



Environmental Protection Agency

John R. Kasich, Governor
Mary Taylor, Lt. Governor
Scott J. Nally, Director

10/4/2011

JAMES PENA
PINNACLE GAS PRODUCERS LLC
425 S MAIN ST
STE 201
ANN ARBOR, MI 48104

RE: FINALAIR POLLUTION PERMIT-TO-INSTALL AND OPERATE
Facility ID: 0857103154
Permit Number: P0106435
Permit Type: Renewal
County: Montgomery

Certified Mail

No	TOXIC REVIEW
No	PSD
No	SYNTHETIC MINOR TO AVOID MAJOR NSR
No	CEMS
Yes	MACT/GACT
No	NSPS
No	NESHAPS
No	NETTING
No	MAJOR NON-ATTAINMENT
No	MODELING SUBMITTED
No	SYNTHETIC MINOR TO AVOID TITLE V
No	FEDERALLY ENFORCABLE PTIO (FEPTIO)
No	SYNTHETIC MINOR TO AVOID MAJOR GHG

Dear Permit Holder:

Enclosed please find a final Air Pollution Permit-to-Install and Operate (PTIO) which will allow you to install, modify, and/or operate the described emissions unit(s) in the manner indicated in the permit. Because this permit contains conditions and restrictions, please read it very carefully. Please complete a survey at www.epa.ohio.gov/dapc/permitsurvey.aspx and give us feedback on your permitting experience. We value your opinion.

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
309 South Fourth Street, Room 222
Columbus, OH 43215

If you have any questions, please contact Regional Air Pollution Control Agency at (937)225-4435 or the Office of Compliance Assistance and Pollution Prevention at (614) 644-3469. This permit can be accessed electronically on the DAPCWeb page, www.epa.ohio.gov/dapc, by clicking the "Issued Air Pollution Control Permits" link.

Sincerely,

Michael W. Ahern, Manager
Permit Issuance and Data Management Section, DAPC

Cc: RAPCA



FINAL

**Division of Air Pollution Control
Permit-to-Install and Operate
for
PINNACLE GAS PRODUCERS LLC**

Facility ID:	0857103154
Permit Number:	P0106435
Permit Type:	Renewal
Issued:	10/4/2011
Effective:	10/4/2011
Expiration:	10/4/2021



Division of Air Pollution Control
Permit-to-Install and Operate
for
PINNACLE GAS PRODUCERS LLC

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Authorization

Facility ID: 0857103154
Application Number(s): A0039579
Permit Number: P0106435
Permit Description: PTIO renewal for a landfill gas processing facility that consists of a natural gas-fired compressor engine and landfill gas processing plant with thermal oxidizer and flare.
Permit Type: Renewal
Permit Fee: \$0.00
Issue Date: 10/4/2011
Effective Date: 10/4/2011
Expiration Date: 10/4/2021
Permit Evaluation Report (PER) Annual Date: Jan 1 - Dec 31, Due Feb 15

This document constitutes issuance to:

PINNACLE GAS PRODUCERS LLC
4220 PINNACLE RD
MORAINE, OH 45439

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

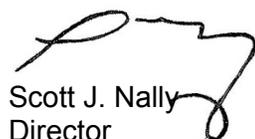
Ohio EPA District Office or local air agency responsible for processing and administering your permit:

Regional Air Pollution Control Agency
117 South Main Street
Dayton, OH 45422-1280
(937)225-4435

The above named entity is hereby granted this Permit-to-Install and Operate for the air contaminant source(s) (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 described emissions unit(s) will operate in compliance with applicable State and federal laws and regulations.

This permit is granted subject to the conditions attached hereto.

Ohio Environmental Protection Agency


Scott J. Nally
Director



Authorization (continued)

Permit Number: P0106435

Permit Description: PTIO renewal for a landfill gas processing facility that consists of a natural gas-fired compressor engine and landfill gas processing plant with thermal oxidizer and flare.

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

Emissions Unit ID:	B001
Company Equipment ID:	Compressor engine
Superseded Permit Number:	08-03855
General Permit Category and Type:	Not Applicable
Emissions Unit ID:	P001
Company Equipment ID:	LFG Processing Plant
Superseded Permit Number:	08-03855
General Permit Category and Type:	Not Applicable

A. Standard Terms and Conditions

1. What does this permit-to-install and operate ("PTIO") allow me to do?

This permit allows you to install and operate the emissions unit(s) identified in this PTIO. You must install and operate the unit(s) in accordance with the application you submitted and all the terms and conditions contained in this PTIO, including emission limits and those terms that ensure compliance with the emission limits (for example, operating, recordkeeping and monitoring requirements).

2. Who is responsible for complying with this permit?

The person identified on the "Authorization" page, above, is responsible for complying with this permit until the permit is revoked, terminated, or transferred. "Person" means a person, firm, corporation, association, or partnership. The words "you," "your," or "permittee" refer to the "person" identified on the "Authorization" page above.

