



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

10/23/2013

Certified Mail

Mr. Mark Whitaker  
Team Gemini Project Cardinal LLC COR3  
309 Altamonte Commerce Boulevard  
Suite 1506  
Altamonte Springs, FL 32714

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

RE: FINALAIR POLLUTION PERMIT-TO-INSTALL AND OPERATE

Facility ID: 0125094018  
Permit Number: P0115308  
Permit Type: Initial Installation  
County: Franklin

Dear Permit Holder:

Enclosed please find a final Ohio Environmental Protection Agency (EPA) 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. 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**

**How to appeal this permit**

The issuance of this PTIO 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](http://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](http://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](http://www.epa.ohio.gov/dapc) by clicking the "Search for Permits" link under the Permitting topic on the Programs tab.

If you have any questions, please contact Ohio EPA DAPC, Central District Office at (614)728-3778 or the Office of Compliance Assistance and Pollution Prevention at (614) 644-3469.

Sincerely,



Michael W. Ahern, Manager

Permit Issuance and Data Management Section, DAPC

Cc: Ohio EPA-CDO



**FINAL**

**Division of Air Pollution Control  
Permit-to-Install and Operate  
for  
Team Gemini Project Cardinal LLC COR3**

Facility ID:	0125094018
Permit Number:	P0115308
Permit Type:	Initial Installation
Issued:	10/23/2013
Effective:	10/23/2013
Expiration:	10/23/2023





**Division of Air Pollution Control**  
**Permit-to-Install and Operate**  
for  
Team Gemini Project Cardinal LLC COR3

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**Final Permit-to-Install and Operate**  
Team Gemini Project Cardinal LLC COR3  
**Permit Number:** P0115308  
**Facility ID:** 0125094018  
**Effective Date:** 10/23/2013

## Authorization

Facility ID: 0125094018  
Application Number(s): A0048147, A0048836  
Permit Number: P0115308  
Permit Description: Material Recovery Facility capable of processing 130 tons per hour, 3 CHP engine/generators running off landfill gas, biogas and/or natural gas, along with a GP for paved roads and parking  
Permit Type: Initial Installation  
Permit Fee: \$2,300.00  
Issue Date: 10/23/2013  
Effective Date: 10/23/2013  
Expiration Date: 10/23/2023  
Permit Evaluation Report (PER) Annual Date: Jan 1 - Dec 31, Due Feb 15

This document constitutes issuance to:

Team Gemini Project Cardinal LLC COR3  
3395 London Groveport Rd  
Grove City, OH 43123

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

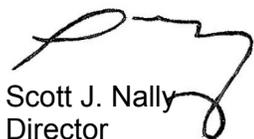
Ohio Environmental Protection Agency (EPA) District Office or local air agency responsible for processing and administering your permit:

Ohio EPA DAPC, Central District Office  
50 West Town Street, 6th Floor  
P.O. Box 1049  
Columbus, OH 43216-1049  
(614)728-3778

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: P0115308

Permit Description: Material Recovery Facility capable of processing 130 tons per hour, 3 CHP engine/generators running off landfill gas, biogas and/or natural gas, along with a GP for paved roads and parking

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

<b>Emissions Unit ID:</b>	<b>B003</b>
Company Equipment ID:	CHP Engine Generator No. 3
Superseded Permit Number:	
General Permit Category and Type:	Not Applicable
<hr/>	
<b>Emissions Unit ID:</b>	<b>P003</b>
Company Equipment ID:	Plastics Processing Line
Superseded Permit Number:	
General Permit Category and Type:	Not Applicable

**Group Name: 2 MW Engines**

<b>Emissions Unit ID:</b>	<b>B001</b>
Company Equipment ID:	CHP Engine Generator No. 1
Superseded Permit Number:	
General Permit Category and Type:	Not Applicable
<b>Emissions Unit ID:</b>	<b>B002</b>
Company Equipment ID:	CHP Engine Generator No. 2
Superseded Permit Number:	
General Permit Category and Type:	Not Applicable

**Group Name: 65 ton per hour lines**

<b>Emissions Unit ID:</b>	<b>P001</b>
Company Equipment ID:	MRF Line No. 1
Superseded Permit Number:	
General Permit Category and Type:	Not Applicable
<b>Emissions Unit ID:</b>	<b>P002</b>
Company Equipment ID:	MRF Line No. 2
Superseded Permit Number:	
General Permit Category and Type:	Not Applicable



**Final Permit-to-Install and Operate**  
Team Gemini Project Cardinal LLC COR3  
**Permit Number:** P0115308  
**Facility ID:** 0125094018  
**Effective Date:** 10/23/2013

## **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 Ohio EPA DAPC, Central District Office 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 submitting<sup>1</sup> 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.

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<sup>1</sup>Permittees 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.



**Final Permit-to-Install and Operate**  
Team Gemini Project Cardinal LLC COR3  
**Permit Number:** P0115308  
**Facility ID:** 0125094018  
**Effective Date:** 10/23/2013

## **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.



**Final Permit-to-Install and Operate**  
Team Gemini Project Cardinal LLC COR3  
**Permit Number:** P0115308  
**Facility ID:** 0125094018  
**Effective Date:** 10/23/2013

## **C. Emissions Unit Terms and Conditions**



**1. B003, CHP Engine Generator No. 3**

**Operations, Property and/or Equipment Description:**

2,165 HP, 1.55 MW, stationary, spark ignition, lean burn, 4 cycle, internal combustion engine fired with landfill gas, biogas or natural gas

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. b)(1)c., b)(1)d., b)(1)k., and b)(2)h.

(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), as effective 11/30/01	Nitrogen oxide (NO <sub>x</sub> ) emissions shall not exceed 1.43 pounds per hour and 6.27 tons per year.  Sulfur dioxide (SO <sub>2</sub> ) emissions shall not exceed 1.43 pounds per hour and 6.27 tons per year.  Volatile organic compound (VOC) emissions shall not exceed 0.91 pound per hour and 3.99 tons per year.  Particulate matter less than 10 microns in diameter (PM <sub>10</sub> ) emissions shall not exceed 0.13 pound per hour and 0.57 ton per year.



	Applicable Rules/Requirements	Applicable Emissions Limitations/Control Measures
		<p>Particulate matter less than 2.5 microns in diameter (PM<sub>2.5</sub>) emissions shall not exceed 0.13 pound per hour and 0.57 ton per year.</p> <p>The emissions limitations established under OAC rule 3745-31-05(A)(3) are less stringent than the emission limitations established pursuant to OAC rule 3745-31-05(F).</p> <p>BAT has been determined to be utilization of lean burn technology, a catalytic oxidizer and selective catalyst reduction.</p> <p>See b)(2)a., b)(2)j., c)(1) below.</p>
b.	OAC rule 3745-31-05(A)(3), as effective 12/1/06	See b)(2)b. below.
c.	ORC 3704.03(T)	Emissions of carbon monoxide (CO) shall not exceed 2.27 tons per month, averaged over a twelve-month rolling period.
d.	OAC rule 3745-31-05(F) (Voluntary restrictions to avoid BAT and NSR)	<p>Carbon monoxide (CO) emissions shall not exceed 1.3 grams per horse power hour.</p> <p>Nitrogen oxide (NO<sub>x</sub>) emissions shall not exceed 0.3 gram per horse power hour.</p> <p>Particulate matter less than 10 microns in diameter (PM<sub>10</sub>) emissions shall not exceed 0.01 lb per MMBtu.</p> <p>Particulate matter less than 2.5 microns in diameter (PM<sub>2.5</sub>) emissions shall not exceed 0.01 lb per MMBtu.</p> <p>Sulfur dioxide (SO<sub>2</sub>) emissions shall not exceed 0.3 gram per horse power hour.</p> <p>Volatile organic compound (VOC) emissions shall not exceed 0.19 gram per horse power hour.</p> <p>Formaldehyde emissions shall not exceed 0.05 pound per hour.</p>



	Applicable Rules/Requirements	Applicable Emissions Limitations/Control Measures
		Visible particulate emissions shall not exceed 10% opacity as a 6-minute average.
e.	OAC rule 3745-17-07(A)	The visible emission limitation specified by this rule is less stringent than the visible emission limitation established pursuant to OAC rule 3745-31-05(F).  See b)(2)(b)(ii) below.
f.	OAC rule 3745-17-11(B)(5)	The emission limitation specified by this rule is less stringent than the emission limitation established pursuant to OAC rule 3745-31-05(F).
g.	OAC rule 3745-18-06(G)	The emission limitation specified by this rule is less stringent than the emission limitation established pursuant to OAC rule 3745-31-05(F).
h.	40 CFR Part 60, Subpart JJJJ  In accordance with 40 CFR 60.4230, this emissions unit is subject to the New Source Performance Standards (NSPS) for Stationary Spark Ignition (SI) Internal Combustion Engines (ICE)..  40 CFR 60.4233(e)  Table 1 to Part 60, Subpart JJJJ	Emission standards for SI-ICE in Table 1 of 40 CFR, Part 60, Subpart JJJJ  See Table 1 below, b)(2)d.  The NO <sub>x</sub> , CO, and VOC emission limitations established pursuant to this subpart are less stringent than those established in OAC rule 3745-31-05(F).
i.	40 CFR, Part 63, Subpart ZZZZ	See b)(2)c. below.
j.	40 CFR, Part 60, Subpart WWW	Outlet concentration less than 20 ppmv (dry basis as hexane at 3% O <sub>2</sub> ) or 98% reduction by weight NMOC.
k.	ORC 3704.03(F)	See b)(2)h. below.
l.	40 CFR, Part 63, Subpart AAAA	Start up, shut down, malfunction plan and semi-annual reports in accordance with 40 CFR 60.757(f).  See b)(2)i. below.
m.	OAC rule 3745-110-03(F)	For engines greater than 2,000 HP, the NO <sub>x</sub> emissions limit specified by this rule is less stringent than the NO <sub>x</sub> limit from NSPS Subpart JJJJ.



