Requested modification: Emission limits requested in the original permit application were based on total sulfur concentration measured in 2013. As sulfur concentrations may increase, revised hourly and annual emission has been calculated based on a maximum estimated concentration of 850 ppm. It is requested that sulfur dioxide emission limits, per engine, be revised as follows: 3.16 lbs/hr, 75.8 lbs/day, 13.15 tpy as a rolling 12-month summation.

mm. Response: The permit terms have been revised as requested.

nn. Comment: Section C(1)(f)(2)(h) NMOC Emission Limitations

Requested modification: It is requested that the NMOC limitation be revised as follows: ..."During any period exceeding one-hour in duration, when untreated landfill gas is being delivered to the internal combustion engines, to demonstrate compliance with 40 CFR 60.762(b)(2)(iii)(B)...".

This modification will cite applicable requirements per 40 CFR 60, Subpart XXX, and limit required monitoring to only those periods when the engines are operating as control devices in the absence of an operating landfill gas treatment system.

oo. Response: See response 1.b. above. The permit terms will not be revised.

pp. Comment: Section C(1)(f)(2)(k) Sulfur Dioxide Emission Limitations

Requested modification: It is requested that sulfur dioxide emission limits, per engine, be revised to reflect 13.15 tpy as a rolling 12-month summation, per engine.

qq. Response: The permit terms have been revised as suggested.

2. Topic: Public Comments (language verbatim)

a. Comment: Citizen email received 9/23/16.

I just wanted to express my opinion on giving a permit to Bio-energy at Rumpke at Georgetown Ohio. I think it is a bad when the public did not know of the meeting I am sure there would have



been more residents attending I think before a permit is issued there needs to be another article put in the paper being more specific than the other meeting we already put up with a lot of odor coming from Rumpke how do we know that the Bio-energy won't produce an odor or some other kind of pollutant in the air there is a school too close to take any chances.

- b. Response: Notification of the public hearing was published in the Brown County Press on 8-21-2016. Notice of the public hearing was also available on the Ohio EPA's Public Interest Center

website page. A Citizen Advisory was mailed to everyone on the interested parties list for this site two weeks prior to the meeting.

- c. Comment: Citizen letter received 9/19/16.

Please be advised that I oppose the facility using gas generated by Rumpke Landfill to produce electric for the village of Georgetown. The landfill is very close to the school & residential area including a subdivision across from the school. In addition to local Brown County trash/garbage collection, there are numerous Rumpke trucks from other areas disposing of their wastes in this landfill and we have no way of knowing what is being disposed of. Therefore a gas facility could be dangerous, that is, leaks, or explosions, air pollution, etc. which would cause injuries and damages at the school as well as residents. This has been a concern ever since the landfill, as it is, has been located near the schools. I plan to attend the meeting on September 20 in the village, however, please use your influence in denying this permit for constructing this facility.

- d. Response: Ohio EPA appreciates these comments, but cannot consider the number of people for or against a site when evaluating permit applications.

- e. Comment: Citizens expressed concern regarding Ohio EPA's efforts to notify local citizens and other interested parties about this hearing, and the limited length of time to give testimony.

- f. Response: See response 2.b above. The public hearing was public noticed in the Brown County Press on 8/21/16. The hearing was also available on the Ohio EPA's Public Interest Center website page. A Citizen Advisory was mailed to everyone on the interested parties list for this site two weeks prior to the meeting. Comments received and oral testimony is regulated by the public hearing moderator to keep commenters on point.

- g. Comment: Citizen expressed concern that the project would not save utility costs for the community, increase truck traffic by bringing in more trash from other communities, and concerns about methane emissions by maximizing production through more garbage or by adding moisture to the landfill by leaving the top off the landfill and recirculating the leachate.

- h. Response: Ohio EPA has no way of knowing whether the Brown County Landfill Gas Power Station (BCLGPS) project will save the community on utility costs. Rumpke currently is allowed to accept an Authorized Maximum Daily Waste Receipt (AMDWR) of solid waste as defined in OAC rule 3745-27-01(S)(23) "...shall not exceed 3,000 tons excluding composting raw material and unprocessed and/or shredded tires." That number will not change with this permitting action.

Regarding the concern about moisture, the permittee has committed to "treat" the gas prior to combustion in the engine's by operating and maintaining the treatment system (compression of the gas, dehydration in the form of post-compression gas cooling via a heat exchanger shall achieve a minimum temperature drop of 20°F, and filtration systems that will provide final



filtration to less than 10 microns and facilitate removal of condensed liquids prior to introduction to the engine fuel injector).

- i. Comment: Citizen expressed concern about the Potential to Emit (PTE) from the project and does this mean Rumpke is going to voluntarily limit their emissions?
- j. Response: BCLGPS took voluntary limits in the permit to avoid certain state and federal requirements. Rumpke's permit is a separate permit and Rumpke has agreed to reduce their gas exhaust flow rate to the enclosed combustor(s). Rumpke has applied for an administrative modification in a separate permitting action to offset the landfill gas that will be used by the engine's operated by BCLGPS.
- k. Comment: The superintendent of Georgetown Exempted Village Schools expressed concern about the proximity of the school system to the landfill, the welfare of the students and the air quality surrounding the school grounds.
- l. Response: BCLGPS conducted air quality modeling for this project. These computer models help Ohio EPA predict the effect of emissions from a facility. In this case, the modeling showed no signs of adverse health effects based upon the worst-case scenarios and year of highest emissions from the model. That means calculations were performed using every possible worst-case scenario, such as the engines receiving maximum flow of 650 cubic feet per minute times the restricted hours of operation of 8,322 hours per year from each engine. Even using every worst-case scenario in the modeling, the projected emissions from this project are lower than levels that would be expected to cause adverse health effects.
- m. Comment: Numerous citizen comments were received expressing either support for or opposition to the project.
- n. Response: Ohio EPA appreciates these comments, but cannot consider the number of people for or against a site when evaluating permit applications.
- o. Comment: Citizen expressed concern about increased cancer rates in Brown County from 2010 through 2013 from the Ohio Department of Health (ODH) page of Statistics.
- p. Response: For questions regarding cancer rates cited in the ODH report, please contact ODH at www.odh.ohio.gov or (614) 466-3543.



FINAL

**Division of Air Pollution Control
Permit-to-Install
for
Brown County Landfill Gas Power Station**

Facility ID:	0708000095
Permit Number:	P0119715
Permit Type:	Initial Installation
Issued:	10/28/2016
Effective:	10/28/2016



Division of Air Pollution Control
Permit-to-Install
for
Brown County Landfill Gas Power Station

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Final Permit-to-Install
Brown County Landfill Gas Power Station
Permit Number: P0119715
Facility ID: 0708000095
Effective Date: 10/28/2016

Authorization

Facility ID: 0708000095
Facility Description: Landfill gas to electricity power station
Application Number(s): A0054500, A0056445, A0056973
Permit Number: P0119715
Permit Description: Installation of three Caterpillar G3520C Reciprocating Internal Combustion Engines to produce electricity from landfill gas.
Permit Type: Initial Installation
Permit Fee: \$1,200.00
Issue Date: 10/28/2016
Effective Date: 10/28/2016

This document constitutes issuance to:

Brown County Landfill Gas Power Station
9427 Beyers Road
Georgetown, OH 45121-9301

of a Permit-to-Install for the emissions unit(s) identified on the following page.

Ohio Environmental Protection Agency (EPA) District Office or local air agency responsible for processing and administering your permit:

Portsmouth City Health Dept., Air Pollution Unit
605 Washington Street
3rd Floor
Portsmouth, OH 45662
(740)353-5156

The above named entity is hereby granted a Permit-to-Install for the emissions unit(s) listed in this section 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 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


Craig W. Butler
Director



Authorization (continued)

Permit Number: P0119715

Permit Description: Installation of three Caterpillar G3520C Reciprocating Internal Combustion Engines to produce electricity from landfill gas.

Permits for the following Emissions Unit(s) or groups of Emissions Units are in this document as indicated below:

Emissions Unit ID:	P001
Company Equipment ID:	Engine #1
Superseded Permit Number:	
General Permit Category and Type:	Not Applicable

Group Name: CAT IC Engines: P002, P003

Emissions Unit ID:	P002
Company Equipment ID:	Engine #2
Superseded Permit Number:	
General Permit Category and Type:	Not Applicable
Emissions Unit ID:	P003
Company Equipment ID:	Engine #3
Superseded Permit Number:	
General Permit Category and Type:	Not Applicable



Final Permit-to-Install
Brown County Landfill Gas Power Station
Permit Number: P0119715
Facility ID: 0708000095
Effective Date: 10/28/2016

A. Standard Terms and Conditions

1. Federally Enforceable Standard Terms and Conditions

- a) All Standard Terms and Conditions are federally enforceable, with the exception of those listed below which are enforceable under State law only:
 - (1) Standard Term and Condition A.2.a), Severability Clause
 - (2) Standard Term and Condition A.3.c) through A. 3.e) General Requirements
 - (3) Standard Term and Condition A.6.c) and A. 6.d), Compliance Requirements
 - (4) Standard Term and Condition A.9., Reporting Requirements
 - (5) Standard Term and Condition A.10., Applicability
 - (6) Standard Term and Condition A.11.b) through A.11.e), Construction of New Source(s) and Authorization to Install
 - (7) Standard Term and Condition A.14., Public Disclosure
 - (8) Standard Term and Condition A.15., Additional Reporting Requirements When There Are No Deviations of Federally Enforceable Emission Limitations, Operational Restrictions, or Control Device Operating Parameter Limitations
 - (9) Standard Term and Condition A.16., Fees
 - (10) Standard Term and Condition A.17., Permit Transfers

2. Severability Clause

- a) 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.
- b) All terms and conditions designated in parts B and C of this permit are federally enforceable as a practical matter, if they 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 and the State and by citizens (to the extent allowed by section 304 of the Act) under the Act. Terms and conditions in parts B and C of this permit shall not be federally enforceable and shall be enforceable under State law only, only if specifically identified in this permit as such.