The permit applies only to the emissions unit(s) identified in the permit. If you install or modify any other equipment that requires an air permit, you must apply for an additional PTIO(s) for these sources.

3. What records must I keep under this permit?

You must keep all records required by this permit, including monitoring data, test results, strip-chart recordings, calibration data, maintenance records, and any other record required by this permit for five years from the date the record was created. You can keep these records electronically, provided they can be made available to Ohio EPA during an inspection at the facility. Failure to make requested records available to Ohio EPA upon request is a violation of this permit requirement.

4. What are my permit fees and when do I pay them?

There are two fees associated with permitted air contaminant sources in Ohio:

- PTIO fee. This one-time fee is based on a fee schedule in accordance with Ohio Revised Code (ORC) section 3745.11, or based on a time and materials charge for permit application review and permit processing if required by the Director.

You will be sent an invoice for this fee after you receive this PTIO and payment is due within 30 days of the invoice date. You are required to pay the fee for this PTIO even if you do not install or modify your operations as authorized by this permit.

- Annual emissions fee. Ohio EPA will assess a separate fee based on the total annual emissions from your facility. You self-report your emissions in accordance with Ohio Administrative Code (OAC) Chapter 3745-78. This fee assessed is based on a fee schedule in ORC section 3745.11 and funds Ohio EPA's permit compliance oversight activities. Unless otherwise specified, facilities subject to one or more synthetic minor restrictions must use Ohio EPA's "Air Services" to submit annual emissions associated with this permit requirement. Ohio EPA will notify you when it is time to report your emissions and to pay your annual emission fees.

5. When does my PTIO expire, and when do I need to submit my renewal application?

This permit expires on the date identified at the beginning of this permit document (see "Authorization" page above) and you must submit a renewal application to renew the permit. Ohio EPA will send a renewal notice to you approximately six months prior to the expiration date of this permit. However, it is

very important that you submit a complete renewal permit application (postmarked prior to expiration of this permit) even if you do not receive the renewal notice.

If a complete renewal application is submitted before the expiration date, Ohio EPA considers this a timely application for purposes of ORC section 119.06, and you are authorized to continue operating the emissions unit(s) covered by this permit beyond the expiration date of this permit until final action is taken by Ohio EPA on the renewal application.

6. What happens to this permit if my project is delayed or I do not install or modify my source?

This PTIO expires 18 months after the issue date identified on the "Authorization" page above unless otherwise specified if you have not (1) started constructing the new or modified emission sources identified in this permit, or (2) entered into a binding contract to undertake such construction. This deadline can be extended by up to 12 months, provided you apply to Ohio EPA for this extension within a reasonable time before the 18-month period has ended and you can show good cause for any such extension.

7. What reports must I submit under this permit?

An annual permit evaluation report (PER) is required in addition to any malfunction reporting required by OAC rule 3745-15-06 or other specific rule-based reporting requirement identified in this permit. Your PER due date is identified in the Authorization section of this permit.

8. If I am required to obtain a Title V operating permit in the future, what happens to the operating provisions and PER obligations under this permit?

If you are required to obtain a Title V permit under OAC Chapter 3745-77 in the future, the permit-to-operate portion of this permit will be superseded by the issued Title V permit. From the effective date of the Title V permit forward, this PTIO will effectively become a PTI (permit-to-install) in accordance with OAC rule 3745-31-02(B). The following terms and conditions will no longer be applicable after issuance of the Title V permit: Section B, Term 1.b) and Section C, for each emissions unit, Term a)(2).

The PER requirements in this permit remain effective until the date the Title V permit is issued and is effective, and cease to apply after the effective date of the Title V permit. The final PER obligation will cover operations up to the effective date of the Title V permit and must be submitted on or before the submission deadline identified in this permit on the last day prior to the effective date of the Title V permit.

9. What are my obligations when I perform scheduled maintenance on air pollution control equipment?

You must perform scheduled maintenance of air pollution control equipment in accordance with OAC rule 3745-15-06(A). If scheduled maintenance requires shutting down or bypassing any air pollution control equipment, you must also shut down the emissions unit(s) served by the air pollution control equipment during maintenance, unless the conditions of OAC rule 3745-15-06(A)(3) are met. Any emissions that exceed permitted amount(s) under this permit (unless specifically exempted by rule) must be reported as deviations in the annual permit evaluation report (PER), including nonexempt excess emissions that occur during approved scheduled maintenance.

10. Do I have to report malfunctions of emissions units or air pollution control equipment? If so, how must I report?

If you have a reportable malfunction of any emissions unit(s) or any associated air pollution control system, you must report this to the Regional Air Pollution Control Agency in accordance with OAC rule 3745-15-06(B). Malfunctions that must be reported are those that result in emissions that exceed permitted emission levels. It is your responsibility to evaluate control equipment breakdowns and operational upsets to determine if a reportable malfunction has occurred.