(2) Additional Terms and Conditions

- a. The permittee has satisfied the Best Available Technology (BAT) requirements pursuant to OAC paragraph 3745-31-05(A)(3), as effective November 30, 2001, in this permit. On December 1, 2006, paragraph (A)(3) of OAC rule 3745-31-05 was revised to conform to ORC changes effective August 3, 2006 (S.B. 265 changes), such that BAT is no longer required by State regulations for NAAQS pollutants less than ten tons per year. However, that rule revision has not yet been approved by U.S. EPA as a revision to Ohio's State Implementation Plan (SIP). Therefore, until the SIP revision occurs and the U.S. EPA approves the revisions to OAC rule 3745-31-05, the requirement to satisfy BAT still exists as part of the federally-approved SIP for Ohio. Once U.S. EPA approves the December 1, 2006 version of 3745-31-05, then these emission limits/control measures no longer apply.
- b. This rule paragraph applies once U.S. EPA approves the December 1, 2006 version of OAC rule 3745-31-05 as part of the State Implementation Plan.
  - i. The Best Available Technology (BAT) requirements under OAC rule 3745-31-05(A)(3) do not apply to the NO<sub>x</sub>, PM10/PM2.5, SO<sub>2</sub> and VOC emissions from this air contaminant source since the potential to emit for NO<sub>x</sub>, PM10/PM2.5, SO<sub>2</sub> and VOC are less than 10 tons per year.
  - ii. Visible particulate emissions from the stack serving this emissions unit shall not exceed 10 percent opacity as a six-minute average, except as provided by rule.
- c. A new or reconstructed area source operating in compliance with Part 60 Subpart JJJJ is the demonstration of compliance for 40 CFR 63 Subpart ZZZZ.
- d. 40 CFR, Part 60, Subpart JJJJ Table 1

Engine type and fuel	Maximum engine power	Manufacture date	Emission standards <sup>a</sup>					
			g/HP-hr			ppmvd at 15% O <sub>2</sub>		
			NO <sub>x</sub>	CO	VOC <sup>d</sup>	NO <sub>x</sub>	CO	VOC <sup>d</sup>
Non-Emergency SI Natural Gas <sup>b</sup> and Non-Emergency SI Lean Burn LPG <sup>b</sup>	100≤HP<500	7/1/2008	2.0	4.0	1.0	160	540	86
		1/1/2011	1.0	2.0	0.7	82	270	60
Non-Emergency SI Lean Burn Natural Gas and LPG	500≤HP<1,350	1/1/2008	2.0	4.0	1.0	160	540	86
		7/1/2010	1.0	2.0	0.7	82	270	60
Non-Emergency SI Natural Gas and Non-Emergency SI Lean Burn LPG (except lean burn 500≤HP<1,350)	HP≥500	7/1/2007	2.0	4.0	1.0	160	540	86
		7/1/2010	1.0	2.0	0.7	82	270	60



Landfill/Digester Gas (except lean burn 500≤HP<1,350)	HP<500	7/1/2008	3.0	5.0	1.0	220	610	80
		1/1/2011	2.0	5.0	1.0	150	610	80
	HP≥500	7/1/2007	3.0	5.0	1.0	220	610	80
		7/1/2010	2.0	5.0	1.0	150	610	80
Landfill/Digester Gas Lean Burn	500≤HP<1,350	1/1/2008	3.0	5.0	1.0	220	610	80
		7/1/2010	2.0	5.0	1.0	150	610	80
Emergency	25<HP<130	1/1/2009	° 10	387	N/A	N/A	N/A	N/A
	HP≥130		2.0	4.0	1.0	160	540	86

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

60.4236(b)	Installation deadlines
60.4243(b)	Compliance Requirements

- f. The stationary spark ignition (SI) internal combustion engine (ICE) is subject to and shall be operated in compliance with the requirements of 40 CFR Part 60, Subpart JJJJ, the standards of performance for stationary SI ICE.

[40 CFR 60.4230(a)]

- g. The stationary SI ICE has been or shall be purchased certified by the manufacturer to emission standards as stringent as those identified in 40 CFR 60.4233(e) and found in Table 1 of Part 60, Subpart JJJJ for lean burn engines greater than or equal to 1,350 HP, manufactured on or after 7/1/10, and burning landfill or digester gas.

[40 CFR 60.4233(e)] and [40 CFR 60.4231(e)]

- h. Modeling to demonstrate compliance with, the “Toxic Air Contaminant Statute”, ORC 3704.03(F)(4)(b), was not necessary because the emissions units maximum annual emissions for each toxic air contaminant, as defined in OAC rule 3745-114-01, will be less than 1.0 ton per year. OAC Chapter 3745-31 requires permittees to apply for and obtain a new or modified PTI prior to making a “modification” as defined by OAC rule 3745-31-01. The permittee is hereby advised that changes in the composition of the materials, or use of new materials, that would cause the emissions of any toxic air contaminant to increase to above 1.0 ton per year may require the permittee to apply for and obtain a new Permit to Install.



- i. The engines act as either a control device for landfill gas or a gas treatment system for a landfill and become subject to 40 CFR Part 63, Subpart AAAA when the engines combust landfill gas.
- j. The catalytic oxidizer (cat-ox) and the selective catalyst reduction (SCR) shall be installed, operated and maintained in accordance with the manufacturer's recommendations, instructions, and operating manuals, with any modifications deemed necessary by the permittee.

c) Operational Restrictions

- (1) The internal combustion engine shall operate using lean burn technology.
- (2) The stationary SI ICE shall be installed, operated, and maintained according to the manufacturer's specifications, written instructions, and procedures over the entire life of the engine. The permittee shall operate and maintain the stationary SI ICE to achieve the emission standards identified in 40 CFR 60.4233(e) and found in Table 1 of NSPS Subpart JJJJ over the entire life of the engine. Any air-to-fuel ratio controllers shall be set by the manufacturer and/or according to the operations manual, to ensure proper operation of the engine and control device and to minimize emissions.

[40 CFR 60.4234], [40 CFR 60.4243(b)(1)], and [40 CFR 60.4243(g)]

- (3) The permittee shall burn only natural gas, treated landfill gas or biogas in this emission unit. There shall be no by-pass for the release of any gases into the atmosphere.
- (4) The permittee shall install, 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 when the internal combustion engine is not operating.
- (5) The flow rate to the internal combustion engines shall not exceed 450 cfm of landfill gas and/or biogas and shall not exceed 210 cfm of natural gas.
- (6) The minimum allowable average 3-hour block temperature of the engine combustion chamber shall not be more than 28 degrees C (82.4 degrees Fahrenheit) lower than the average combustion chamber temperature during the most recent emission test conducted to demonstrate compliance with the applicable emission limitations in 40 CFR Part 60 § 60.752(b)(2)(iii)(C).
- (7) The permittee shall comply with the applicable requirements of 40 CFR, Part 60, Subpart JJJJ, including the following sections:

60.4234	Duration of compliance with the emissions standards
60.4243(b)	Maintenance Requirements
60.4243(g)	Air-to-Fuel (ATR) controllers



- (8) The quality of the fuel burned in this emissions unit shall meet a sulfur content that is sufficient to comply with the allowable sulfur dioxide emission limitation specified in this permit.

d) Monitoring and/or Recordkeeping Requirements

- (1) The permittee shall perform daily checks, when the emissions unit is in operation and, when the weather conditions allow, for any visible particulate emissions from the exhaust stack serving this emissions unit. The presence or absence of any visible emissions shall be noted in an operations log. If visible emissions are observed from the stack, the permittee shall also note the following in the operations log:
- a. the location and color of the emissions;
  - b. the total duration of any visible emissions incident; and
  - c. any corrective actions taken to eliminate the visible emissions.