3. General Requirements

- a) 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 re-issuance, or modification.

- 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, 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 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.

4. 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:
 - (1) The date, place (as defined in the permit), and time of sampling or measurements.
 - (2) The date(s) analyses were performed.
 - (3) The company or entity that performed the analyses.
 - (4) The analytical techniques or methods used.
 - (5) The results of such analyses.
 - (6) 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:
 - (1) Reports of any required monitoring and/or recordkeeping of federally enforceable information shall be submitted to the Portsmouth City Health Dept., Air Pollution Unit.

- (2) 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 recordkeeping 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 Portsmouth City Health Dept., Air Pollution Unit. The written reports shall be submitted (i.e., postmarked) quarterly, by January 31, April 30, July 31, and October 31 of each year and shall cover the previous calendar quarters. See A.15. below if no deviations occurred during the quarter.
 - (3) Written reports, which identify any deviations from the federally enforceable monitoring, recordkeeping, and reporting requirements contained in this permit shall be submitted to the Portsmouth City Health Dept., Air Pollution Unit every six months, 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.
 - (4) This permit is for an emissions unit located at a Title V facility. 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.
- d) The permittee shall report actual emissions pursuant to OAC Chapter 3745-78 for the purpose of collecting Air Pollution Control Fees.

5. 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 Portsmouth City Health Dept., Air Pollution Unit 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).

6. Compliance Requirements

- a) All applications, notifications or reports required by terms and conditions in this permit to be submitted or "reported in writing" are to be submitted to Ohio EPA through the Ohio EPA's eBusiness Center: Air Services web service ("Air Services"). Ohio EPA will accept hard copy submittals on an as-needed basis if the permittee cannot submit the required documents through the Ohio EPA eBusiness Center. In the event of an alternative hard copy submission in lieu of the eBusiness Center, the post-marked date or the date the document is delivered in person will be recognized as the date submitted. Electronic submission of applications, notifications or reports required to be submitted to Ohio EPA fulfills the requirement to submit the required information to the Director, the appropriate Ohio EPA District Office or contracted

local air agency, and/or any other individual or organization specifically identified as an additional recipient identified in this permit unless otherwise specified. Consistent with OAC rule 3745-15-03, the electronic signature date shall constitute the date that the required application, notification or report is considered to be "submitted". Any document requiring signature may be represented by entry of the personal identification number (PIN) by responsible official as part of the electronic submission process or by the scanned attestation document signed by the Authorized Representative that is attached to the electronically submitted written report.

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:
- (1) 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.
 - (2) 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.
 - (3) Inspect at reasonable times any facilities, equipment (including monitoring and air pollution control equipment), practices, or operations regulated or required under this permit.
 - (4) 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 Portsmouth City Health Dept., Air Pollution Unit 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:
- (1) Dates for achieving the activities, milestones, or compliance required in any schedule of compliance, and dates when such activities, milestones, or compliance were achieved.
 - (2) 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.

7. Best Available Technology

As specified in OAC Rule 3745-31-05, new sources that must employ Best Available Technology (BAT) shall comply with the Applicable Emission Limitations/Control Measures identified as BAT for each subject emissions unit.

8. 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.

9. Reporting Requirements

The permittee shall submit required reports in the following manner:

- a) Reports of any required monitoring and/or recordkeeping of state-only enforceable information shall be submitted to the Portsmouth City Health Dept., Air Pollution Unit.
- 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 recordkeeping 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 Portsmouth City Health Dept., Air Pollution Unit. 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, 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.)

10. 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) not exempt from the requirement to obtain a Permit-to-Install.

11. Construction of New Sources(s) and Authorization to Install

- a) This permit does not constitute an assurance that the proposed source will operate in compliance with all Ohio laws and regulations. This permit does not constitute expressed or implied assurance that the proposed facility has been constructed in accordance with the application and terms and conditions of this permit. 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 this permit does not constitute an assurance that the proposed source will operate in compliance with all Ohio laws and regulations. Issuance of this permit 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.
- b) If applicable, authorization to install any new emissions unit included in this permit shall terminate within eighteen months of the effective date of the permit if the owner or operator has not undertaken a continuing program of installation or has not entered into a binding contractual obligation to undertake and complete within a reasonable time a continuing program of installation. 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 permittee shows good cause for any such extension.

- c) The permittee may notify Ohio EPA of any emissions unit that is permanently shut down (i.e., the emissions unit has been physically removed from service or has been altered in such a way that it can no longer operate without a subsequent "modification" or "installation" as defined in OAC Chapter 3745-31) by submitting a certification from the authorized official that identifies the date on which the emissions unit was permanently shut down. Authorization to operate the affected emissions unit shall cease upon the date certified by the authorized official that the emissions unit was permanently shut down. At a minimum, notification of permanent shut down shall be made or confirmed by marking the affected emissions unit(s) as "permanently shut down" in "Air Services" along with the date the emissions unit(s) was permanently removed and/or disabled. Submitting the facility profile update electronically will constitute notifying the Director of the permanent shutdown of the affected emissions unit(s).
- d) The provisions of this permit shall cease to be enforceable for each affected emissions unit after the date on which an emissions unit is permanently shut down (i.e., emissions unit has been physically removed from service or has been altered in such a way that it can no longer operate without a subsequent "modification" or "installation" as defined in OAC Chapter 3745-31). All records relating to any permanently shutdown emissions unit, generated while the emissions unit was in operation, must be maintained in accordance with law. All reports required by this permit must be submitted for any period an affected emissions unit operated prior to permanent shut down. At a minimum, the permit requirements must be evaluated as part of the reporting requirements identified in this permit covering the last period the emissions unit operated.

Unless otherwise exempted, no emissions unit certified by the responsible official as being permanently shut down may resume operation without first applying for and obtaining a permit pursuant to OAC Chapter 3745-31 and OAC Chapter 3745-77 if the restarted operation is subject to one or more applicable requirements.

- e) The permittee shall comply with any residual requirements related to this permit, such as the requirement to submit a deviation report, air fee emission report, or other any reporting required by this permit for the period the operating provisions of this permit were enforceable, or as required by regulation or law. All reports shall be submitted in a form and manner prescribed by the Director. All records relating to this permit must be maintained in accordance with law.

12. Permit-To-Operate Application

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 operation of the proposed new or modified source(s) as authorized by this permit would be prohibited by the terms and conditions of an existing Title V permit, a Title V permit modification of such new or modified source(s) pursuant to OAC rule 3745-77-04(D) and OAC rule 3745-77-08(C)(3)(d) must be obtained before operating the source in a manner that would violate the existing Title V permit requirements.

13. Construction Compliance Certification

The applicant shall identify the following dates in the "Air Services" facility profile for each new emissions unit identified in this permit.

- a) Completion of initial installation date shall be entered upon completion of construction and prior to start-up.
- b) Commence operation after installation or latest modification date shall be entered within 90 days after commencing operation of the applicable emissions unit.

14. 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.

15. Additional Reporting Requirements When There Are No Deviations of Federally Enforceable Emission Limitations, Operational Restrictions, or Control Device Operating Parameter Limitations

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 by January 31, April 30, July 31, and October 31 of each year and shall cover the previous calendar quarters.

16. 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 any permit-to-install. The permittee shall pay all applicable permit-to-operate fees within thirty days of the issuance of the invoice.

17. Permit Transfers

Any transferee of this permit shall assume the responsibilities of the prior permit holder. The new owner must update and submit the ownership information via the "Owner/Contact Change" functionality in "Air Services" once the transfer is legally completed. The change must be submitted through "Air Services" within thirty days of the ownership transfer date.

18. 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.

19. 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.