If you have a malfunction, but determine that it is not a reportable malfunction under OAC rule 3745-15-06(B), it is recommended that you maintain records associated with control equipment breakdown or process upsets. Although it is not a requirement of this permit, Ohio EPA recommends that you maintain records for non-reportable malfunctions.

11. Can Ohio EPA or my local air agency inspect the facility where the emission unit(s) is/are located?

Yes. Under Ohio law, the Director or his authorized representative may inspect the facility, conduct tests, examine records or reports to determine compliance with air pollution laws and regulations and the terms and conditions of this permit. You must provide, within a reasonable time, any information Ohio EPA requests either verbally or in writing.

12. What happens if one or more emissions units operated under this permit is/are shut down permanently?

Ohio EPA can terminate the permit terms associated with any permanently shut down emissions unit. "Shut down" means 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.

You should notify Ohio EPA of any emissions unit that is permanently shut down by submitting¹ a certification that identifies the date on which the emissions unit was permanently shut down. The certification must be submitted by an authorized official from the facility. You cannot continue to operate an emissions unit once the certification has been submitted to Ohio EPA by the authorized official.

You must comply with all recordkeeping and reporting for any permanently shut down emissions unit in accordance with the provisions of the permit, regulations or laws that were enforceable during the period of operation, such as the requirement to submit a PER, air fee emission report, or malfunction report. You must also keep all records relating to any permanently shutdown emissions unit, generated while the emissions unit was in operation, for at least five years from the date the record was generated.

Again, you cannot resume operation of any emissions unit certified by the authorized official as being permanently shut down without first applying for and obtaining a permit pursuant to OAC Chapter 3745-31.

¹Permittees that use Ohio EPA's "Air Services" can mark the affected emissions unit(s) as "permanently shutdown" in the facility profile along with the date the emissions unit(s) was permanently removed and/or disabled. Submitting the facility profile update will constitute notifying of the permanent shutdown of the affected emissions unit(s).

13. Can I transfer this permit to a new owner or operator?

You can transfer this permit to a new owner or operator. If you transfer the permit, you must follow the procedures in OAC Chapter 3745-31, including notifying Ohio EPA or the local air agency of the change in ownership or operator. Any transferee of this permit must assume the responsibilities of the transferor permit holder.

14. Does compliance with this permit constitute compliance with OAC rule 3745-15-07, "air pollution nuisance"?

This permit and OAC rule 3745-15-07 prohibit operation of the air contaminant source(s) regulated under this permit in a manner that causes a nuisance. Ohio EPA can require additional controls or modification of the requirements of this permit through enforcement orders or judicial enforcement action if, upon investigation, Ohio EPA determines existing operations are causing a nuisance.

15. What happens if a portion of this permit is determined to be invalid?

If a portion of this permit is determined to be invalid, the remainder of the terms and conditions remain valid and enforceable. The exception is where the enforceability of terms and conditions are dependent on the term or condition that was declared invalid.

B. Facility-Wide Terms and Conditions

1. This permit document constitutes a permit-to-install issued in accordance with ORC 3704.03(F) and a permit-to-operate issued in accordance with ORC 3704.03(G).
 - a) For the purpose of a permit-to-install document, the facility-wide terms and conditions identified below are federally enforceable with the exception of those listed below which are enforceable under state law only.
 - (1) None.
 - b) For the purpose of a permit-to-operate document, the facility-wide terms and conditions identified below are enforceable under state law only with the exception of those listed below which are federally enforceable.
 - (1) None.
2. The Ohio EPA has determined that this facility may be subject to the requirements of an area source MACT/GACT rule (National Emission Standards For Hazardous Air Pollutants (NESHAP) for Reciprocating Internal Combustion Engines, 40 CFR Part 63, Subpart ZZZZ) that the Ohio EPA does not have delegated authority to implement. Although Ohio EPA has determined that this area source MACT (also known as the GACT) applies, at this time Ohio EPA does not have the authority to enforce this standard. Instead, U.S. EPA has the authority to enforce this standard. Please be advised, that all requirements associated with this rule are in effect and shall be enforced by U.S. EPA.

C. Emissions Unit Terms and Conditions



1. B001, Compressor engine

Operations, Property and/or Equipment Description:

12 MMBtu/hour (1,626 bhp) pipeline quality gas/natural gas-fired compressor engine

a) This permit document constitutes a permit-to-install issued in accordance with ORC 3704.03(F) and a permit-to-operate issued in accordance with ORC 3704.03(G).

(1) For the purpose of a permit-to-install document, the emissions unit terms and conditions identified below are federally enforceable with the exception of those listed below which are enforceable under state law only.

a. None.

(2) For the purpose of a permit-to-operate document, the emissions unit terms and conditions identified below are enforceable under state law only with the exception of those listed below which are federally enforceable.

a. None.