If visible emissions are present, a visible emissions incident has occurred. The observer does not have to document the exact start and end times for the visible emissions incident. The observer may indicate that the visible emissions incident was continuous during the observation period (or, if known, continuous during the operation of the emissions unit). With respect to the documentation of corrective actions, the observer may specify the minor corrective actions that were taken to ensure that the emissions unit returned to normal operating conditions, and specify the corrective actions that were taken to eliminate abnormal visible emissions.

- (2) The permittee shall record the dates and times when the internal combustion engine operates as a landfill gas control device.
- (3) The permittee shall install, calibrate and maintain devices that monitor and record landfill gas flow, biogas flow and natural gas flow to the internal combustion engine. The gas flow rate measuring devices shall record the flow to the control device at least every 15 minutes.
- (4) The permittee shall monitor and record the downtime of each engine, individually.
- (5) The permittee shall document any deviation from the maximum allowable gas flow rate to the internal combustion engine.
- (6) The permittee shall document each day when a fuel other than natural gas, treated landfill gas or biogas was burned in the internal combustion engine.
- (7) The permittee shall install, calibrate and maintain devices that monitor and record the combustion chamber temperature of the internal combustion engine. The combustion chamber monitoring devices shall collect and record the average combustion temperature for each 3-hour block of time the engine is operating.
- (8) The permittee shall comply with the applicable requirements of 40 CFR, Part 60, Subpart JJJJ, including the following sections:



60.4243(b)(2)(ii)	Keeping a maintenance plan and records of conducted maintenance
60.4245(a)	Records required

- (9) The permittee shall maintain the manufacturer’s certification on site or at a central location for all facility ICE and it shall be made available for review upon request. If the manufacturer’s certification is not kept on site, the permittee shall maintain a log for the location of each ICE and it shall identify the agency-assigned emissions unit number, the manufacturer’s identification number, and the identification number of the certificate. The manufacturer’s operations manual shall be maintained at the same location as the ICE.

[40 CFR 60.4243(b)(1)]

- (10) The permittee shall maintain the following records and make them available upon request:
- a. all notifications submitted to comply with and all documentation supporting compliance with Part 60 Subpart JJJJ;
  - b. records of all maintenance conducted on the engine;
  - c. the certification from the manufacturer, documenting that the engine is certified to meet the emission standards identified in 40 CFR 60.4231(e); and
  - d. the information identified in 40 CFR parts 90, 1048, 1054, and/or 1060 that is required to be provided by the manufacturer to the operator/owner, as applicable to the model year and horsepower of the engine.

[40 CFR 60.4245(a)]

e) Reporting Requirements

- (1) Unless other arrangements have been approved by the Director, all notifications and reports shall be submitted through the Ohio EPA's eBusiness Center: Air Services online web portal.
- (2) The permittee shall submit deviation (excursion) reports that identify each day when a fuel other than treated landfill gas, natural gas or biogas was burned in this emission unit. Each report shall be submitted within 30 days after the deviation occurs.
- (3) The permittee shall submit semiannual written reports that identify:
  - a. all days during which any visible particulate emissions were observed from the stack serving this emissions unit;
  - b. any corrective actions taken to minimize or eliminate the visible particulate emissions;



- c. all days and durations during which the gas flow rate to the internal combustion engine exceeded the maximum gas flow rate; and
- d. all days when the average 3-hour block temperature of the engine combustion chamber was more than 28 degrees C (82.4 F) lower than the average combustion chamber temperature during the most recent emission test that demonstrated compliance with emission limitations in 40 CFR, Part 60.752(B)(2)(iii)(C).

These reports shall be submitted to the Director of Central District Office, Ohio EPA by January 31 and July 31 of each year and shall cover the previous 6-month period.

- (4) The permittee shall comply with the applicable requirements of 40 CFR, Part 60, Subpart JJJJ, including but not limited to the following sections:

60.4245(c)	Initial Notification
60.4245(d)	Performance Test Report

- (5) The permittee shall submit an annual Permit Evaluation Report (PER) to the Ohio EPA Central District Office by the due date identified in the Authorization section of this permit. The permit evaluation report shall cover a reporting period of no more than twelve months for each air contaminant source identified in this permit. It is recommended that the PER is submitted electronically through the Ohio EPA's "e-Business Center: Air Services" although PERs can be submitted via U.S. postal service or can be hand delivered.

f) Testing Requirements

- (1) 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 particulate emissions from the stack shall not exceed 10% opacity as a six-minute average, except as specified by rule.  
  
Applicable Compliance Method: Compliance with the stack visible particulate emissions limitation shall be determined through visible emissions observations performed in accordance with U.S. EPA Method 9.
  - b. Emission Limitation: 0.062 pound PE per MMBtu of actual heat input  
  
Applicable Compliance Method: If required, compliance with the PE limitation (lb/MMBtu) limitation shall be determined in accordance with Method 5 of 40 CFR, Part 60, Appendix A.
  - c. Emission Limitations: Carbon monoxide (CO) emissions shall not exceed 1.3 grams per horse power hour; nitrogen oxide (NO<sub>x</sub>) emissions shall not exceed 0.3 gram per horse power hour; particulate matter less than 10 microns in



diameter (PM<sub>10</sub>) emissions shall not exceed 0.01 lb per MMBtu; particulate matter less than 2.5 microns in diameter (PM<sub>2.5</sub>) emissions shall not exceed 0.01 lb per MMBtu; sulfur dioxide (SO<sub>2</sub>) emissions shall not exceed 0.3 gram per horse power hour; volatile organic compound (VOC) emissions shall not exceed 0.19 gram per horse power hour; and formaldehyde emissions shall not exceed 0.23 pound per hour

Applicable Compliance Method: The permittee shall conduct, or have conducted, emission testing for this emissions unit in accordance with the following requirements within six months of commencing operation:

- i. Emission testing shall be conducted to demonstrate compliance with the allowable emission rates for NO<sub>x</sub>, CO, SO<sub>2</sub>, PM, formaldehyde, and VOC.

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

- (a) NO<sub>x</sub> – Methods 1-4 and 7; or 7E of 40 CFR, Part 60, Appendix A;
- (b) CO – Methods 1-4 and 10 of 40 CFR, Part 60, Appendix A;
- (c) VOC – Methods 1-4 and 18 or Method 25A of 40 CFR, Part 60, Appendix A or Method 320 of 40 CFR, Part 63;
- (d) SO<sub>2</sub> – Methods 1-4 and 6C of 40 CFR Part 60, Appendix A;
- (e) PM – Methods 1-4 and 5 of 40 CFR Part 60, Appendix A; and
- (f) Formaldehyde – Methods 1-4 and 320 of 40 CFR Part 60, Appendix A.

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

- ii. The test(s) shall be conducted while the emissions unit is operating at or near its maximum capacity, and combusting either landfill gas or digester gas, unless otherwise specified or approved by Ohio EPA Central District Office.
- iii. Not later than 30 days prior to the proposed test date(s), the permittee shall submit an "Intent to Test" notification to the Ohio EPA Central District Office. 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 Central District Office's refusal to accept the results of the emission test(s).
- iv. Personnel from the Ohio EPA Central District Office shall be permitted to witness the test(s), examine the testing equipment, and acquire data and information necessary to ensure that the operation of the emissions unit and the testing procedures provide a valid characterization of the emissions from the emissions unit and/or the performance of the control equipment.



v. 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 Ohio EPA Central District Office within 30 days following completion of the test(s). The permittee may request additional time for the submittal of the written report, where warranted, with prior approval from the Ohio EPA Central District Office.

(2) The permittee shall comply with the applicable testing requirements of 40 CFR, Part 60, Subpart JJJJ, including but not limited to:

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

(3) If the natural gas engine was purchased without an EPA certificate of conformity, the engine will need to meet the performance testing requirements of 40 CFR 60.4243(b)(2)(ii) and the permittee will be required to conduct an initial performance test and subsequent performance tests every 8,760 hours of operation or 3 years whichever comes first, to demonstrate compliance with the emission limits from Part 60 Subpart JJJJ.

[60.4243(b)(1) and (2)]

g) Miscellaneous Requirements

(1) None.



**2. F001, Paved Roadways & Parking Areas**

**Operations, Property and/or Equipment Description:**

GP 6.4 for paved roads and parking

- 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)	8.5 tons/year of fugitive particulate matter of 10 microns or less (PM10) 43.5 tons/year of fugitive particulate emissions (PE) no visible PE except for one minute during any 60-minute period best available control measures that are sufficient to minimize or eliminate visible PE of fugitive dust (See b)(2)a. through b)(2)f.)
b.	OAC rule 3745-17-07(B)(4) (applicable only if this emissions unit is located in an area identified in Appendix A of OAC rule 3745-17-08)	The emission limitation specified by this rule is less stringent than the emission limitation established pursuant to OAC rule 3745-31-05(A)(3).