Final Permit-to-Install
Brown County Landfill Gas Power Station
Permit Number: P0119715
Facility ID: 0708000095
Effective Date: 10/28/2016

B. Facility-Wide Terms and Conditions

1. All the following facility-wide terms and conditions are federally enforceable with the exception of those listed below which are enforceable under state law only:
 - a) None.
2. The following date of manufacture data has been provided by the permittee:
 - a) Engine P001: Build Date: July 05, 2005
 - b) Engine P002: Build Date: November 28, 2007
 - c) Engine P003: Build Date: September 16, 2008
3. The following emissions units contained in this permit are subject to 40 CFR Part 63, Subpart ZZZZ: P001.
 - a) The spark ignited (SI) reciprocating internal combustion engine(s) (RICE), greater than 500 brake horse power and located at a major source for hazardous air pollutants (HAPs), is subject to the requirements of the National Emission Standards for Hazardous Air Pollutants (NESHAP) for Stationary Reciprocating Internal Combustion Engines, Part 63, Subpart ZZZZ. The new stationary SI RICE, P001, installed on or after 12/19/02, shall meet the requirements of Part 63, Subpart ZZZZ upon startup.
4. The following emissions units contained in this permit are subject to 40 CFR Part 60, Subpart JJJJ: P002 and P003.
 - a) The spark ignited (SI) reciprocating internal combustion engine(s) (RICE), greater than 500 brake horse power and located at a major source for hazardous air pollutants (HAPs), is subject to the requirements of the New Source Performance Standards (NSPS) for Reciprocating Internal Combustion Engines, 40 CFR Part 60, Subpart JJJJ. The new stationary SI RICE, P002 & P003, installed on or after 12/19/02, shall meet the requirements of 40 CFR Part 60, Subpart JJJJ upon startup.
5. The following emissions units contained in this permit are subject to 40 CFR Part 60, Subpart A, 40 CFR Part 60, Subpart WWW, and 40 CFR Part 63, Subpart AAAA: P001, P002, and P003 - CAT IC Engines.

The complete NSPS, NESHAP, and MACT requirements, including the NSPS, NESHAP, and MACT General Provisions, may be accessed via the internet from the Electronic Code of Federal Regulations (e-CFR) website <http://ecfr.gpoaccess.gov>.



Final Permit-to-Install
Brown County Landfill Gas Power Station
Permit Number: P0119715
Facility ID: 0708000095
Effective Date: 10/28/2016

C. Emissions Unit Terms and Conditions

1. P001, CAT IC Engine #1

Operations, Property and/or Equipment Description:

2221 bhp Caterpillar G3520C Reciprocating Internal Combustion Engine #1 (GZJ00174) to produce electricity from landfill gas

a) The following emissions unit terms and conditions are federally enforceable with the exception of those listed below which are enforceable under state law only.

(1) b)(1)h, b)(2)d, d)(11), d)(12), d)(13), d)(14) and e)(5)

b) Applicable Emissions Limitations and/or Control Requirements

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

	Applicable Rules/Requirements	Applicable Emissions Limitations/Control Measures
a.	ORC 3704.03(T)	<p>Nitrogen oxides (NO_x) emissions shall not exceed 3.21 pounds per hour.</p> <p>Carbon monoxide (CO) emissions shall not exceed 14.02 pounds per hour.</p> <p>Volatile organic compound (VOC) emissions shall not exceed 3.20 pounds per hour.</p> <p>Non-methane organic compounds (NMOC) emissions shall not exceed 3.97 pounds per hour.</p> <p>Sulfur dioxide (SO₂) emissions shall not exceed 3.16 pounds per hour.</p> <p>See b)(2)a.</p>
b.	OAC rule 3745-31-05(A)(3)(a)(ii) June 30, 2008	<p>The Best Available Technology (BAT) requirements under OAC rule 3745-31-05(A)(3) do not apply to the particulate emission less than 10 microns (PM₁₀) emissions from this air contaminant source since the potential to emit is less than 10 tons/year.</p> <p>See b)(2)b.</p>

	Applicable Rules/Requirements	Applicable Emissions Limitations/Control Measures
c.	OAC rule 3745-31-05(D) [Synthetic Minor to avoid major NSR and PSD applicability]	<p>NO_x emissions shall not exceed 13.36 tons per year as a rolling, 12-month summation.</p> <p>CO emissions shall not exceed 58.34 tons per year as a rolling, 12-month summation.</p> <p>VOC emissions shall not exceed 13.32 tons per year as a rolling, 12-month summation.</p> <p>NMOC emissions shall not exceed 16.52 tons per year as a rolling, 12-month summation.</p> <p>SO₂ emissions shall not exceed 13.15 tons per year as a rolling, 12-month summation.</p> <p>See c)(4)</p>
d.	OAC rule 3745-31-05(D) June 30,2008	<p>PM₁₀ emissions shall not exceed 1.21 tons per year as a rolling, 12-month summation.</p> <p>Formaldehyde emissions shall not exceed 8.74 tons per year as a rolling, 12-month summation.</p>
e.	OAC rule 3745-17-11(B)(5)	Particulate emissions (PE) shall not exceed 0.062 lb/mmBtu of actual heat input.
f.	OAC rule 3745-17-07(A)	Visible PE from any stack shall not exceed 20% opacity as a 6-minute average, except as provided by the rule.
g.	OAC rule 3745-18-06	SO ₂ emissions shall not exceed 0.5 lb/mmBtu of actual heat input.
h.	ORC 3701.03(F)(4)(d)	See b)(2)d.
i.	<p>40 CFR Part 63, Subpart ZZZZ (40 CFR 63.6580-60.6650)</p> <p>[In accordance with 40 CFR 63.6585, this emissions unit is a lean burn stationary spark ignition (SI) internal combustion engine (ICE) constructed after December 19, 2002 with a maximum engine power greater than or equal to 500 HP and</p>	<p>Emissions standards for landfill gas SI-ICE manufactured after December 29, 2002 as specified in Table 1 of 40 CFR Part 63, Subpart ZZZZ:</p> <p>See b)(2)e.</p>



	Applicable Rules/Requirements	Applicable Emissions Limitations/Control Measures
	combusts more than 10% of gross heat input as landfill gas on an annual basis]	
j.	40 CFR 60.752(b)(2)(iii)(C), Subpart WWW	Gas Treatment Requirements See b)(2)c.

(2) Additional Terms and Conditions

- a. The Best Available Technology (BAT) requirements for this emissions unit have been determined to be the use of “lean burn technology” and compliance with the terms and conditions of this permit.
- b. These requirements apply once U.S. EPA approves OAC paragraph 3745-31-05(A)(3)(a)(ii) (the less than 10 tons per year BAT exemption) as part of the Ohio SIP.
- c. Collected landfill gas shall be treated for sale or additional use per 40 CFR 60.752(b)(2)(iii)(C) by the permittee or shall be routed to a control system per 40 CFR 60.752(b)(2)(iii)(B). The control system shall be designed and operated to reduce the NMOC emissions by 98 weight-percent or the outlet NMOC emissions shall be reduced to less than 20 parts per million by volume, on a dry basis (ppmvd) as hexane at 3 percent oxygen.
 - i. Treatment of landfill gas per 60.752(b)(2)(iii)(C) shall include as a minimum:
 - a) Compression
 - b) Dehydration. Dehydration in the form of post-compression gas cooling via a heat exchanger shall achieve a minimum temperature drop of 20°F; and
 - c) Filtration to 10 microns or less.
 - ii. A site-specific treatment system monitoring plan is required for landfill gas treatment and has been prepared for the facility. The plan shall be implemented to demonstrate that the treatment system is operating properly for intended use of “treated” landfill gas as identified in i. above. The plan will be maintained on-site and provided for review at the request of Ohio EPA or their delegated authority (Portsmouth Local Air Agency-PLAA).
- d. In order to demonstrate compliance with “Ohio’s alternative health based standard”, a limit for formaldehyde, which shall not exceed 2.1 pounds per hour was established.

- e. Emission and Operating limits per 40 CFR 63 Subpart ZZZZ. Per 40 CFR 63.6600(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.
- f. The permittee shall comply with the applicable requirements of 40 CFR Part 63, Subpart ZZZZ, including the following sections:

63.6590(b)(2) 63.6595(c) 63.6605(b)	General Standards
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c) **Operational Restrictions**

- (1) This emissions unit shall burn only treated landfill gas. In accordance with 40 CFR 60.755(e), this restriction shall 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 1 hour for the treatment system or control device(s).
- (2) The permittee shall install, calibrate, maintain and operate, according to the manufacturer's specifications, a device at the inlet to the internal combustion engine which completely shuts off gas flow to the internal combustion engine(s) when the internal combustion engine(s) is not operating.
- (3) All emissions from any atmospheric vent from the gas treatment system or emission unit(s) shall be subject to the requirements of paragraph 40 CFR 60.752(b)(2)(iii)(A) or (B).
- (4) The maximum annual engine hours of operation shall not exceed 8322 hours.

To ensure enforceability during the first 12 calendar months of operation or the first 12 calendar months following the issuance of this permit, the permittee shall not exceed the operating hours levels specified in the following table:

<u>Month(s)</u>	<u>Cumulative Maximum Allowable Hours per Engine</u>
1	744 hours
1-2	1440 hours
1-3	2184 hours
1-4	2904 hours
1-5	3648 hours
1-6	4368 hours
1-7	5112 hours
1-8	5856 hours

1-9	6576 hours
1-10	7320 hours
1-11	8040 hours
1-12	8322 hours

After the first 12 calendar months of operation or the first 12 calendar months following the issuance of this permit, compliance with the annual limitation shall be based upon a rolling, 12- month summation of the engine (P001) operation in hours.