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.	OAC rule 3745-31-05(A)(3) PTI 08-3855 issued November, 28 2003	<p>The non-methane organic compound (NMOC) emissions from this emissions unit shall not exceed 5.38 pounds per hour and 23.6 tons per year.</p> <p>The sulfur dioxide emissions (SO₂) from this emissions unit shall not exceed 0.001 lb SO₂/MMBtu actual heat input.</p> <p>The opacity of any visible particulate emissions from this emissions unit shall not exceed 10% as a six minute average.</p> <p>The emissions of nitrogen oxides (NO_x) from this emissions unit shall not exceed 5.37 pounds per hour and 23.52 tons per year.</p>



	Applicable Rules/Requirements	Applicable Emissions Limitations/Control Measures
		<p>The emissions of carbon monoxide (CO) shall not exceed 9.85 pounds per hour and 43.14 tons per year.</p> <p>Compliance with this rule shall also include compliance with OAC rule 3745-17-11(B).</p>
b.	OAC rule 3745-17-07(A)(1)	The emissions limits established by this rule are less stringent than the limits established pursuant to OAC rule 3745-31-05(A)(3).
c.	OAC rule 3745-17-11(B)(5)(b)	The particulate emissions from this emissions unit shall not exceed 0.062 pound/MMBtu of actual heat input.
d.	OAC rule 3745-18-06(G)	The emission limits established by this rule are less stringent than the limits established pursuant to OAC rule 3745-31-05(A)(3).

(2) Additional Terms and Conditions

a. The compressor shall be exempt from the SO₂ mass emission limitation during any day in which the only fuel burned is natural gas (including pipeline quality gas concentrated from landfill gas) having a heat content of greater than 950 Btu per standard cubic foot and a sulfur content of less than 0.6 pound per million standard cubic feet.

c) Operational Restrictions

- (1) The permittee shall burn only natural gas, or pipeline quality gas concentrated from landfill gas in this emissions unit.
- (2) In the event that the landfill gas collection system is in operable, the compressor shall be shut down and all valves in the control system contributing to venting of the gas to the atmosphere shall be closed within one hour.
- (3) The permittee shall maintain and operate an air/fuel mixture controller on the gas fired landfill gas compressor engine.

d) Monitoring and/or Recordkeeping Requirements

- (1) The permittee shall maintain monthly records of the type and quantity of fuel burned in the compressor engine.
- (2) The permittee shall collect a representative sample of the gaseous fuel burned in this emissions unit and have it analyzed, for heat content and sulfur content. This sampling and analysis shall be completed once per calendar quarter in accordance with ASTM

methods D1072, D3031, or D3246. Alternative U.S. EPA approved test methods may be used with prior approval from the appropriate Ohio EPA district office or local air agency.

The sulfur content measurements may be reduced to semi-annually if the results of two consecutive measurements show a sulfur concentration of less than 0.45 pound per million standard cubic feet.

If any semi-annual sulfur content measurement event indicates a sulfur concentration that is in excess of 0.45 pound per million standard cubic feet the sulfur content measurements shall be completed quarterly until two consecutive quarterly monitoring events result in sulfur concentration that are less than 0.45 pound per million standard cubic feet.

- (3) The permittee shall develop and maintain a quality assurance manual for the gas fired, stationary, internal combustion engine powering the landfill gas compressor and the components of the landfill gas compressor within three months after initial operation of the engine.
- (4) The permittee shall maintain a log of records detailing the operation of the gas fired, stationary, internal combustion engine powering the landfill gas compressor. The records shall include:
 - a. any quality assurance or maintenance performed;
 - b. all monitoring of the engine and the engines components;
 - c. a record of each date and time when the engine operated outside of the quality assurance limits along with the type of fuel the engine was burning and;
 - d. the steps taken to correct the problem.

This log shall be available for review during regular business hours at the facility by the Director or his representatives.

e) Reporting Requirements

- (1) The permittee shall submit deviation (excursion) reports that identify each day when a fuel other than natural gas or pipeline quality gas concentrated from landfill gas was burned in the gas fired, stationary, internal combustion engine powering the landfill gas compressor. These reports shall be submitted within 30 days after the deviation occurred.
- (2) The permittee shall submit quarterly reports detailing the results of the sampling and analysis of the gaseous fuel burned in the stationary, internal combustion engine powering the landfill gas compressor for the first twelve months of operation. These report shall contain, at a minimum, the analyzed heat content, in Btu per cubic foot and sulfur content in parts per million on a volumetric basis.

f) Testing Requirements

(1) Compliance with the Emissions Limitations specified in b) shall be determined in accordance with the following methods:

a. Emissions Limitation-

The SO₂ emissions from this emissions unit shall not exceed 0.001 lb SO₂/MMBtu actual heat input

Applicable Compliance Method-

If required, compliance shall be determined based on the results of stack testing conducted in accordance with OAC rule 3745-18-04(F).

b. Emissions Limitation-

The NO_x emissions from this emissions unit shall not exceed 5.37 lbsNO_x/hour.