	Applicable Rules/Requirements	Applicable Emissions Limitations/Control Measures
c.	OAC rule 3745-17-08(B)  (applicable only if this emissions unit is located in an area identified in Appendix A of OAC rule 3745-17-08)	(See b)(2)a. through b)(2)f.)

(2) Additional Terms and Conditions

- a. The permittee shall employ best available control measures on all paved roadways and parking areas for the purpose of ensuring compliance with the above-mentioned applicable requirements. In accordance with the permittee's application, the permittee has committed to treat the paved roadways and parking areas by application of chemical stabilization/dust suppressants and/or watering at sufficient treatment frequencies to ensure compliance. Nothing in this paragraph shall prohibit the permittee from employing other control measures to ensure compliance.
- b. The needed frequencies of implementation of the control measures shall be determined by the permittee's inspections pursuant to the monitoring section of this permit. Implementation of the control measures shall not be necessary for paved roadways and parking areas that are covered with snow and/or ice or if precipitation has occurred that is sufficient for that day to ensure compliance with the above-mentioned applicable requirements. Implementation of any control measure may be suspended if unsafe or hazardous driving conditions would be created by its use.
- c. The permittee shall promptly remove, in such a manner as to minimize or prevent resuspension, earth and/or other material from paved streets onto which such material has been deposited by trucking or earth moving equipment or erosion by water or other means.
- d. Open-bodied vehicles transporting materials likely to become airborne shall have such materials covered at all times if the control measure is necessary for the materials being transported.
- e. Implementation of the above-mentioned control measures in accordance with the terms and conditions of this permit is appropriate and sufficient to satisfy the best available technology requirements of OAC rule 3745-31-05.

c) Operational Restrictions

- (1) None.



d) Monitoring and/or Recordkeeping Requirements

- (1) Except as otherwise provided in this section, the permittee shall perform inspections of each of the roadway segments and parking areas in accordance with the following frequencies:

<u>paved roadways and parking areas</u>	<u>minimum inspection frequency</u>
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all roads and parking areas	daily
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- (2) The purpose of the inspections is to determine the need for implementing the above-mentioned control measures. The inspections shall be performed during representative, normal traffic conditions. No inspection shall be necessary for a roadway or parking area that is covered with snow and/or ice or if precipitation has occurred that is sufficient for that day to ensure compliance with the above-mentioned applicable requirements. Any required inspection that is not performed due to any of the above-identified events shall be performed as soon as such event(s) has (have) ended, except if the next required inspection is within one week.

- (3) The permittee shall maintain records of the following information:

- a. the date and reason any required inspection was not performed, including those inspections that were not performed due to snow and/or ice cover or precipitation;
- b. the date of each inspection where it was determined by the permittee that it was necessary to implement the control measures;
- c. the dates the control measures were implemented; and
- d. on a calendar quarter basis, the total number of days the control measures were implemented and the total number of days where snow and/or ice cover or precipitation were sufficient to not require the control measures.

- (4) The information required in d)(3)d. shall be updated on a calendar quarter basis within 30 days after the end of each calendar quarter.

e) Reporting Requirements

- (1) 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 permit evaluation report shall cover a reporting period of no more than twelve-months for each air contaminant source identified in this permit.

f) Testing Requirements

- (1) 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 Limitations:

8.5 tons/year of fugitive PM10

43.5 tons/year of fugitive PE

Applicable Compliance Method:

Compliance with fugitive PE and PM10 limitations shall be determined by using the emission factor equations in Section 13.2.1, in Compilation of Air Pollutant Emission Factors, AP-42, Fifth Edition, Volume 1 (revised 12/03) for paved roadways. Should further updates in AP-42 occur, the most current equations for paved roads shall be used. These emission limits in the General Permit were based on greater than 70,000 vehicle miles but less than or equal to 230,000 vehicle miles traveled per year, and a 95 % control efficiency for PE and PM10.

b. Emission Limitation:

No visible PE from paved roadways and parking areas except for a period of time not to exceed one minute during any 60-minute observation period.

Applicable Compliance Method:

If required, compliance with the visible PE limitation listed above shall be determined in accordance with Test Method 22 as set forth in "Appendix on Test Methods" in 40 CFR, Part 60 ("Standards of Performance for New Stationary Sources").

g) Miscellaneous Requirements

(1) None.



**3. P003, Plastics Processing Line**

**Operations, Property and/or Equipment Description:**

Plastic Processing Line - 30 tons per hour

- 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. b)(1)c.
  - (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)	The emission limitations established under OAC rule 3745-31-05(A)(3) are less stringent than the emission limitations established pursuant to OAC rule 3745-31-05(F).  See b)(2)a. below.
b.	OAC rule 3745-31-05(A)(3), as effective 12/1/06	See b)(2)b. below.
c.	OAC rule 3745-31-05(F) (Voluntary restrictions to avoid BAT and NSR)	Particulate emissions shall not exceed 0.001 grain per dry standard cubic foot of exhaust gases (gr/dscf) for PM <sub>2.5</sub> /PM <sub>10</sub> emissions from each baghouse associated with this emission unit.  Visible particulate emission from dust collector exhausts emitted directly to the ambient air shall not exceed 10% opacity as a 6-minute average.



	Applicable Rules/Requirements	Applicable Emissions Limitations/Control Measures
		<p>There shall be no visible particulate emissions from building openings (doorways, windows or vents).</p> <p>See c)(1) below.</p>
d.	OAC rule 3745-17-07(A)(1)	The visible emission limitation specified by this rule is less stringent than the visible emission limitation established pursuant to OAC rule 3745-31-05(F).
e.	OAC rule 3745-17-08	The emissions limitation specified by this rule is less stringent than the emission limitations established pursuant to OAC rule 3745-31-05(F).
f.	OAC rule 3745-17-11(B)(1)	The particulate emission limitation specified by this rule is less stringent than the particulate emission limitation established pursuant to OAC rule 3745-31-05(F).

(2) Additional Terms and Conditions

- a. The permittee has satisfied the Best Available Technology (BAT) requirements pursuant to OAC paragraph 3745-31-05(A)(3), as effective November 30, 2001, in this permit. On December 1, 2006, paragraph (A)(3) of OAC rule 3745-31-05 was revised to conform to ORC changes effective August 3, 2006 (S.B. 265 changes), such that BAT is no longer required by State regulations for NAAQS pollutants less than ten tons per year. However, that rule revision has not yet been approved by U.S. EPA as a revision to Ohio's State Implementation Plan (SIP). Therefore, until the SIP revision occurs and the U.S. EPA approves the revisions to OAC rule 3745-31-05, the requirement to satisfy BAT still exists as part of the federally-approved SIP for Ohio. Once U.S. EPA approves the December 1, 2006 version of 3745-31-05, then these emission limits/control measures no longer apply.
- b. This rule paragraph applies once U.S. EPA approves the December 1, 2006 version of OAC rule 3745-31-05 as part of the State Implementation Plan.

The Best Available Technology (BAT) requirements under OAC rule 3745-31-05(A)(3) do not apply to the PM<sub>10</sub>/PM<sub>2.5</sub> emissions from this air contaminant source since the potential to emit for PM<sub>10</sub>/PM<sub>2.5</sub> is less than 10 tons per year.



c) Operational Restrictions

- (1) The permittee shall install and operate a filtration system, for the control of particulate emissions, and shall use each baghouse whenever this emissions unit is in operation. The baghouses shall be operated and maintained in accordance with the manufacturer's recommendations, instructions, and/or operating manual(s), with any modifications deemed necessary by the permittee.

d) Monitoring and/or Recordkeeping Requirements

- (1) The permittee shall properly install, operate, and maintain equipment to continuously monitor the pressure drop, in inches of water, across each baghouse when the controlled emissions unit is in operation, including periods of startup and shutdown. The permittee shall record the pressure drop across each baghouse and bin vent filter on a daily basis.
- (2) The monitoring equipment shall be installed, calibrated, operated, and maintained in accordance with the manufacturer's recommendations, instructions, and operating manual(s). The acceptable pressure drop range shall be based upon the manufacturer's specifications, which is 1.5 to 6 inches of water for each baghouse serving this emissions unit.
- (3) Whenever the monitored value for the pressure drop deviates from the limit or range 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.
- (4) 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 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:
  - a. A description of the corrective action;
  - b. The date corrective action was completed;
  - c. The date and time the deviation ended;



- d. The total period of time (in minutes) during which there was a deviation;
- e. The pressure drop readings immediately after the corrective action was implemented; and
- f. 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.