- (5) The allowable gas flow rate to the internal combustion engine’s combustion chambers shall not exceed 650 scfm.
- (6) When demonstrating compliance with 40 CFR 60.752(b)(2)(iii)(C), the minimum allowable average temperature drop of the landfill gas through the heat exchanger, based on 3-hour blocks of time, shall not be lower than 20°F. Gas temperature shall be recorded at a time interval of 15 minutes or less.
- (7) When demonstrating compliance with 40 CFR 60.752(b)(2)(iii)(C), the maximum allowable average pressure drop across the final filtration device, based on 3-hour blocks of time, shall not be higher than the manufacturer’s published maximum pressure drop corresponding to a filtration rating of 10 microns or less. Manufacturer’s performance data for filtration devices shall be maintained at the facility. Differential pressure across filtration devices shall be recorded at a time interval of 15 minutes or less, and shall be directly observable through the use of differential pressure gauges or remote sensing devices.

d) **Monitoring and/or Recordkeeping Requirements**

- (1) The permittee shall record each day when a fuel other than treated landfill gas was burned in this emissions unit.
- (2) The permittee shall install, calibrate, and maintain a device that monitors and records the gas flow to, or bypass of, the internal combustion engines. The gas flow rate measuring device shall record the flow to the control device(s) at least every 15 minutes.
- (3) The permittee shall collect and record all time the flow rate to the internal combustion engine exceeded 650 scfm. The gas flow rate to the engine shall be determined by dividing the total gas flow into the treatment system(s) by the number of engines operating.
- (4) The permittee shall install, calibrate and maintain a temperature 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 Celsius, whichever is greater, for the temperature drop across the treatment system heat exchanger. When demonstrating compliance with 40 CFR 60.752(b)(2)(iii)(C), the temperature drop shall be monitored continuously at a frequency of 15 minutes or less.
- (5) The permittee shall install, calibrate and maintain a differential pressure measurement device equipped with a continuous recorder and having a minimum accuracy of +/- 1 percent of the differential pressure being measured across the final landfill gas filtration

device. When demonstrating compliance with 40 CFR 60.752(b)(2)(iii)(C), the differential pressure shall be monitored continuously at a frequency of 15 minutes or less.

- (6) The permittee shall maintain monthly records of the following information:
 - a. the engine operating hours for each month; and
 - b. beginning after the first 12 calendar months of operation or the first 12 calendar months following the issuance of this permit, the rolling, 12 month summation of the engine operating hours.

Also, during the first 12 calendar months of operation or the first 12 calendar months following the issuance of this permit, the permittee shall record the cumulative operating hours of the engine for each calendar month.

- (7) The permittee shall maintain records of any emissions warranty/guarantee from the manufacturer of the engine and/or control devices, and/or the data obtained by the emissions testing specified in condition f)(1). These records shall document that the engine meets the emission limitations specified in condition b)(1) and include the settings at which the engine and controls are to be maintained to achieve compliant emission levels.
- (8) When demonstrating compliance with 40 CFR 60.752(b)(2)(iii)(C), the permittee shall collect and record each day all 3-hour blocks of time during which the average temperature drop of the landfill gas across the heat exchanger was less than 20°F.
- (9) When attempting to demonstrate compliance with 40 CFR 60.752(b)(2)(iii)(C), the permittee shall collect and record each day all 3-hour blocks of time during which the average differential pressure across the final landfill gas filtration device was greater than the manufacturer's rating corresponding to a filtration rating of 10 microns or less.
- (10) The permittee shall perform weekly checks, when the emissions unit is in operation and when the weather conditions allow, for any visible particulate emissions from the stack serving each emissions unit. The presence or absence of any visible emissions shall be noted in an operations log for each unit. If visible emissions are observed, the permittee shall also note the following in the operations log:
 - a. the color of the emissions;
 - b. the cause of the visible emissions;
 - c. the total duration of any visible emissions incident; and
 - d. any corrective actions taken to minimize or eliminate the visible emissions.
- (11) The permit-to-install (PTI) application for this/these emissions unit(s), P001, was evaluated based on the actual materials and the design parameters of the emissions unit's(s) exhaust system, as specified by the permittee. "Ohio's alternative health based standard", specific for formaldehyde, was applied to this/these emissions unit(s) for each toxic air contaminant listed in OAC rule 3745-114-01, using data from the permit

application; and modeling was performed for each toxic air contaminant(s) emitted using an air dispersion model such as SCREEN3, AERMOD, or ISCST3, or other Ohio EPA approved model. The predicted 1-hour maximum ground-level concentration and annual average result(s) from the approved air dispersion model, was compared to “Ohio’s alternative health based limit”, for formaldehyde:

- a. The following summarizes the results of dispersion modeling for the significant toxic contaminants or “worst case” toxic contaminant(s):

Toxic Contaminant: Formaldehyde

Ohio Alternative Health Based Limits (ug/m³): 49 one-hour maximum & 0.8 as an annual average.

Maximum Hourly Emission Rate (lbs/hr): 2.5 (permit limit 2.1)

Predicted 1-Hour Maximum Ground-Level Concentration (ug/m³): 21

Predicted annual average concentration (ug/m³): 0.72

The permittee, having demonstrated that emissions of formaldehyde, from emissions unit(s) P001, is estimated to be greater than 80 percent but less than 100 percent based upon “Ohio’s alternative health based limit”, shall not operate the emissions unit(s) at a rate that would exceed the short-term allowable emissions rate, process weight rate, and/or restricted hours of operations, as allowed in this permit; and any new raw material or processing agent shall not be applied without evaluating each component toxic air contaminant in accordance with the “Ohio’s alternative health based limit” for formaldehyde.

- (12) Prior to making any physical changes to or changes in the method of operation of the emissions unit(s), that could impact the parameters or values that were used in the predicted 1-hour maximum ground-level concentration, the permittee shall re-model the change(s) to demonstrate that the “Ohio’s alternative health based standard”, for formaldehyde has not been exceeded. Changes that can affect the parameters/values used in determining the 1-hour maximum ground-level concentration include, but are not limited to, the following:
 - a. changes in the composition of the materials used or the use of new materials, that would result in the emission of a new toxic air contaminant with a higher one-hour maximum and higher annual average than previously modeled;
 - b. changes in the composition of the materials, or use of new materials, that would result in an increase in emissions of any toxic air contaminant listed in OAC rule 3745-114-01, that was modeled from the initial (or last) application; and
 - c. physical changes to the emissions unit(s) or its/their exhaust parameters (e.g., increased/ decreased exhaust flow, changes in stack height, changes in stack diameter, etc.).

If the permittee determines that the “Ohio’s alternative health based standard”, will be satisfied for the above changes, the Ohio EPA will not consider the change(s) to be a “modification” under OAC rule 3745-31-01 solely due to a non-restrictive change to a parameter or process operation, where compliance with the “Ohio’s alternative health based standard”, has been documented. If the change(s) meet(s) the definition of a “modification”, the permittee shall apply for and obtain a final permit-to-install (PTI) prior to the change. The Director may consider any significant departure from the operations of the emissions unit, described in the permit application, as a modification that results in greater emissions than the emissions rate modeled to determine the ground level concentration; and he/she may require the permittee to submit a permit application for the increased emissions.

- (13) The permittee shall collect, record, and retain the following information for each toxic evaluation conducted to determine compliance with the “Ohio’s alternative health based standard”:
 - a. a description of the parameters/values used in each compliance demonstration and the parameters or values changed for any re-evaluation of the toxic(s) modeled (the composition of materials, new toxic contaminants emitted, change in stack/exhaust parameters, etc.);
 - b. the one-hour maximum and annual average for each significant toxic contaminant or worst-case contaminant, calculated in accordance with “Ohio’s alternative health based standard “;
 - c. a copy of the computer model run(s), that established the predicted 1-hour maximum ground-level concentration that demonstrated the emissions unit(s) to be in compliance with “Ohio’s alternative health based standard“, initially and for each change that requires re-evaluation of the toxic air contaminant emissions; and
 - d. the documentation of the initial evaluation of compliance with “Ohio’s alternative health based standard”, and documentation of any determination that was conducted to re-evaluate compliance due to a change made to the emissions unit(s) or the materials applied.
- (14) The permittee shall maintain a record of any change made to a parameter or value used in the dispersion model, used to demonstrate compliance with “Ohio’s alternative health based standard”, through the predicted 1-hour maximum ground-level concentration and annual average. The record shall include the date and reason(s) for the change and if the change would increase the ground-level concentration.
- (15) A treatment monitoring system plan shall be prepared for the facility and be maintained on-site and provided for review at the request of Ohio EPA or their delegated authority (Portsmouth Local Air Agency-PLAA).
- (16) The permittee shall comply with the applicable monitoring and record keeping requirements required under 40 CFR 63, Subpart ZZZZ, including the following sections:



63.6625 63.6655 63.660(a)-(c)	Record Keeping
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e) Reporting Requirements

- (1) The permittee shall submit deviation (excursion) reports that identify each day when a fuel other than treated landfill gas was burned in this emissions unit. Each report shall be submitted within 30 days after the deviation occurs.
- (2) Any breakdown or malfunction resulting in the emission of raw landfill gas to the atmosphere shall be reported to the Portsmouth Local Air Agency 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.
- (3) The permittee shall submit deviation (excursion) reports that identify each time the gas flow rate to the engine exceeded 650 scfm.
- (4) All exceedances of the rolling, 12-month limitation on the hours of operation for this emissions unit; and for the first 12 calendar months of operation or the first 12 calendar months following the issuance of this permit, all exceedances of the maximum allowable cumulative hours of operation;
- (5) Any changes made to a parameter or value used in the dispersion model, that was used to demonstrate compliance with "Ohio's alternative health based standard", through the predicted 1-hour maximum ground-level concentration; or if no changes to the emissions, emissions unit(s), or the exhaust stack have been made, a statement to this effect.
- (6) The permittee shall submit semiannual reports that:
 - a. identify all days during which any visible particulate emissions were observed from the stack serving this emissions unit;
 - b. describe any corrective actions taken to minimize or eliminate the visible particulate emissions;
 - c. identify the date(s) and duration the gas flow rate to the internal combustion engine exceeded requirements, as established during the most recent compliance stack test, as a 3-hour average;
 - d. when demonstrating compliance with 40 CFR 60.752(b)(2)(iii)(C), identify the date(s) and duration of each 3-hour block of time when the average temperature drop of the landfill gas across the heat exchanger did not meet the minimum temperature requirements.
 - e. when demonstrating compliance with 40 CFR 60.752(b)(2)(iii)(C), identify the date(s) and duration of each 3-hour block of time when the average temperature



drop across the final landfill gas filtration devices exceeded maximum differential pressure requirements.