Applicable Compliance Method-

Compliance shall be determined based on the results of stack testing conducted in accordance with the test methods and procedures specified in 40 CFR Part 60, Appendix A Methods 7, 7A, 7B or 7E.

c. Emission Limitation-

The NO_x emissions from this emissions unit shall not exceed 23.52 tons per year.

Applicable Compliance Method-

The 23.52 tons per year limitation was developed by multiplying the 5.37 pounds per hour limitation by the maximum operating schedule of 8,760 hours per year, divided by 2,000 pounds per ton. Therefore, provided compliance is shown with the hourly emission limitation, compliance will also be shown with the annual limitation.

d. Emission Limitation-

The CO emissions from this emissions unit shall not exceed 9.85 pounds per hour.

Applicable Compliance Method-

Compliance shall be based upon stack testing in accordance with the test methods and procedures specified in 40 CFR Part 60, Appendix A, Methods 10 or 10B.

e. Emission Limitation-

The CO emissions from this emissions unit shall not exceed 43.14 tons per year.

Applicable Compliance Method-

The 43.14 tons per year limitation was developed by multiplying the 9.85 pounds per hour limitation by the maximum operating schedule of 8,760 hours per year, divided by 2,000 pounds per ton. Therefore, provided compliance is shown with the hourly emission limitation, compliance will also be shown with the annual limitation.

f. Emission Limitation-

The emissions of non-methane organic compounds shall not exceed 5.38 pounds per hour.

Applicable Compliance Method

Compliance shall be based upon stack testing in accordance with the test methods and procedures specified in 40 CFR Part 60, Appendix A, Methods 18, 25, or 25A.

g. Emission Limitation

The emissions of non-methane organic compounds from this emissions unit shall exceed 23.6 tons per year.

Applicable Compliance Method

The 23.6 tons per year limitation was developed by multiplying the 5.38 pounds per hour limitation by the maximum operating schedule of 8,760 hours per year, divided by 2,000 pounds per ton. Therefore, provided compliance is shown with the hourly emission limitation, compliance will also be shown with the annual limitation.

h. Emission Limitation-

The opacity of any visible particulate emissions from this emissions unit shall not exceed 10% as a six minute average.

Applicable Compliance Method-

If requested, compliance shall be determined based on the results of visible emissions readings taken in accordance with OAC rule 3745-17-03(B)(1) and U.S. EPA Reference Method 9 of 40 CFR Part 60, Appendix A.

- (2) The permittee shall conduct, or have conducted, a performance test for emissions unit B001 in accordance with the following requirements:

- a. the performance test shall be performed on a recurring three year schedule; (The last stack test demonstrating compliance for this emissions unit was completed March 10, 2011)
- b. the performance test shall be conducted to demonstrate compliance with the allowable emission rates for NO_x, CO and NMOC;
- c. the following test methods of 40 CFR Part 60, Appendix A shall be employed to demonstrate compliance with the allowable mass emission rates: for NO_x, 7, 7A, 7B, or 7E, for CO, 10, or 10B and for NMOC, Methods 18,25 and/or 25A;
- d. the test(s) shall be conducted while the emissions unit is operating at or near its maximum capacity, unless otherwise specified or approved by the Regional Air Pollution Control Agency.

Not later than 60 days prior to the proposed test date(s), the permittee shall submit an "Intent to Test" notification to the appropriate Ohio EPA District Office or 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 Ohio EPA District Office's or local air agency's refusal to accept the results of the emission test(s).

Personnel from the appropriate Ohio EPA District Office or 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.

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 appropriate Ohio EPA District Office or 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 appropriate Ohio EPA District Office or local air agency.

- g) Miscellaneous Requirements
 - (1) None.



2. P001, LFG Processing Plant

Operations, Property and/or Equipment Description:

Landfill gas processing plant to produce pipeline quality natural gas (methane), with thermal oxidizer control; and flare for periods of start up

a) This permit document constitutes a permit-to-install issued in accordance with ORC 3704.03(F) and a permit-to-operate issued in accordance with ORC 3704.03(G).

(1) For the purpose of a permit-to-install document, the emissions unit terms and conditions identified below are federally enforceable with the exception of those listed below which are enforceable under state law only.

a. None.

(2) For the purpose of a permit-to-operate document, the emissions unit terms and conditions identified below are enforceable under state law only with the exception of those listed below which are federally enforceable.

a. None.

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.	OAC rule 3745-31-05(A)(3) PTI 08-3855 issued November, 28 2003	A control system shall be designed and operated to reduce non-methane organic compound emissions (NMOC) by 98 percent, by weight (See II.A.2.a.) The NMOC emissions from this emissions unit shall not exceed 1.2 pounds per hour and 5.26 tons per year. The hazardous air pollutant (HAP) emissions as defined in Section 112(b) of the Clean Air Act Amendments of 1990 from this emissions unit shall not exceed 1.2 pounds per hour and 5.26 tons per year. See b)(2)a through b)(2)c. and c)(1) through c)(3).