This range or limit on the pressure drop across each baghouse is effective for the duration of this permit, unless revisions are requested by the permittee and approved in writing by Ohio EPA Central District Office. The permittee may request revisions to the permitted limit or range for the pressure drop based upon information obtained during future testing that demonstrate compliance with the allowable particulate emission rate for the controlled emissions unit. In addition, approved revisions to the range or 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 properly install, operate and maintain equipment to continuously monitor the air flow for each material handling dust collectors, when the controlled emissions unit is in operation, including periods of startup and shutdown. The permittee shall record the air flow rate on a daily basis.
- (6) The permittee shall perform daily checks, when the emissions unit is in operation and, when the weather conditions allow, for any visible particulate emissions from the exhaust stack and for any visible emissions of fugitive dust from the egress points (i.e., building windows, doors, roof monitors, etc.) serving this emissions unit. The presence or absence of any visible emissions shall be noted in an operations log. If visible emissions are observed from any points of capture and/or the stack, the permittee shall also note the following in the operations log:
  - a. the location and color of the emissions;
  - b. the total duration of any visible emissions incident; and
  - c. any corrective actions taken to eliminate the visible emissions.

e) Reporting Requirements

- (1) Unless other arrangements have been approved by the Director, all notifications and reports shall be submitted through the Ohio EPA's eBusiness Center: Air Services online web portal.
- (2) The permittee shall submit semiannual written reports that identify:
  - a. all days during which any visible particulate emissions were observed from the stack serving this emissions unit;



- b. all days during which any visible particulate emissions were observed from the building openings (doorways, windows and vents);
- c. any corrective actions taken to minimize or eliminate the visible particulate emissions;

These reports shall be submitted to the Director of Central District Office, EPA by January 31 and July 31 of each year and shall cover the previous 6-month period.

- (3) The permittee shall submit quarterly deviation (excursion) reports that identify:
  - a. all deviations (excursions) of the following emission limitations, operational restrictions and/or control device operating parameter limitations that restrict the potential to emit (PTE) of any regulated air pollutant and have been detected by the monitoring, record keeping and/or testing requirements in this permit:
    - i. each period of time (start time and date/end time and date) when the pressure drop across any of the baghouses serving this emission unit was outside the acceptable range.
  - b. the probable cause of each deviation (excursion);
  - c. any corrective actions that were taken to remedy the deviations (excursions) or prevent future deviations (excursions); and
  - d. the magnitude and duration of each deviation (excursion).

If no deviations (excursions) occurred during a calendar quarter, the permittee shall submit a report that states that no deviations (excursions) occurred during the quarter.

The quarterly reports shall be submitted, electronically through Ohio EPA Air Services, 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 of Ohio EPA, CDO.

- (4) The permittee shall submit an annual Permit Evaluation Report (PER) to the Ohio EPA Central District Office by the due date identified in the Authorization section of this permit. The permit evaluation report shall cover a reporting period of no more than twelve months for each air contaminant source identified in this permit. It is recommended that the PER is submitted electronically through the Ohio EPA's "e-Business Center: Air Services" although PERs can be submitted via U.S. postal service or can be hand delivered.

f) Testing Requirements

- (1) 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 particulate emissions from dust collector exhausts emitted to the ambient air shall not exceed 10% opacity as a 6-minute average

Applicable Compliance Method: If required, compliance shall be determined through visible emission observations performed in accordance with 40 CFR, Part 60, Appendix A, Method 9.

- b. Emission Limitation: 0.001 gr/dscf for each baghouse serving this emission unit

Applicable Compliance Method: The permittee shall conduct, or have conducted, emission testing for this emissions unit in accordance with the following requirements within six months of commencing operation:

- i. The emission testing shall be conducted to demonstrate compliance with the outlet concentration of 0.001 gr/dscf limitation for each baghouse associated with this emissions unit.

The following test methods shall be employed to demonstrate compliance with the above emissions limitations:

- (a) Methods 1 through 4 from 40 CFR Part 60, Appendix A for velocity traverses, velocity and volumetric flow rates, gas analysis, and moisture content; and
- (b) Method 5 of 40 CFR Part 51, Appendix A for filterable PM.

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

- ii. The test(s) shall be conducted while the emissions unit is operating at or near its maximum capacity, unless otherwise specified or approved by Ohio EPA Central District Office.
- iii. Not later than 30 days prior to the proposed test date(s), the permittee shall submit an "Intent to Test" notification to the Ohio EPA Central District Office. 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 Central District Office's refusal to accept the results of the emission test(s).
- iv. Personnel from Ohio EPA Central District Office shall be permitted to witness the test(s), examine the testing equipment, and acquire data and information necessary to ensure that the operation of the emissions unit and the testing procedures provide a valid characterization of the emissions from the emissions unit and/or the performance of the control equipment.



**Final Permit-to-Install and Operate**  
Team Gemini Project Cardinal LLC COR3  
**Permit Number:** P0115308  
**Facility ID:** 0125094018  
**Effective Date:** 10/23/2013

- v. 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 Ohio EPA Central District Office within 30 days following completion of the test(s). The permittee may request additional time for the submittal of the written report, where warranted, with prior approval from the Ohio EPA Central District Office.

g) Miscellaneous Requirements

- (1) None.



**4. Emissions Unit Group -2 MW Engines: B001,B002,**

EU ID	Operations, Property and/or Equipment Description
B001	2,790 HP, 2.0 MW CHP stationary, spark ignition, lean burn, 4 cycle, internal combustion engine fired with landfill gas, biogas or natural gas
B002	2,790 HP, 2.0 MW CHP stationary, spark ignition, lean burn, 4 cycle, internal combustion engine fired with landfill gas, biogas or natural gas

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. b)(1)c., b)(1)d., b)(1)k., b)(2)h.

(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), as effective 11/30/01	<p>Nitrogen oxide (NO<sub>x</sub>) emissions shall not exceed 1.85 pounds per hour and 8.08 tons per year.</p> <p>Sulfur dioxide (SO<sub>2</sub>) emissions shall not exceed 1.85 pounds per hour and 8.08 tons per year.</p> <p>Volatile organic compound (VOC) emissions shall not exceed 1.17 pound per hour and 5.12 tons per year.</p> <p>Particulate matter less than 10 microns in diameter (PM<sub>10</sub>) emissions shall not exceed 0.16 pound per hour and 0.70 ton per year.</p>



	Applicable Rules/Requirements	Applicable Emissions Limitations/Control Measures
		<p>Particulate matter less than 2.5 microns in diameter (PM<sub>2.5</sub>) emissions shall not exceed 0.16 pound per hour and 0.70 ton per year.</p> <p>The emissions limitations established under OAC rule 3745-31-05(A)(3) are less stringent than the emission limitations established pursuant to OAC rule 3745-31-05(F).</p> <p>BAT has been determined to be utilization of lean burn technology, a catalytic oxidizer and selective catalyst reduction.</p> <p>See b)(2)a., b)(2)j, and c)(1) below.</p>
b.	OAC rule 3745-31-05(A)(3) , as effective 12/1/06	See b)(2)b. below.
c.	ORC rule 3704.03(T)	Emissions of carbon monoxide (CO) shall not exceed 2.92 tons per month, averaged over a twelve-month rolling period.
d.	OAC rule 3745-31-05(F) (Voluntary restrictions to avoid BAT and NSR)	<p>Carbon monoxide (CO) emissions shall not exceed 1.3 gram per horse power hour.</p> <p>Nitrogen oxide (NO<sub>x</sub>) emissions shall not exceed 0.3 gram per horse power hour.</p> <p>Particulate matter less than 10 microns in diameter (PM<sub>10</sub>) emissions shall not exceed 0.01 lb per MMBtu.</p> <p>Particulate matter less than 2.5 microns in diameter (PM<sub>2.5</sub>) emissions shall not exceed 0.01 lb per MMBtu.</p> <p>Sulfur dioxide (SO<sub>2</sub>) emissions shall not exceed 0.3 gram per horse power hour.</p> <p>Volatile organic compound (VOC) emissions shall not exceed 0.19 gram per horse power hour.</p>



	Applicable Rules/Requirements	Applicable Emissions Limitations/Control Measures
		<p>Formaldehyde emissions shall not exceed 0.06 pound per hour, individually, for B001 and B002.</p> <p>Visible particulate emissions shall not exceed 10% opacity as a 6-minute average.</p>
e.	OAC rule 3745-17-07(A)	See b)(2)b.ii. below.
f.	OAC rule 3745-17-11(B)(5)	The emission limitation specified by this rule is less stringent than the emission limitation established pursuant to OAC rule 3745-31-05(F).
g.	OAC rule 3745-18-06(G)	The emission limitation specified by this rule is less stringent than the emission limitation established pursuant to OAC rule 3745-31-05(F).
h.	<p>40 CFR Part 60, Subpart JJJJ</p> <p>In accordance with 40 CFR 60.4230, this emissions unit is subject to the New Source Performance Standards (NSPS) for Stationary Spark Ignition (SI) Internal Combustion Engines (ICE)..</p> <p>40 CFR 60.4233(e)</p> <p>Table 1 to Part 60, Subpart JJJJ</p>	<p>Emission standards for SI-ICE in Table 1 of 40 CFR, Part 60, Subpart JJJJ</p> <p>See Table 1 below, b)(2)d.</p> <p>The NO<sub>x</sub>, CO, and VOC emission limitations established pursuant to this subpart are less stringent than those established in OAC rule 3745-31-05(A)(3) and OAC rule 3745-31-05(F).</p>
i.	40 CFR, Part 63, Subpart ZZZZ	See b)(2)c. below.
j.	40 CFR, Part 60, Subpart WWW	Outlet concentration less than 20 ppmv (dry basis as hexane at 3% O <sub>2</sub> ) or 98% reduction by weight NMOC
k.	ORC 3704.03(F)	See b)(2)h. below.
l.	40 CFR, Part 63, Subpart AAAA	<p>Start up, shut down, malfunction plan and semi-annual reports in accordance with 40 CFR 60.757(f).</p> <p>See b)(2)i. below.</p>
m.	OAC rule 3745-110-03(F)	For engines greater than 2,000 HP, the NO <sub>x</sub> emissions limit specified by this rule is less stringent than the NO <sub>x</sub> limit from NSPS Subpart JJJJ.