These reports shall be submitted to the Portsmouth Local Air Agency by January 31 and July 31 of each year and shall cover the previous 6-month period.

- (7) The permittee shall comply with the applicable restriction of 40 CFR Part 63, Subpart ZZZZ, including the following sections:

63.6645(c) 63.6645(f) 63.6650(a) 63.6650(a)-Table 7.2.(a)-(c) 63.6650(b), (c), (f), and (g)	Reporting
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f) Testing Requirements

- (1) The permittee shall conduct, or have conducted, emission testing for this emissions unit in accordance with the following requirements:

- a. The permittee shall conduct an emission test within 180 days after startup and in accordance with the emission test requirements specified in f)(1)e.
- b. The emission testing shall be conducted to demonstrate compliance with the allowable mass emission rates for NO_x, CO, VOC, NMOC and formaldehyde.
- c. The following information shall be documented during all emission testing in addition to information required per test methods specified in f)(1)e:
 - i. landfill gas flow rate;
 - ii. engine brake horsepower; and
 - iii. landfill gas methane content.
- d. The permittee has elected to treat the collected gas for subsequent sale or use. In the event that the treatment system is inoperative or fails to meet treatment specifications set forth in Section C.1.b)(2)(c), gas shall be routed to a control device meeting the requirements of 40 CFR 60.752(b)(2)(iii)(B). Therefore, emission testing of the control device shall be conducted to demonstrate compliance with either the removal of 98 weight-percent of NMOC or the reduction of the outlet concentration of NMOC to less than 20 parts per million by volume, dry basis (ppmvd) as hexane at 3 percent oxygen.
- e. The following test methods shall be employed to demonstrate compliance with the allowable mass emission rates:

NO_x - Methods 1 through 4 and 7 or 7E of 40 CFR Part 60, Appendix A;
 CO - Methods 1 through 4 and 10 of 40 CFR Part 60, Appendix A;
 VOC - Methods 1 through 4 and 25 or 25A of 40 CFR Part 60, Appendix A;
 NMOC - Methods 1 through 4 and 25 or 25C of 40 CFR Part 60, Appendix A; and

Formaldehyde – Method 323 of 40 CFR Part 63, Appendix A.

Alternative U.S. EPA-approved test methods may be used with prior approval from the Ohio EPA.

- e. The test(s) shall be conducted while the emissions unit is operating at or near its maximum capacity (maximum rated brake horsepower), unless otherwise specified or approved by the Portsmouth Local Air Agency.
 - f. Not later than 30 days prior to the proposed test date(s), the permittee shall submit an "Intent to Test" notification to the Portsmouth Local Air Agency. 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 Portsmouth Local Air Agency's refusal to accept the results of the emission test(s).
 - g. Personnel from the Portsmouth Local Air Agency 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.
 - h. 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 Portsmouth Local Air Agency 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 Portsmouth Local Air Agency.
- (2) Compliance with the Emissions Limitations and/or Control Requirements specified in section b) of these terms and conditions shall be determined in accordance with the following methods:
- a. Emission Limitation:

Visible PE from any stack shall not exceed 20% opacity as a 6-minute average, except as provided by the rule.

Applicable Compliance Method:

If required, compliance shall be demonstrated based upon visible particulate emission observations performed in accordance with the methods and procedures specified in 40 CFR Part 60, Appendix A, Method 9.
 - b. Emission Limitations:

NO_x emissions shall not exceed 3.21 pounds per hour and 13.36 tons per year as a rolling, 12-month summation.

Applicable Compliance Methods:

Compliance with the NO_x hourly emission limitation shall be demonstrated in accordance with the performance test requirement specified in f)(1).

The tpy emission limitation was developed by multiplying the short-term allowable NO_x emission limitation (3.21 lbs/hr) by the allowable annual hours of operation (8,322 hours), and then dividing by 2,000 lbs per ton. Therefore, if compliance is shown with the short-term allowable emission limitation, compliance is demonstrated with the annual emission limitation.

c. Emission Limitations:

CO emissions shall not exceed 14.02 pounds per hour and 58.34 tons per year as a rolling, 12-month summation.

Applicable Compliance Methods:

Compliance with the CO hourly emission limitation shall be demonstrated in accordance with the performance test requirement specified in f)(1).

The tpy emission limitation was developed by multiplying the short-term allowable CO emission limitation (14.02 lbs/hr) by the allowable annual hours of operation (8,322 hours), and then dividing by 2,000 lbs per ton. Therefore, if compliance is shown with the short-term allowable emission limitation, compliance is demonstrated with the annual emission limitation.

d. Emission Limitations:

VOC emissions shall not exceed 3.20 pounds per hour and 13.32 tons per year as a rolling, 12-month summation.

Applicable Compliance Methods:

Compliance with the VOC hourly emission limitation shall be demonstrated in accordance with the performance test requirement specified in f)(1).

The tpy emission limitation was developed by multiplying the short-term allowable VOC emission limitation (3.20 lbs/hr) by the allowable annual hours of operation (8,322 hours), and then dividing by 2,000 lbs per ton. Therefore, if compliance is shown with the short-term allowable emission limitation, compliance is demonstrated with the annual emission limitation.

e. Emission Limitations:

Formaldehyde emissions shall not exceed 2.1 pounds per hour and 8.74 tons per year as a rolling, 12-month summation.

Applicable Compliance Methods:

Compliance with the hourly formaldehyde emission limitation shall be demonstrated in accordance with the performance test requirement specified in f)(1).

The tpy emission limitation was developed by multiplying the short-term allowable formaldehyde emission limitation (2.1 lbs/hr) by the allowable annual hours of operation (8,322 hours), and then dividing by 2,000 lbs per ton. Therefore, if compliance is shown with the short-term allowable emission limitation, compliance is demonstrated with the annual emission limitation.

f. Emission Limitation:

PM₁₀ emissions shall not exceed 1.21 tons per year as a rolling, 12-month summation.

Applicable Compliance Method:

The tpy emission limitation was developed by multiplying the assumed engineering judgement PE/PM₁₀ emission factor (0.29 lb/hr) by the allowable annual hours of operation (8,322 hours), and then dividing by 2,000 lbs per ton. Therefore, if compliance is shown with the short-term allowable emission limitation, compliance is demonstrated with the annual emission limitation.

g. Emission Limitations:

SO₂ emissions shall not exceed 3.16 pounds per hour and 13.15 tons per year as a rolling, 12-month summation.

Applicable Compliance Methods:

If required, compliance with the SO₂ emission limitation shall be demonstrated based upon an emission test performed in accordance with the methods and procedures specified in 40 CFR Part 60, Appendix A, Methods 1 through 4 and 6.

The tpy emission limitation was developed by multiplying the short-term allowable SO₂ emission limitation (3.16 lbs/hr) by the allowable annual hours of operation (8,322 hours), and then dividing by 2,000 lbs per ton. Therefore, if compliance is shown with the short-term allowable emission limitation, compliance is demonstrated with the annual emission limitation.

h. Emission Limitation:

The control system shall be designed and operated to reduce the NMOC by 98 weight-percent or the outlet NMOC emissions shall be reduced to less than 20 parts per million by volume, on a dry basis (ppmvd) as hexane at 3 percent oxygen.



Applicable Compliance Method:

Compliance with the control efficiency limitation shall be demonstrated in accordance with the performance test requirement specified in f)(1).

Compliance with this condition is not required if all landfill gas is treated in compliance with 40 CFR 60.752(b)(2)(iii)(C).

i. Emission Limitations:

NMOC emissions shall not exceed 3.97 pounds per hour and 16.52 tons per year as a rolling 12-month summation.

Applicable Compliance Methods:

Compliance with the hourly NMOC emission limitation shall be demonstrated in accordance with the performance test requirement specified in f)(1).

The tpy emission limitation was developed by multiplying the short-term allowable NMOC emission limitation (3.97 lbs/hr) by the allowable annual hours of operation (8,322 hours), and then dividing by 2,000 lbs per ton. Therefore, if compliance is shown with the short-term allowable emission limitation, compliance is demonstrated with the annual emission limitation.

j. Emission Limitation:

PE shall not exceed 0.062 lb/mmBtu of actual heat input.

Applicable Compliance Method:

If required, compliance with the PE lb/mmBtu emission limitation shall be demonstrated based upon an emission test performed in accordance with the methods and procedures specified in 40 CFR Part 60, Appendix A, Methods 1 through 5.

k. Emission Limitation:

SO₂ emissions shall not exceed 0.5 pound per million Btu of actual heat input.