	Applicable Rules/Requirements	Applicable Emissions Limitations/Control Measures
b.	40 CFR Part 60.18(b) and (c) through (f)	No visible emissions from the flare except for periods not to exceed a total of 5 minutes during any two consecutive hours. See b)(2)d., b)(2)e. and c)(4)

(2) Additional Terms and Conditions

- a. The permittee shall process all collected gas to the landfill gas processing plant (P001) for subsequent sale or use. All emissions from the gas treatment system shall be vented to a thermal oxidizer that is designed and operated to reduce NMOC emissions by 98 percent.
- b. The landfill gas processing plant shall produce pipeline quality natural gas (methane) from the landfill gas collected by the Pinnacle Road Landfill and Recycling Facility (Ohio EPA Facility ID 0857101458) and the Stony Hollow Recycling Facility (Ohio EPA Facility ID 0857043008) landfill gas extraction system.
- c. During all periods of start-up of the landfill gas processing plant, a flare shall be employed initially with the collected landfill gas emissions ultimately diverted to the thermal oxidizer.
- d. During all periods of start-up when the landfill gas is routed to the flare control system, the flare shall be designed for and operated with no visible emissions, except for periods not to exceed a total of 5 minutes during any two consecutive hours.
- e. The exit velocity of the flare shall be less than V_{max} and less than 122 meters/second (400 feet/second), where V_{max} is determined by the following equation:

$$\text{Log}_{10}(V_{max}) = (HT + 28.8)/31.7$$

V_{max} = maximum permitted velocity, in meters/second
 HT = Net heating value of the fuel gas, MJ/scm
 28.8 = constant
 31.7 = constant.

c) Operational Restrictions

- (1) The permittee shall not process more than 4.5 million standard cubic feet per day of landfill gas on a dry basis. Dry basis means the collected landfill gas with the free water removed.

- (2) In order to maintain compliance with the applicable emission limitation(s) contained in this permit, the acceptable average combustion temperature within the thermal oxidizer, for any 3-hour block of time when the emissions unit(s) controlled by the thermal oxidizer is/are in operation, shall not be more than 50 degrees Fahrenheit below the average temperature measured during the most recent performance test that demonstrated the emissions unit was in compliance.
 - (3) The flare control system shall be operated at all times when landfill gas is directed to the flare.
 - (4) The net heating value of the gas being combusted shall be 200 Btu/scf or greater except during periods, not to exceed 30 minutes, when only the carbon dioxide (CO₂) vent stream is flowing through the flare.
- d) Monitoring and/or Recordkeeping Requirements
- (1) The permittee shall install, calibrate, maintain, and operate gas flow measuring devices that record the gas flow rate to the processing and the gas flow out of the plant.
 - (2) The permittee shall maintain daily records of the volume of landfill gas processed, in dry standard cubic feet.
 - (3) The permittee shall properly install, operate, and maintain a continuous temperature monitor and recorder that measures and records the combustion temperature within the thermal oxidizer when the emissions unit is in operation, in °F, including periods of startup and shutdown. The accuracy for each thermocouple, monitor, and recorder shall be guaranteed by the manufacturer to be within ± 1 percent of the temperature being measured or ± 5 °F, whichever is greater. The temperature monitor and recorder shall be installed, calibrated, operated, and maintained in accordance with the manufacturer's recommendations, instructions, and the operating manuals, with any modifications deemed necessary by the permittee. The permittee shall collect and record the following information each day the emissions unit(s) is/are in operation:
 - a. all 3-hour blocks of time, when the emissions unit controlled by the thermal oxidizer was in operation, during which the average combustion temperature within the thermal oxidizer was more than 50 °F below the average temperature measured during the most recent performance test that demonstrated the emissions unit(s) was/were in compliance.
 - b. A log of the downtime for the thermal oxidizer and the thermal oxidizer monitoring and recording equipment, when the emissions unit was in operation.
 - (4) Whenever the monitored average combustion temperature within the thermal oxidizer deviates from the range or limit established in accordance with this permit, the permittee shall promptly investigate the cause of the deviation. The permittee shall maintain records of the following information for each investigation:
 - a. the date and time the deviation began;
 - b. the magnitude of the deviation at that time;

- c. the date the investigation was conducted;
- d. the name(s) of the personnel who conducted the investigation; and
- e. the findings and recommendations.

In response to each required investigation to determine the cause of a deviation, the permittee shall take prompt corrective action to bring the operation of the control equipment within the acceptable range/limit specified in this permit, unless the permittee determines that corrective action is not necessary and documents the reasons for that determination and the date and time the deviation ended. The permittee shall maintain records of the following information for each corrective action taken:

- f. a description of the corrective action;
- g. the date corrective action was completed;
- h. the date and time the deviation ended;
- i. the total period of time (in minutes) during which there was a deviation;
- j. the temperature readings immediately after the corrective action was implemented; and
- k. the name(s) of the personnel who performed the work.