(2) Additional Terms and Conditions

- a. The permittee has satisfied the Best Available Technology (BAT) requirements pursuant to OAC paragraph 3745-31-05(A)(3), as effective November 30, 2001, in this permit. On December 1, 2006, paragraph (A)(3) of OAC rule 3745-31-05 was revised to conform to ORC changes effective August 3, 2006 (S.B. 265 changes), such that BAT is no longer required by State regulations for NAAQS pollutants less than ten tons per year. However, that rule revision has not yet been approved by U.S. EPA as a revision to Ohio's State Implementation Plan (SIP). Therefore, until the SIP revision occurs and the U.S. EPA approves the revisions to OAC rule 3745-31-05, the requirement to satisfy BAT still exists as part of the federally-approved SIP for Ohio. Once U.S. EPA approves the December 1, 2006 version of 3745-31-05, then these emission limits/control measures no longer apply.
- b. This rule paragraph applies once U.S. EPA approves the December 1, 2006 version of OAC rule 3745-31-05 as part of the State Implementation Plan.
  - i. The Best Available Technology (BAT) requirements under OAC rule 3745-31-05(A)(3) do not apply to the NO<sub>x</sub>, PM10/PM2.5, SO<sub>2</sub> and VOC emissions from this air contaminant source since the potential to emit for NO<sub>x</sub>, PM10/PM2.5, SO<sub>2</sub> and VOC are less than 10 tons per year.
  - ii. Visible particulate emissions from the stack serving this emissions unit shall not exceed 10 percent opacity as a six-minute average, except as provided by rule.
- c. A new or reconstructed area source operating in compliance with Part 60 Subpart JJJJ is the demonstration of compliance for 40 CFR 63 Subpart ZZZZ.
- d. 40 CFR, Part 60, Subpart JJJJ Table 1

Engine type and fuel	Maximum engine power	Manufacture date	Emission standards <sup>a</sup>					
			g/HP-hr			ppmvd at 15% O <sub>2</sub>		
			NO <sub>x</sub>	CO	VOC <sup>d</sup>	NO <sub>x</sub>	CO	VOC <sup>d</sup>
Non-Emergency SI Natural Gas <sup>b</sup> and Non-Emergency SI Lean Burn LPG <sup>b</sup>	100≤HP<500	7/1/2008	2.0	4.0	1.0	160	540	86
		1/1/2011	1.0	2.0	0.7	82	270	60
Non-Emergency SI Lean Burn Natural Gas and LPG	500≤HP<1,350	1/1/2008	2.0	4.0	1.0	160	540	86
		7/1/2010	1.0	2.0	0.7	82	270	60
Non-Emergency SI Natural Gas and Non-Emergency SI Lean Burn LPG (except lean burn 500≤HP<1,350)	HP≥500	7/1/2007	2.0	4.0	1.0	160	540	86
		7/1/2010	1.0	2.0	0.7	82	270	60



Landfill/Digester Gas (except lean burn 500≤HP<1,350)	HP<500	7/1/2008	3.0	5.0	1.0	220	610	80
		1/1/2011	2.0	5.0	1.0	150	610	80
	HP≥500	7/1/2007	3.0	5.0	1.0	220	610	80
		7/1/2010	2.0	5.0	1.0	150	610	80
Landfill/Digester Gas Lean Burn	500≤HP<1,350	1/1/2008	3.0	5.0	1.0	220	610	80
		7/1/2010	2.0	5.0	1.0	150	610	80
Emergency	25<HP<130	1/1/2009	<sup>c</sup> 10	387	N/A	N/A	N/A	N/A
	HP≥130		2.0	4.0	1.0	160	540	86

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

60.4236(b)	Installation deadlines
60.4243(b)	Compliance Requirements

- f. The stationary spark ignition (SI) internal combustion engine (ICE) is subject to and shall be operated in compliance with the requirements of 40 CFR Part 60, Subpart JJJJ, the standards of performance for stationary SI ICE.

[40 CFR 60.4230(a)]

- g. The stationary SI ICE has been or shall be purchased certified by the manufacturer to emission standards as stringent as those identified in 40 CFR 60.4233(e) and found in Table 1 of Part 60, Subpart JJJJ for lean burn engines greater than or equal to 1,350 HP, manufactured on or after 7/1/10, and burning landfill or digester gas.

[40 CFR 60.4233(e)] and [40 CFR 60.4231(e)]

- h. Modeling to demonstrate compliance with, the “Toxic Air Contaminant Statute”, ORC 3704.03(F)(4)(b), was not necessary because the emissions units maximum annual emissions for each toxic air contaminant, as defined in OAC rule 3745-114-01, will be less than 1.0 ton per year. OAC Chapter 3745-31 requires permittees to apply for and obtain a new or modified PTI prior to making a “modification” as defined by OAC rule 3745-31-01. The permittee is hereby advised that changes in the composition of the materials, or use of new materials, that would cause the emissions of any toxic air contaminant to increase to above 1.0 ton per year may require the permittee to apply for and obtain a new Permit to Install.



- i. The engines act as either a control device for landfill gas or a gas treatment system for a landfill and become subject to 40 CFR Part 63, Subpart AAAA when the engines combust landfill gas.
- j. The catalytic oxidizer (cat-ox) and the selective catalyst reduction (SCR) shall be installed, operated and maintained in accordance with the manufacturer's recommendations, instructions, and operating manuals, with any modifications deemed necessary by the permittee.

c) Operational Restrictions

- (1) The internal combustion engine shall operate using lean burn technology.
- (2) The stationary SI ICE shall be installed, operated, and maintained according to the manufacturer's specifications, written instructions, and procedures over the entire life of the engine. The permittee shall operate and maintain the stationary SI ICE to achieve the emission standards identified in 40 CFR 60.4233(e) and found in Table 1 of NSPS Subpart JJJJ over the entire life of the engine. Any air-to-fuel ratio controllers shall be set by the manufacturer and/or according to the operations manual, to ensure proper operation of the engine and control device and to minimize emissions.

[40 CFR 60.4234], [40 CFR 60.4243(b)(1)], and [40 CFR 60.4243(g)]

- (3) The permittee shall burn only natural gas, treated landfill gas or biogas in these emission units. There shall be no by-pass for the release of any gases to the atmosphere.
- (4) The permittee shall install, 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 when the internal combustion engine is not operating.
- (5) The flow rate to the internal combustion engines shall not exceed 600 cfm of landfill gas and/or biogas and shall not exceed 270 cfm of natural gas.
- (6) The minimum allowable average 3-hour block temperature of the engine combustion chamber shall not be more than 28 degrees C (82.4 degrees Fahrenheit) lower than the average combustion chamber temperature during the most recent emission test conducted to demonstrate compliance with the applicable emission limitations in 40 CFR Part 60 § 60.752(b)(2)(iii)(C).
- (7) The permittee shall comply with the applicable requirements of 40 CFR, Part 60, Subpart JJJJ, including the following sections:

60.4234	Duration of compliance with the emissions standards
60.4243(b)	Maintenance Requirements
60.4243(g)	Air-to-Fuel (ATR) controllers



- (8) The quality of the fuel burned in this emissions unit shall meet a sulfur content that is sufficient to comply with the allowable sulfur dioxide emission limitation specified in this permit.

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

- (1) The permittee shall perform daily checks, when the emissions unit is in operation and, when the weather conditions allow, for any visible particulate emissions from the exhaust stack serving this emissions unit. The presence or absence of any visible emissions shall be noted in an operations log. If visible emissions are observed from the stack, the permittee shall also note the following in the operations log:
  - a. the location and color of the emissions;
  - b. the total duration of any visible emissions incident; and
  - c. any corrective actions taken to eliminate the visible emissions.