Applicable Compliance Method:

If required, compliance with the SO₂ emission limitation shall be demonstrated based upon an emission test performed in accordance with the methods and procedures specified in 40 CFR Part 60, Appendix A, Methods 1 through 4 and 6.

g) Miscellaneous Requirements

- (1) None.

2. Emissions Unit Group -CAT IC Engines #2 & #3 : P002, P003

EU ID	Operations, Property and/or Equipment Description
P002	2221 bhp Caterpillar G3520C Reciprocating Internal Combustion Engine #2 (GZJ00414) to produce electricity from landfill gas
P003	2221 bhp Caterpillar G3520C Reciprocating Internal Combustion Engine #3 (GZJ00357) to produce electricity from landfill gas

a) The following emissions unit terms and conditions are federally enforceable with the exception of those listed below which are enforceable under state law only:

(1) b)(1)h, b)(2)e, d)(11), d)(12), d)(13), d)(14) and e)(5)

b) Applicable Emissions Limitations and/or Control Requirements

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

	Applicable Rules/Requirements	Applicable Emissions Limitations/Control Measures
a.	ORC 3704.03(T)	Nitrogen oxides (NO _x) emissions shall not exceed 3.21 pounds per hour. Carbon monoxide (CO) emissions shall not exceed 14.02 pounds per hour. Volatile organic compound (VOC) emissions shall not exceed 3.20 pounds per hour. Non-methane organic compounds (NMOC) emissions shall not exceed 3.97 pounds per hour. Sulfur dioxide (SO ₂) emissions shall not exceed 3.16 pounds per hour. See b)(2)a.
b.	OAC rule 3745-31-05(A)(3)(a)(ii) June 30, 2008	The Best Available Technology (BAT) requirements under OAC rule 3745-31-05(A)(3) do not apply to the particulate emission less than 10 microns (PM ₁₀) emissions from this air contaminant source since the potential to emit is less than 10 tons/year.

	Applicable Rules/Requirements	Applicable Emissions Limitations/Control Measures
		See b)(2)b.
c.	OAC rule 3745-31-05(D) [Synthetic Minor to avoid major NSR and PSD applicability]	<p>NO_x emissions shall not exceed 13.36 tons per year as a rolling, 12-month summation.</p> <p>CO emissions shall not exceed 58.34 tons per year as a rolling, 12-month summation.</p> <p>VOC emissions shall not exceed 13.32 tons per year as a rolling, 12-month summation.</p> <p>NMOC emissions shall not exceed 16.52 tons per year as a rolling, 12-month summation.</p> <p>SO₂ emissions shall not exceed 13.15 tons per year as a rolling, 12-month summation.</p> <p>See c)(4)</p>
d.	OAC rule 3745-31-05(D) June 30,2008	<p>PM₁₀ emissions shall not exceed 1.21 tons per year as a rolling, 12-month summation.</p> <p>Formaldehyde emissions shall not exceed 8.74 tons per year as a rolling, 12-month summation.</p>
e.	OAC rule 3745-17-11(B)(5)	Particulate emissions (PE) shall not exceed 0.062 lb/mmBtu of actual heat input.
f.	OAC rule 3745-17-07(A)	Visible PE from any stack shall not exceed 20% opacity as a 6-minute average, except as provided by the rule.
g.	OAC rule 3745-18-06	SO ₂ emissions shall not exceed 0.5 lb/mmBtu of actual heat input.
h.	ORC 3701.03(F)(4)(d)	See b)(2)e.
i.	40 CFR Part 60, Subpart JJJJ (40 CFR 60.4230-60.4248) [In accordance with 40 CFR 60.4230(a)(4)(i), this emissions unit is a landfill gas fired lean burn stationary spark ignition (SI) internal	<p>Emissions standards for landfill gas SI-ICE manufactured after July 1, 2007 as specified in Table 1 of 40 CFR Part 60, Subpart JJJJ:</p> <p>3.0 grams of NO_x per horsepower hour or 220 ppmvd at 15% O₂.</p>

	Applicable Rules/Requirements	Applicable Emissions Limitations/Control Measures
	combustion engine (ICE) constructed after June 12, 2006 and manufactured after July 1, 2007 with a maximum engine power greater than or equal to 500 HP]	5.0 grams of CO per horsepower hour or 610 ppmvd at 15% O ₂ . 1.0 gram of VOC per horsepower hour or 80 ppmvd at 15% O ₂ . The NO _x , CO and VOC emission limitations established in this subpart are less stringent than those established pursuant to ORC 3704.03(T).
j.	40 CFR Part 63, Subpart ZZZZ	See b)(2)c.
k.	40 CFR 60.752(b)(2)(iii)(C), Subpart WWW	Gas Treatment Requirements See b)(2)d.

(2) Additional Terms and Conditions

- a. The Best Available Technology (BAT) requirements for this emissions unit have been determined to be the use of “lean burn technology” and compliance with the terms and conditions of this permit.
- b. These requirements apply once U.S. EPA approves OAC paragraph 3745-31-05(A)(3)(a)(ii) (the less than 10 tons per year BAT exemption) as part of the Ohio SIP.
- c. In accordance with 40 CFR Part 63.6590(c), a new stationary RICE located at a major source must meet the requirements of this subpart by meeting the requirements of 40 CFR Part 60, Subpart JJJJ.
- d. Collected landfill gas shall be treated for sale or additional use per 40 CFR 60.752(b)(2)(iii)(C) by the permittee or shall be routed to a control system per 40 CFR 60.752(b)(2)(iii)(B). The control system shall be designed and operated to reduce the NMOC emissions by 98 weight-percent or the outlet NMOC emissions shall be reduced to less than 20 parts per million by volume, on a dry basis (ppmvd) as hexane at 3 percent oxygen.
 - i. Treatment of landfill gas per 60.752(b)(2)(iii)(C) shall include as a minimum:
 - a) Compression
 - b) Dehydration. Dehydration in the form of post-compression gas cooling via a heat exchanger shall achieve a minimum temperature drop of 20°F; and
 - c) Filtration to 10 microns or less.



ii. A site-specific treatment system monitoring plan is required for landfill gas treatment and has been prepared for the facility. The plan shall be implemented to demonstrate that the treatment system is operating properly for intended use of “treated” landfill gas as identified in i. above. The plan will be maintained on-site and provided for review at the request of Ohio EPA or their delegated authority (Portsmouth Local Air Agency-PLAA).

e. In order to demonstrate compliance with “Ohio’s alternative health based standard”, a limit for formaldehyde, which shall not exceed 2.1 pounds per hour was established.

f. The permittee shall comply with the applicable requirements of 40 CFR Part 60, Subpart JJJJ, including the following sections:

4243(c), (i), (i)(2)	General Standards
4243(b)(2)(ii)	

c) Operational Restrictions

- (1) This emissions unit shall burn only treated landfill gas. In accordance with 40 CFR 60.755(e), this restriction shall 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 1 hour for the treatment system or control device(s).
- (2) The permittee shall install, calibrate, maintain and operate, according to the manufacturer’s specifications, a device at the inlet to the internal combustion engine which completely shuts off gas flow to the internal combustion engine(s) when the internal combustion engine(s) is not operating.
- (3) All emissions from any atmospheric vent from the gas treatment system or emission unit(s) shall be subject to the requirements of paragraph 40 CFR 60.752(b)(2)(iii)(A) or (B).
- (4) The maximum annual engine hours of operation shall not exceed 8322 hours per engine.

To ensure enforceability during the first 12 calendar months of operation or the first 12 calendar months following the issuance of this permit, the permittee shall not exceed the operating hours levels specified in the following table:

	<u>Month(s)</u>	<u>Cumulative Maximum Allowable Hours per Engine</u>
1		744 hours
	1-2	1440 hours
	1-3	2184 hours
	1-4	2904 hours
	1-5	3648 hours
	1-6	4368 hours



1-7	5112 hours
1-8	5856 hours
1-9	6576 hours
1-10	7320 hours
1-11	8040 hours
1-12	8322 hours

After the first 12 calendar months of operation or the first 12 calendar months following the issuance of this permit, compliance with the annual limitation shall be based upon a rolling, 12- month summation of each engine(s) (P002, & P003) operation in hours.

- (5) The allowable gas flow rate to the internal combustion engine’s combustion chambers shall not exceed 650 scfm.
- (6) When demonstrating compliance with 40 CFR 60.752(b)(2)(iii)(C), the minimum allowable average temperature drop of the landfill gas through the heat exchanger, based on 3-hour blocks of time, shall not be lower than 20°F. Gas temperature shall be recorded at a time interval of 15 minutes or less.
- (7) When demonstrating compliance with 40 CFR 60.752(b)(2)(iii)(C), the maximum allowable average pressure drop across the final filtration device, based on 3-hour blocks of time, shall not be higher than the manufacturer’s published maximum pressure drop corresponding to a filtration rating of 10 microns or less. Manufacturer’s performance data for filtration devices shall be maintained at the facility. Differential pressure across filtration devices shall be recorded at a time interval of 15 minutes or less, and shall be directly observable through the use of differential pressure gauges or remote sensing devices.

d) **Monitoring and/or Recordkeeping Requirements**

- (1) The permittee shall record each day when a fuel other than treated landfill gas was burned in this emissions unit.
- (2) The permittee shall install, calibrate, and maintain a device that monitors and records the gas flow to, or bypass of, the internal combustion engines. The gas flow rate measuring device shall record the flow to the control device(s) at least every 15 minutes.
- (3) The permittee shall collect and record all time the flow rate to the internal combustion engine exceeded 650 scfm. The gas flow rate to the engine shall be determined by dividing the total gas flow into the treatment system(s) by the number of engines operating.
- (4) The permittee shall install, calibrate and maintain a temperature 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 Celsius, whichever is greater, for the temperature drop across the treatment system heat exchanger. When demonstrating compliance with 40 CFR 60.752(b)(2)(iii)(C), the temperature drop shall be monitored continuously at a frequency of 15 minutes or less.