Investigation and records required by this paragraph do not eliminate the need to comply with the requirements of OAC rule 3745-15-06 if it is determined that a malfunction has occurred.

The temperature range/limit is effective for the duration of this permit, unless revisions are requested by the permittee and approved in writing by the appropriate Ohio EPA District Office or local air agency. The permittee may request revisions to the permitted temperature range/limit based upon information obtained during future performance tests that demonstrate compliance with the allowable emission rate(s) for the controlled pollutant(s). In addition, approved revisions to the temperature range/limit will not constitute a relaxation of the monitoring requirements of this permit and may be incorporated into this permit by means of an administrative modification.

- (5) The permittee shall record all periods of operation during which a flame was not present on the flare control system when gas is directed to the flare.
- (6) During periods of start-up, or any other time, when the permittee routes landfill gas to the flare control system, the permittee shall maintain a record of the quantity of landfill gas burned and the length of time during which landfill gas was routed to the flare system.
- (7) The permittee shall keep for at least 5 years up-to-date readily accessible records of the following information for each emissions unit:

- a. continuous records of the equipment operating parameters.
 - b. records for any periods of operation during which the parameter boundaries established during the most recent performance test and exceeded; and,
 - c. records of all visible emissions readings, heat content determinations, flow rate measurements, exit velocity determinations made during the initial performance test, and all continuous records of the flare pilot flame.
- (8) The permittee shall keep up-to-date, readily accessible records for the life of the control equipment of the data measured during the initial performance test of compliance determination. Records of subsequent tests or monitoring shall be maintained for a minimum of 5 years. Records of the control device vendor specifications shall be maintained for the life of the emissions unit.
- (9) The permittee shall maintain records of the duration, including the date and time, of any periods during which only the carbon dioxide vent stream is flowing through the flare.
- e) Reporting Requirements
- (1) The permittee shall submit quarterly deviation (excursion) reports that identify:
- a. all days during which more than 4.5 million standard cubic feet of landfill gas, on a dry basis, was processed by these emissions units.
 - b. all 3-hour blocks of time (when the emissions unit(s) was/were in operation) during which the average combustion temperature within the thermal oxidizer was more than 50 degrees Fahrenheit below the average temperature maintained during the most recent performance test that demonstrated the emissions unit(s) was/were in compliance;
 - c. any records of downtime (date and length of time) for the capture (collection) system, the thermal oxidizer, and/or the monitoring equipment when the emissions unit(s) was/were in operation; and
 - d. a log of the operating time for the capture system, thermal oxidizer, monitoring equipment, and the emissions unit(s).
 - e. each period during which the flame was not present on the flare control system when gas is directed to the flare.

The quarterly reports shall be submitted each year by January 31 (covering October to December), April 30 (covering January to March), July 31 (covering April to June), and October 31 (covering July to September), unless an alternative schedule has been established and approved by the Director (the appropriate District Office or local air agency).

- (2) The permittee shall notify the appropriate Ohio EPA District Office or local air agency of any periods greater than 30 minutes when only the CO₂ vent stream is flowing through the flare. This notification shall include a copy of such record and shall be submitted to the Director (RAPCA) within 45 days after the exceedance occurs.

- (3) Any breakdown or malfunction of the thermal oxidizer and/or flare resulting in the emission of uncontrolled process gas or raw landfill gas shall be reported to the appropriate Ohio EPA District Office or local air agency within one hour after the occurrence or as soon as reasonably possible, in accordance with the requirements specified in OAC rule 3745-15-06, and immediate remedial measures shall be undertaken to correct the problem and prevent further emissions to the atmosphere..
- (4) Annual Permit Evaluation Report (PER) forms will be mailed to the permittee at the end of the reporting period specified in the Authorization section of this permit. The permittee shall submit the PER in the form and manner provided by the director by the due date identified in the Authorization section of this permit. The PER shall cover a reporting period of no more than twelve-months for each air contaminant source identified in this permit.

The permittee shall identify in the annual PER the following information concerning the operations of the thermal oxidizer during the 12-month reporting period for this/these emissions unit(s):

- a. each period of time (start time and date, and end time and date) when the average combustion temperature within the thermal oxidizer was outside of the acceptable range;
- b. any period of time (start time and date, and end time and date) when the emissions unit(s) was/were in operation and the process emissions were not vented to the thermal oxidizer;
- c. each incident of deviation described in "a" or "b" (above) where a prompt investigation was not conducted;
- d. each incident of deviation described in "a" or "b" where prompt corrective action, that would bring the emissions unit(s) into compliance and/or the temperature within the thermal oxidizer into compliance with the acceptable range, was determined to be necessary and was not taken; and
- e. each incident of deviation described in "a" or "b" where proper records were not maintained for the investigation and/or the corrective action(s), as identified in the monitoring and record keeping requirements of this permit.

f) **Testing Requirements**

- (1) Compliance with the Emissions Limitations and/or Control Requirements specified in b) shall be determined in accordance with the following methods:
 - a. Emissions Limitation -

The NMOC emissions from this emissions unit shall not exceed 1.2 pounds per hour.