If visible emissions are present, a visible emissions incident has occurred. The observer does not have to document the exact start and end times for the visible emissions incident. The observer may indicate that the visible emissions incident was continuous during the observation period (or, if known, continuous during the operation of the emissions unit). With respect to the documentation of corrective actions, the observer may specify the minor corrective actions that were taken to ensure that the emissions unit returned to normal operating conditions, and specify the corrective actions that were taken to eliminate abnormal visible emissions.

- (2) The permittee shall record the dates and times when the internal combustion engine operates as a landfill gas control device.
- (3) The permittee shall install, calibrate and maintain devices that monitor and record landfill gas flow, biogas flow and natural gas flow to the internal combustion engine. The gas flow rate measuring devices shall record the flow to the control device at least every 15 minutes.
- (4) The permittee shall monitor and record the downtime of each engine, individually.
- (5) The permittee shall document any deviation from the maximum allowable gas flow rate to the internal combustion engines.
- (6) The permittee shall document each day when a fuel other than natural gas, treated landfill gas or biogas was burned in the internal combustion engines.
- (7) The permittee shall install, calibrate and maintain devices that monitor and record the combustion chamber temperature of the internal combustion engine. The combustion chamber monitoring devices shall collect and record the average combustion temperature for each 3-hour block of time the engine is operating.



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

60.4243(b)(2)(ii)	Keeping a maintenance plan and records of conducted maintenance
60.4245(a)	Records required

- (9) The permittee shall maintain the manufacturer’s certification on site or at a central location for all facility ICE and it shall be made available for review upon request. If the manufacturer’s certification is not kept on site, the permittee shall maintain a log for the location of each ICE and it shall identify the agency-assigned emissions unit number, the manufacturer’s identification number, and the identification number of the certificate. The manufacturer’s operations manual shall be maintained at the same location as the ICE.

[40 CFR 60.4243(b)(1)]

- (10) The permittee shall maintain the following records and make them available upon request:

- a. all notifications submitted to comply with and all documentation supporting compliance with Part 60 Subpart JJJJ;
- b. records of all maintenance conducted on the engine;
- c. the certification from the manufacturer, documenting that the engine is certified to meet the emission standards identified in 40 CFR 60.4231(e); and
- d. the information identified in 40 CFR parts 90, 1048, 1054, and/or 1060 that is required to be provided by the manufacturer to the operator/owner, as applicable to the model year and horsepower of the engine.

[40 CFR 60.4245(a)]

e) Reporting Requirements

- (1) Unless other arrangements have been approved by the Director, all notifications and reports shall be submitted through the Ohio EPA's eBusiness Center: Air Services online web portal.
- (2) The permittee shall submit deviation (excursion) reports that identify each day when a fuel other than treated landfill gas, natural gas or biogas was burned in this emission unit. Each report shall be submitted within 30 days after the deviation occurs.
- (3) The permittee shall submit semiannual written reports that identify:
  - a. all days during which any visible particulate emissions were observed from the stack serving this emissions unit;



- b. any corrective actions taken to minimize or eliminate the visible particulate emissions;
- c. all days and durations during which the gas flow rate to the internal combustion engine exceeded the maximum gas flow rate; and
- d. all days when the average 3-hour block temperature of the engine combustion chamber was more than 28 degrees C (82.4 F) lower than the average combustion chamber temperature during the most recent emission test that demonstrated compliance with emission limitations in 40 CFR, Part 60.752(B)(2)(iii)(C).

These reports shall be submitted to the Director of Central District Office, EPA by January 31 and July 31 of each year and shall cover the previous 6-month period.

- (4) The permittee shall comply with the applicable requirements of 40 CFR, Part 60, Subpart JJJJ, including but not limited to the following sections:

60.4245(c)	Initial Notification
60.4245(d)	Performance Test Report

- (5) The permittee shall submit an annual Permit Evaluation Report (PER) to the Ohio EPA Central District Office by the due date identified in the Authorization section of this permit. The permit evaluation report shall cover a reporting period of no more than twelve months for each air contaminant source identified in this permit. It is recommended that the PER is submitted electronically through the Ohio EPA's "e-Business Center: Air Services" although PERs can be submitted via U.S. postal service or can be hand delivered.

f) Testing Requirements

- (1) 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 particulate emissions shall not exceed 10% opacity as a 6-minute average

Applicable Compliance Method: If required, compliance shall be determined through visible emission observations performed in accordance with 40 CFR, Part 60, Appendix A, Method 9.

- b. Emission Limitation: 0.062 pound PE per MMBtu of actual heat input

Applicable Compliance Method: If required, compliance with the lb/MMBtu PE limitation shall be determined in accordance with Method 5 of 40 CFR, Part 60, Appendix A.



- c. Emission Limitation: Carbon monoxide (CO) emissions shall not exceed 1.3 gram per horse power hour; nitrogen oxide (NO<sub>x</sub>) emissions shall not exceed 0.3 gram per horse power hour; particulate matter less than 10 microns in diameter (PM<sub>10</sub>) emissions shall not exceed 0.01 lb per MMBtu; particulate matter less than 2.5 microns in diameter (PM<sub>2.5</sub>) emissions shall not exceed 0.01 lb per MMBtu; sulfur dioxide (SO<sub>2</sub>) emissions shall not exceed 0.3 gram per horse power hour; volatile organic compound (VOC) emissions shall not exceed 0.19 gram per horse power hour; and formaldehyde emissions shall not exceed 0.23 pound per hour, individually, for B001 and B002

Applicable Compliance Method: The permittee shall conduct, or have conducted, emission testing for this emissions unit in accordance with the following requirements within six months of commencing operation:

- i. Emission testing shall be conducted to demonstrate compliance with the allowable emission rates for NO<sub>x</sub>, CO, SO<sub>2</sub>, PM, formaldehyde, and VOC.

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

- (a) NO<sub>x</sub> – Methods 1-4 and 7; or 7E of 40 CFR, Part 60, Appendix A;
- (b) CO – Methods 1-4 and 10 of 40 CFR, Part 60, Appendix A;
- (c) VOC – Methods 1-4 and 18 or Method 25A of 40 CFR, Part 60, Appendix A or Method 320 of 40 CFR, Part 63;
- (d) SO<sub>2</sub> – Methods 1-4 and 6C of 40 CFR Part 60, Appendix A;
- (e) PM – Methods 1-4 and 5 of 40 CFR Part 60, Appendix A; and
- (f) Formaldehyde – Methods 1-4 and 320 of 40 CFR Part 60, Appendix A.

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

- ii. The test(s) shall be conducted while the emissions unit is operating at or near its maximum capacity, and combusting either landfill gas or digester gas, unless otherwise specified or approved by Ohio EPA Central District Office.
- iii. Not later than 30 days prior to the proposed test date(s), the permittee shall submit an "Intent to Test" notification to the Ohio EPA Central District Office. 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 Central District Office's refusal to accept the results of the emission test(s).



- iv. Personnel from the Ohio EPA Central District Office shall be permitted to witness the test(s), examine the testing equipment, and acquire data and information necessary to ensure that the operation of the emissions unit and the testing procedures provide a valid characterization of the emissions from the emissions unit and/or the performance of the control equipment.
- v. 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 Ohio EPA Central District Office within 30 days following completion of the test(s). The permittee may request additional time for the submittal of the written report, where warranted, with prior approval from the Ohio EPA Central District Office.

- (2) 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

- (3) If the natural gas engine was purchased without an EPA certificate of conformity, the engine will need to meet the performance testing requirements of 40 CFR 60.4243(b)(2)(ii) and the permittee will be required to conduct an initial performance test and subsequent performance tests every 8,760 hours of operation or 3 years whichever comes first, to demonstrate compliance with the emission limits from Part 60 Subpart JJJJ.

[60.4243(b)(1) and (2)]

g) Miscellaneous Requirements

- (1) None.



**5. Emissions Unit Group -65 ton per hour lines: P001,P002,**

EU ID	Operations, Property and/or Equipment Description
P001	Line 1 - 65 tons per hour
P002	Line 2 - 65 tons per hour

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. b)(1)c.

(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)	The emission limitations established under this rule are less stringent than the emission limitations established pursuant to OAC 3745-31-05(F).  See b)(2)a. below.
b.	OAC rule 3745-31-05(A)(3), as effective 12/1/06	See b)(2)b. below.
c.	OAC rule 3745-31-05(F) (Voluntary restrictions to avoid BAT and NSR)	0.001 grain per dry standard cubic foot of exhaust gases (gr/dscf) for PM <sub>2.5</sub> /PM <sub>10</sub> emissions from each material handling baghouse associated with this emission unit.  0.002 grain per dry standard cubic foot of exhaust gases (gr/dscf) for PM <sub>2.5</sub> /PM <sub>10</sub> emissions from each equipment component (process)



	Applicable Rules/Requirements	Applicable Emissions Limitations/Control Measures
		baghouse associated with this emission unit.  Visible particulate emission from dust collector exhausts emitted directly to the ambient air shall not exceed 10% opacity as a 6-minute average.  There shall be no visible particulate emissions from building openings (doorways, windows or vents).  See c)(1) below.
d.	OAC rule 3745-17-07(A)(1)	The visible emission limitation specified by this rule is less stringent than the visible emission limitation established pursuant to OAC rule 3745-31-05(F).
e.	OAC rule 3745-17-08	The emissions limitation specified by this rule is less stringent than the emission limitations established pursuant to OAC rule 3745-31-05(F).
f.	OAC rule 3745-17-11(B)(1)	The PE limitation established under this rule is less stringent than the PE limitation established pursuant to OAC 3745-31-05(F).