- (5) When demonstrating compliance with 40 CFR 60.752(b)(2)(iii)(C), the permittee shall collect and record each day all 3-hour blocks of time during which the average temperature drop of the landfill gas across the heat exchanger was less than 20°F.
- (6) The permittee shall install, calibrate and maintain a differential pressure measurement device equipped with a continuous recorder and having a minimum accuracy of +/- 1 percent of the differential pressure being measured across the final landfill gas filtration device. When demonstrating compliance with 40 CFR 60.752(b)(2)(iii)(C), the differential pressure shall be monitored continuously at a frequency of 15 minutes or less.
- (7) When attempting to demonstrate compliance with 40 CFR 60.752(b)(2)(iii)(C), the permittee shall collect and record each day all 3-hour blocks of time during which the average differential pressure across the final landfill gas filtration device was greater than the manufacturer's rating corresponding to a filtration rating of 10 microns or less.
- (8) The permittee shall maintain monthly records of the following information:
 - a. the engine operating hours for each month; and
 - b. beginning after the first 12 calendar months of operation or the first 12 calendar months following the issuance of this permit, the rolling, 12 month summation of the engine operating hours.

Also, during the first 12 calendar months of operation or the first 12 calendar months following the issuance of this permit, the permittee shall record the cumulative operating hours of the engine for each calendar month.
- (9) The permittee shall maintain records of any emissions warranty/guarantee from the manufacturer of the engine and/or control devices, and/or the data obtained by the emissions testing specified in condition f)(1). These records shall document that the engine meets the emission limitations specified in condition b)(1) and include the settings at which the engine and controls are to be maintained to achieve compliant emission levels.
- (10) The permittee shall perform weekly checks, when the emissions unit is in operation and when the weather conditions allow, for any visible particulate emissions from the stack serving each emissions unit. The presence or absence of any visible emissions shall be noted in an operations log for each unit. If visible emissions are observed, the permittee shall also note the following in the operations log:
 - a. the color of the emissions;
 - b. the cause of the visible emissions;
 - c. the total duration of any visible emissions incident; and
 - d. any corrective actions taken to minimize or eliminate the visible emissions.
- (11) The permit-to-install (PTI) application for this/these emissions unit(s), P002 and P003, was evaluated based on the actual materials and the design parameters of the

emissions unit's(s') exhaust system, as specified by the permittee. "Ohio's alternative health based standard", specific for formaldehyde, was applied to this/these emissions unit(s) for each toxic air contaminant listed in OAC rule 3745-114-01, using data from the permit application; and modeling was performed for each toxic air contaminant(s) emitted using an air dispersion model such as SCREEN3, AERMOD, or ISCST3, or other Ohio EPA approved model. The predicted 1-hour maximum ground-level concentration and annual average result(s) from the approved air dispersion model, was compared to "Ohio's alternative health based limit", for formaldehyde:

- a. The following summarizes the results of dispersion modeling for the significant toxic contaminants or "worst case" toxic contaminant(s):

Toxic Contaminant: Formaldehyde

Ohio Alternative Health Based Standards (ug/m3): 49 one-hour maximum & 0.8 as an annual average.

Maximum Hourly Emission Rate (lbs/hr): 2.5 (permit limit 2.1)

Predicted 1-Hour Maximum Ground-Level Concentration (ug/m3): 21

Predicted annual average concentration (ug/m3): 0.72

The permittee, having demonstrated that emissions of formaldehyde, from emissions unit(s) P002 and P003, is estimated to be greater than 80 percent but less than 100 percent of the maximum acceptable limits above based upon "Ohio's alternative health based standard", shall not operate the emissions unit(s) at a rate that would exceed the short-term allowable emission rate, process weight rate, and/or restricted hours of operations, as allowed in this permit; and any new raw material or processing agent shall not be applied without evaluating each component toxic air contaminant in accordance with the "Ohio's alternative health based standard" for formaldehyde.

- (12) Prior to making any physical changes to or changes in the method of operation of the emissions unit(s), that could impact the parameters or values that were used in the predicted 1-hour maximum ground-level concentration, the permittee shall re-model the change(s) to demonstrate that the "Ohio's alternative health based standard", for formaldehyde has not been exceeded. Changes that can affect the parameters/values used in determining the 1-hour maximum ground-level concentration include, but are not limited to, the following:
- a. changes in the composition of the materials used or the use of new materials, that would result in the emission of a new toxic air contaminant with a higher one-hour maximum and higher annual average than previously modeled;
- b. changes in the composition of the materials, or use of new materials, that would result in an increase in emissions of any toxic air contaminant listed in OAC rule 3745-114-01, that was modeled from the initial (or last) application; and

- c. physical changes to the emissions unit(s) or its/their exhaust parameters (e.g., increased/ decreased exhaust flow, changes in stack height, changes in stack diameter, etc.).

If the permittee determines that the “Ohio’s alternative health based standard”, will be satisfied for the above changes, the Ohio EPA will not consider the change(s) to be a “modification” under OAC rule 3745-31-01 solely due to a non-restrictive change to a parameter or process operation, where compliance with the “Ohio’s alternative health based standard”, has been documented. If the change(s) meet(s) the definition of a “modification”, the permittee shall apply for and obtain a final permit-to-install (PTI) prior to the change. The Director may consider any significant departure from the operations of the emissions unit, described in the permit application, as a modification that results in greater emissions than the emissions rate modeled to determine the ground level concentration; and he/she may require the permittee to submit a permit application for the increased emissions.

- (13) The permittee shall collect, record, and retain the following information for each toxic evaluation conducted to determine compliance with the “Ohio’s alternative health based standard”:
 - a. a description of the parameters/values used in each compliance demonstration and the parameters or values changed for any re-evaluation of the toxic(s) modeled (the composition of materials, new toxic contaminants emitted, change in stack/exhaust parameters, etc.);
 - b. the one-hour maximum and annual average for each significant toxic contaminant or worst-case contaminant, calculated in accordance with “Ohio’s alternative health based standard”;
 - c. a copy of the computer model run(s), that established the predicted 1-hour maximum ground-level concentration that demonstrated the emissions unit(s) to be in compliance with “Ohio’s alternative health based standard”, initially and for each change that requires re-evaluation of the toxic air contaminant emissions; and
 - d. the documentation of the initial evaluation of compliance with “Ohio’s alternative health based standard”, and documentation of any determination that was conducted to re-evaluate compliance due to a change made to the emissions unit(s) or the materials applied.
- (14) The permittee shall maintain a record of any change made to a parameter or value used in the dispersion model, used to demonstrate compliance with “Ohio’s alternative health based standard”, through the predicted 1-hour maximum ground-level concentration and annual average. The record shall include the date and reason(s) for the change and if the change would increase the ground-level concentration.
- (15) A treatment monitoring system plan shall be prepared for the facility and be maintained on-site and provided for review at the request of Ohio EPA or their delegated authority (Portsmouth Local Air Agency-PLAA).

- (16) The permittee shall comply with the applicable monitoring and record keeping requirements required under 40 CFR, Subpart JJJJ, including the following sections

60.4245(a)(4) 60.4243(b)(2)ii	Record Keeping
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e) Reporting Requirements

- (1) The permittee shall submit deviation (excursion) reports that identify each day when a fuel other than treated landfill gas was burned in this emissions unit. Each report shall be submitted within 30 days after the deviation occurs.
- (2) Any breakdown or malfunction resulting in the emission of raw landfill gas to the atmosphere shall be reported to the Portsmouth Local Air Agency 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.
- (3) The permittee shall submit deviation (excursion) reports that identify each time the gas flow rate to the engine exceeded 650 scfm.
- (4) All exceedances of the rolling, 12-month limitation on the hours of operation for this emissions unit; and for the first 12 calendar months of operation or the first 12 calendar months following the issuance of this permit, all exceedances of the maximum allowable cumulative hours of operation;
- (5) Any changes made to a parameter or value used in the dispersion model, that was used to demonstrate compliance with "Ohio's alternative health based standard", through the predicted 1-hour maximum ground-level concentration; or if no changes to the emissions, emissions unit(s), or the exhaust stack have been made, a statement to this effect.
- (6) The permittee shall submit semiannual reports that:
 - a. identify all days during which any visible particulate emissions were observed from the stack serving this emissions unit;
 - b. describe any corrective actions taken to minimize or eliminate the visible particulate emissions;
 - c. identify the date(s) and duration the gas flow rate to the internal combustion engine exceeded requirements, as established during the most recent compliance stack test, as a 3-hour average;
 - d. when demonstrating compliance with 40 CFR 60.752(b)(2)(iii)(C), identify the date(s) and duration of each 3-hour block of time when the average temperature drop of the landfill gas across the heat exchanger did not meet the minimum temperature requirements.