Applicable Compliance Method –

Compliance shall be determined based on the results of stack testing conducted in accordance with U.S. EPA Reference Methods 18, 25 and/or 25A of 40 CFR Part 60, Appendix A.

b. Emissions Limitation -

The NMOC emissions from this emissions unit shall not exceed 5.26 tons per year.

Applicable Compliance Method –

The 5.26 tons per year limitation was developed by multiplying the 1.2 pounds per hour limitation by the maximum operating schedule of 8,760 hours per year, divided by 2,000 pounds per ton. Therefore, provided compliance is shown with the hourly emission limitation, compliance will also be shown with the annual limitation.

c. Emissions Limitation -

A control system shall be designed and operated to reduce (NMOC) emissions by 98 percent, by weight.

Applicable Compliance Method –

Compliance shall be determined based on the results of stack testing conducted in accordance with U.S. EPA Reference Methods 18, 25 and/or 25A of 40 CFR Part 60, Appendix A.

d. Emissions Limitation -

The HAP emissions as defined in Section 112(b) of the Clean Air Act Amendments of 1990 from this emissions unit shall not exceed 1.2 pounds per hour.

Applicable Compliance Method –

Compliance shall be determined using the latest version of the U.S. EPA Landfill Air Emissions Estimation Model for the development of this permit, version 1.1 of U.S. EPA Landfill Air Emissions Estimation Model Program was utilized. It is assumed that the destruction of HAPs will be accomplished by the thermal oxidizer and that all collected gas is routed to the landfill gas processing plant.

e. Emissions Limitation -

The HAP emissions as defined in Section 112(b) of the Clean Air Act Amendments of 1990 from this emissions unit shall not exceed 5.26 tons per year.

Applicable Compliance Method –

Compliance shall be determined using the latest version of the U.S. EPA Landfill Air Emissions Estimation Model for the development of this permit, version 1.1 of U.S. EPA Landfill Air Emissions Estimation Model Program was utilized. The 5.26 tons per year limitation was developed by multiplying the 1.2 lbs/hour limitation by the maximum operating schedule of 8,760 hours per year, divided by 2,000 pounds per ton. Therefore, provided compliance is shown with the hourly emission limitation, compliance will also be shown with the annual limitation.

f. Emissions Limitation -

No visible emissions from the flare except for periods not to exceed a total of 5 minutes during any two consecutive hours.

Applicable Compliance Method –

Compliance shall be determined by visible emissions evaluations performed in accordance with 40 CFR Part 60, using the procedures specified in U.S. EPA Reference Method 22 of 40 CFR Part 60, Appendix A.

(2) The permittee shall conduct, or have conducted, a performance test for emissions unit P001 in accordance with the following requirements:

- a. the performance test shall be performed on a recurring three year schedule; (The last stack test demonstrating compliance for this emissions unit was completed March 10, 2011.)
- b. the performance test shall be conducted to demonstrate compliance with the minimum 98 weight percent destruction of NMOC;
- c. the following test methods of 40 CFR Part 60, Appendix A shall be used to demonstrate compliance with the minimum 98 weight percent destruction efficiency requirement for NMOC, Methods 18, 25 and/or 25A, if method 18 is used the minimum list of compounds to be tested shall be those published in the most recent Compilation of Air Pollutant Emission Factors (AP-42). The following equation shall be used to calculate efficiency:

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

where:

NMOC_{in} = mass of NMOC entering the control system

NMOC_{out} = mass of NMOC exiting the control system

- d. the test(s) shall be conducted while the emissions unit is operating at or near its maximum capacity, unless otherwise specified or approved by the Regional Air Pollution Control Agency.

- e. The permittee shall determine the net heating value of the gas being combusted in the flare control system by collecting a representative sample of the gaseous fuel burned in the flare and analyzing the fuel for heat content in accordance with ASTM Method D1945 or; according to the equation identified in 40 CFR 60.18(f)(3).
 - f. The actual exit velocity of a flare shall be determined by dividing the volumetric flowrate (in units of standard time and pressure), as determined by U.S. EPA Reference Method 2, 2A, 2C, or 2D as appropriate; by the unobstructed (free) cross sectional area of the flare tip. Compliance with this requirement was demonstrated during testing completed on July 30 and 31, 2003.
- (3) Not later than 60 days prior to the proposed test date(s), the permittee shall submit an "Intent to Test" notification to the appropriate Ohio EPA District Office or 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 Ohio EPA District Office's or local air agency's refusal to accept the results of the emission test(s).

Personnel from the appropriate Ohio EPA District Office or 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.

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 appropriate Ohio EPA District Office or 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 appropriate Ohio EPA District Office or local air agency.

g) Miscellaneous Requirements

- (1) None.