(2) Additional Terms and Conditions

- a. The permittee has satisfied the Best Available Technology (BAT) requirements pursuant to OAC paragraph 3745-31-05(A)(3), as effective November 30, 2001, in this permit. On December 1, 2006, paragraph (A)(3) of OAC rule 3745-31-05 was revised to conform to ORC changes effective August 3, 2006 (S.B. 265 changes), such that BAT is no longer required by State regulations for NAAQS pollutants less than ten tons per year. However, that rule revision has not yet been approved by U.S. EPA as a revision to Ohio's State Implementation Plan (SIP). Therefore, until the SIP revision occurs and the U.S. EPA approves the revisions to OAC rule 3745-31-05, the requirement to satisfy BAT still exists as part of the federally-approved SIP for Ohio. Once U.S. EPA approves the December 1, 2006 version of 3745-31-05, then these emission limits/control measures no longer apply.
- b. This rule paragraph applies once U.S. EPA approves the December 1, 2006 version of OAC rule 3745-31-05 as part of the State Implementation Plan.



The Best Available Technology (BAT) requirements under OAC rule 3745-31-05(A)(3) do not apply to the PM<sub>10</sub>/PM<sub>2.5</sub> emissions from this air contaminant source since the potential to emit for PM<sub>10</sub>/PM<sub>2.5</sub> is less than 10 tons per year.

c) Operational Restrictions

- (1) The permittee shall install and operate a filtration system, for the control of particulate emissions, and shall use the baghouse whenever this emissions unit is in operation. The baghouse shall be operated and maintained in accordance with the manufacturer's recommendations, instructions, and/or operating manual(s), with any modifications deemed necessary by the permittee.

d) Monitoring and/or Recordkeeping Requirements

- (1) The permittee shall properly install, operate, and maintain equipment to continuously monitor the pressure drop, in inches of water, across each baghouse when the controlled emissions unit is in operation, including periods of startup and shutdown. The permittee shall record the pressure drop across each baghouse and bin vent filter on a daily basis.
- (2) The monitoring equipment shall be installed, calibrated, operated, and maintained in accordance with the manufacturer's recommendations, instructions, and operating manual(s). The acceptable pressure drop range shall be based upon the manufacturer's specifications, which is 1.5 to 6 inches of water for each of the baghouses serving this emissions unit.
- (3) Whenever the monitored value for the pressure drop deviates from the limit or range 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.
- (4) 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 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:
  - a. A description of the corrective action;



- b. The date corrective action was completed;
- c. The date and time the deviation ended;
- d. The total period of time (in minutes) during which there was a deviation;
- e. The pressure drop readings immediately after the corrective action was implemented; and
- f. 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.

This range or limit on the pressure drop across each baghouse is effective for the duration of this permit, unless revisions are requested by the permittee and approved in writing by the appropriate Ohio EPA Central District Office. The permittee may request revisions to the permitted limit or range for the pressure drop based upon information obtained during future testing that demonstrate compliance with the allowable particulate emission rate for the controlled emissions unit. In addition, approved revisions to the range or 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 properly install, operate and maintain equipment to continuously monitor the air flow for the material handling dust collectors, when the controlled emissions unit is in operation, including periods of startup and shutdown. The permittee shall record the air flow rate on a daily basis.
  - (6) The permittee shall perform daily checks, when the emissions unit is in operation and, when the weather conditions allow, for any visible particulate emissions from the exhaust stack and for any visible emissions of fugitive dust from the egress points (i.e., building windows, doors, roof monitors, etc.) serving this emissions unit. The presence or absence of any visible emissions shall be noted in an operations log. If visible emissions are observed from any points of capture and/or the stack, the permittee shall also note the following in the operations log:
    - a. the location and color of the emissions;
    - b. the total duration of any visible emissions incident; and
    - c. any corrective actions taken to eliminate the visible emissions.
- e) Reporting Requirements
- (1) Unless other arrangements have been approved by the Director, all notifications and reports shall be submitted through the Ohio EPA's eBusiness Center: Air Services online web portal.
  - (2) The permittee shall submit semiannual written reports that identify:



- a. all days during which any visible particulate emissions were observed from the stack serving this emissions unit;
- b. all days during which any visible particulate emissions were observed from the building openings (doorways, windows and vents);
- c. any corrective actions taken to minimize or eliminate the visible particulate emissions;

These reports shall be submitted to the Director of Central District Office, EPA by January 31 and July 31 of each year and shall cover the previous 6-month period.

- (3) The permittee shall submit quarterly deviation (excursion) reports that identify:
- a. all deviations (excursions) of the following emission limitations, operational restrictions and/or control device operating parameter limitations that restrict the potential to emit (PTE) of any regulated air pollutant and have been detected by the monitoring, record keeping and/or testing requirements in this permit:
    - i. each period of time (start time and date/end time and date) when the pressure drop across any of the baghouses serving this emission unit was outside the acceptable range; and
  - b. the probable cause of each deviation (excursion);
  - c. any corrective actions that were taken to remedy the deviations (excursions) or prevent future deviations (excursions); and
  - d. the magnitude and duration of each deviation (excursion).

If no deviations (excursions) occurred during a calendar quarter, the permittee shall submit a report that states that no deviations (excursions) occurred during the quarter.

The quarterly reports shall be submitted, electronically through Ohio EPA Air Services, 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 of Ohio EPA, CDO.

- (4) The permittee shall submit an annual Permit Evaluation Report (PER) to the Ohio EPA Central District Office by the due date identified in the Authorization section of this permit. The permit evaluation report shall cover a reporting period of no more than twelve months for each air contaminant source identified in this permit. It is recommended that the PER is submitted electronically through the Ohio EPA's "e-Business Center: Air Services" although PERs can be submitted via U.S. postal service or can be hand delivered.

f) Testing Requirements



- (1) 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 particulate emissions from dust collector exhausts emitted to the ambient air shall not exceed 10% opacity as a 6-minute average  
  
Applicable Compliance Method: If required, compliance shall be determined through visible emission observations performed in accordance with 40 CFR, Part 60, Appendix A, Method 9.
  - b. Emission Limitation: There shall be no visible particulate emissions from building openings (doorways, windows, vents).  
  
Applicable Compliance Method: If required, compliance shall be determined through visible emission observations performed in accordance with 40 CFR, Part 60, Appendix A, Method 22.
  - c. Emission Limitations: 0.001 gr/dscf for each baghouse serving the material handling, and 0.002 gr/dscf for each baghouse serving the equipment component (process)  
  
Applicable Compliance Method: The permittee shall conduct, or have conducted, emission testing for these emissions units in accordance with the following requirements within six months of commencing operation:
    - i. The emission testing shall be conducted to demonstrate compliance with the outlet concentration of 0.001 gr/dscf limitation for each material handling baghouse and 0.002 gr/dscf for each baghouse serving the process equipment associated with these emission units.  
The following test methods shall be employed to demonstrate compliance with the above emissions limitations:
      - (a) Methods 1 through 4 from 40 CFR Part 60, Appendix A for velocity traverses, velocity and volumetric flow rates, gas analysis, and moisture content; and
      - (b) Method 5 of 40 CFR Part 51, Appendix A for filterable PM.  
  
Alternative U.S. EPA approved test methods may be used with prior approval from the Ohio EPA.
    - ii. The test(s) shall be conducted while the emissions unit is operating at or near its maximum capacity, unless otherwise specified or approved by Ohio EPA Central District Office.
    - iii. Not later than 30 days prior to the proposed test date(s), the permittee shall submit an "Intent to Test" notification to the Ohio EPA Central District Office. The "Intent to Test" notification shall describe in detail the proposed test methods and procedures, the emissions unit operating



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Team Gemini Project Cardinal LLC COR3  
**Permit Number:** P0115308  
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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 Central District Office's refusal to accept the results of the emission test(s).

- iv. Personnel from the appropriate Ohio EPA Central District Office shall be permitted to witness the test(s), examine the testing equipment, and acquire data and information necessary to ensure that the operation of the emissions unit and the testing procedures provide a valid characterization of the emissions from the emissions unit and/or the performance of the control equipment.
- v. 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 Ohio EPA Central District Office within 30 days following completion of the test(s). The permittee may request additional time for the submittal of the written report, where warranted, with prior approval from the Ohio EPA Central District Office.

g) Miscellaneous Requirements

- (1) None.