- e. when demonstrating compliance with 40 CFR 60.752(b)(2)(iii)(C), identify the date(s) and duration of each 3-hour block of time when the average pressure drop across the final landfill gas filtration devices exceeded maximum differential pressure requirements.

These reports shall be submitted to the Portsmouth Local Air Agency by January 31 and July 31 of each year and shall cover the previous 6-month period.

- (7) The permittee shall comply with the applicable restriction of 40 CFR Part 60, Subpart JJJJ, including the following sections:

60.4245(c) 60.4245(d)	Reporting
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f) Testing Requirements

- (1) The permittee shall conduct, or have conducted, emission testing for this emissions unit in accordance with the following requirements:

- a. The permittee shall conduct an emission test within 180 days after startup and in accordance with the emission test requirements specified in f)(1)e.
- b. The emission testing shall be conducted to demonstrate compliance with the allowable mass emission rates for NO_x, CO, VOC, NMOC and formaldehyde.
- c. The following information shall be documented during all emission testing in addition to information required per test methods specified in f)(1)e;
 - i. landfill gas flow rate;
 - ii. engine brake horsepower; and
 - iii. landfill gas methane content.

d. The permittee has elected to treat the collected gas for subsequent sale or use. In the event that the treatment system is inoperative or fails to meet treatment specifications set forth in Section C.1.b)(2)(d), gas shall be routed to a control device meeting the requirements of 40 CFR 60.752(b)(2)(iii)(B). Therefore, emission testing of the control device shall be conducted to demonstrate compliance with either the removal of 98 weight-percent of NMOC or the reduction of the outlet concentration of NMOC to less than 20 parts per million by volume, dry basis (ppmv) as hexane at 3 percent oxygen.

- e. The following test methods shall be employed to demonstrate compliance with the allowable mass emission rates:

NO_x - Methods 1 through 4 and 7 or 7E of 40 CFR Part 60, Appendix A;
 CO - Methods 1 through 4 and 10 of 40 CFR Part 60, Appendix A;
 VOC - Methods 1 through 4 and 25 or 25A of 40 CFR Part 60, Appendix A;
 NMOC - Methods 1 through 4 and 25 or 25C of 40 CFR Part 60, Appendix A; and

Formaldehyde – Method 323 of 40 CFR Part 63, Appendix A.

Alternative U.S. EPA-approved test methods may be used with prior approval from the Ohio EPA.

- f. 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 Portsmouth Local Air Agency.
 - g. Not later than 30 days prior to the proposed test date(s), the permittee shall submit an "Intent to Test" notification to the Portsmouth Local Air Agency. 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 Portsmouth Local Air Agency's refusal to accept the results of the emission test(s).
 - h. Personnel from the Portsmouth Local Air Agency 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.
 - i. 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 Portsmouth Local Air Agency 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 Portsmouth Local Air Agency.
- (2) Compliance with the Emissions Limitations and/or Control Requirements specified in section b) of these terms and conditions shall be determined in accordance with the following methods:
- a. Emission Limitation:

Visible PE from any stack shall not exceed 20% opacity as a 6-minute average, except as provided by the rule.

Applicable Compliance Method:

If required, compliance shall be demonstrated based upon visible particulate emission observations performed in accordance with the methods and procedures specified in 40 CFR Part 60, Appendix A, Method 9.
 - b. Emission Limitations:

NO_x emissions shall not exceed 3.21 pounds per hour and 13.36 tons per year as a rolling, 12-month summation.

Applicable Compliance Methods:

Compliance with the NO_x hourly emission limitation shall be demonstrated in accordance with the performance test requirement specified in f)(1).

The tpy emission limitation was developed by multiplying the short-term allowable NO_x emission limitation (3.21 lbs/hr) by the allowable annual hours of operation (8,322 hours), and then dividing by 2,000 lbs per ton. Therefore, if compliance is shown with the short-term allowable emission limitation, compliance is demonstrated with the annual emission limitation.

c. Emission Limitations:

CO emissions shall not exceed 14.02 pounds per hour and 58.34 tons per year as a rolling, 12-month summation.

Applicable Compliance Methods:

Compliance with the CO hourly emission limitation shall be demonstrated in accordance with the performance test requirement specified in f)(1).

The tpy emission limitation was developed by multiplying the short-term allowable CO emission limitation (14.02 lbs/hr) by the allowable annual hours of operation (8,322 hours), and then dividing by 2,000 lbs per ton. Therefore, if compliance is shown with the short-term allowable emission limitation, compliance is demonstrated with the annual emission limitation.

d. Emission Limitations:

VOC emissions shall not exceed 3.20 pounds per hour and 13.32 tons per year as a rolling, 12-month summation.

Applicable Compliance Methods:

Compliance with the VOC hourly emission limitation shall be demonstrated in accordance with the performance test requirement specified in f)(1).

The tpy emission limitation was developed by multiplying the short-term allowable VOC emission limitation (3.20 lbs/hr) by the allowable annual hours of operation (8,322 hours), and then dividing by 2,000 lbs per ton. Therefore, if compliance is shown with the short-term allowable emission limitation, compliance is demonstrated with the annual emission limitation.

e. Emission Limitations:

Formaldehyde emissions shall not exceed 2.1 pounds per hour and 8.74 tons per year as a rolling, 12-month summation.

Applicable Compliance Methods:

Compliance with the formaldehyde hourly emission limitation shall be demonstrated in accordance with the performance test requirement specified in f)(1).

The tpy emission limitation was developed by multiplying the short-term allowable formaldehyde emission limitation (2.1 lbs/hr) by the allowable annual hours of operation (8,322 hours), and then dividing by 2,000 lbs per ton. Therefore, if compliance is shown with the short-term allowable emission limitation, compliance is demonstrated with the annual emission limitation.

f. Emission Limitation:

PM₁₀ emissions shall not exceed 1.21 tons per year as a rolling, 12-month summation.

Applicable Compliance Method:

The tpy emission limitation was developed by multiplying the assumed engineering judgement PE/PM₁₀ emission factor (0.29 lb/hr) by the allowable annual hours of operation (8,322 hours), and then dividing by 2,000 lbs per ton. Therefore, if compliance is shown with the short-term allowable emission limitation, compliance is demonstrated with the annual emission limitation.

g. Emission Limitations:

SO₂ emissions shall not exceed 3.16 pounds per hour and 13.15 tons per year as a rolling, 12-month summation.

Applicable Compliance Methods:

If required, compliance with the SO₂ emission limitation shall be demonstrated based upon an emission test performed in accordance with the methods and procedures specified in 40 CFR Part 60, Appendix A, Methods 1 through 4 and 6.

The tpy emission limitation was developed by multiplying the short-term allowable SO₂ emission limitation (3.16 lbs/hr) by the allowable annual hours of operation (8,322 hours), and then dividing by 2,000 lbs per ton. Therefore, if compliance is shown with the short-term allowable emission limitation, compliance is demonstrated with the annual emission limitation.

h. Emission Limitation:

The control system shall be designed and operated to reduce the NMOC by 98 weight-percent or the outlet NMOC emissions shall be reduced to less than 20 parts per million by volume, on a dry basis (ppmvd) as hexane at 3 percent oxygen.

Applicable Compliance Method:



Compliance with the control efficiency limitation shall be demonstrated in accordance with the performance test requirement specified in f)(1).

Compliance with this condition is not required if all landfill gas is treated in compliance with 40 CFR 60.752(b)(2)(iii)(C).

i. Emission Limitations:

NMOC emissions shall not exceed 3.97 pounds per hour and 16.52 tons per year as a rolling, 12-month summation.

Applicable Compliance Methods:

Compliance with the hourly NMOC emission limitation shall be demonstrated in accordance with the performance test requirement specified in f)(1).

The tpy emission limitation was developed by multiplying the short-term allowable NMOC emission limitation (3.97 lbs/hr) by the allowable annual hours of operation (8,322 hours), and then dividing by 2,000 lbs per ton. Therefore, if compliance is shown with the short-term allowable emission limitation, compliance is demonstrated with the annual emission limitation.

j. Emission Limitation:

PE shall not exceed 0.062 lb/mmBtu of actual heat input.

Applicable Compliance Method:

If required, compliance with the PE limitation shall be demonstrated based upon an emission test performed in accordance with the methods and procedures specified in 40 CFR Part 60, Appendix A, Methods 1 through 5.

k. Emission Limitation:

SO₂ emissions shall not exceed 0.5 lb/mmBtu of actual heat input.

Applicable Compliance Method:

If required, compliance with the SO₂ emission limitation shall be demonstrated based upon an emission test performed in accordance with the methods and procedures specified in 40 CFR Part 60, Appendix A, Methods 1 through 4 and 6.

(3) The permittee shall comply with the applicable restrictions of 40 CFR Part 60, Subpart JJJJ, including the following sections:

60.4243(b)(1)	Certified engines - Compliance demonstration
60.4243(b)(2)	Non-certified engines - Compliance demonstration
60.4244	Test methods and procedures



Final Permit-to-Install
Brown County Landfill Gas Power Station
Permit Number: P0119715
Facility ID: 0708000095
Effective Date: 10/28/2016

- g) Miscellaneous Requirements
 - (1) None.