



State of Ohio Environmental Protection Agency

Street Address:

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122 S. Front Street  
Columbus, OH 43215

TELE: (614) 644-3020 FAX: (614) 644-2329

Mailing Address:

Lazarus Gov. Center  
P.O. Box 1049  
Columbus, OH 43216-1049

**RE: FINAL PERMIT TO INSTALL  
DELAWARE COUNTY  
Application No: 01-01301  
Fac ID: 0121010269**

**DATE: 2/16/2006**

Mid Ohio Cremation Service  
George Rodman  
92 North Sandusky Street  
Delaware, OH 43015

**CERTIFIED MAIL**

	TOXIC REVIEW
	PSD
	SYNTHETIC MINOR
	CEMS
	MACT
	NSPS
	NESHAPS
	NETTING
	MAJOR NON-ATTAINMENT
	MODELING SUBMITTED
	GASOLINE DISPENSING FACILITY

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

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

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

Environmental Review Appeals Commission  
309 South Fourth Street, Room 222  
Columbus, Ohio 43215

Sincerely,

*Michael W. Ahern*  
Michael W. Ahern, Manager  
Permit Issuance and Data Management Section  
Division of Air Pollution Control

CC: USEPA

CDO



**Permit To Install  
Terms and Conditions**

**Issue Date: 2/16/2006  
Effective Date: 2/16/2006**

**FINAL PERMIT TO INSTALL 01-01301**

Application Number: 01-01301  
Facility ID: 0121010269  
Permit Fee: **\$800**  
Name of Facility: Mid Ohio Cremation Service  
Person to Contact: George Rodman  
Address: 92 North Sandusky Street  
Delaware, OH 43015

Location of proposed air contaminant source(s) [emissions unit(s)]:  
**1510 West William Street  
Delaware, Ohio**

Description of proposed emissions unit(s):  
**Permit for the installation of two crematoriums**

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

This permit is granted subject to the conditions attached hereto.

Ohio Environmental Protection Agency

Director

## **Part I - GENERAL TERMS AND CONDITIONS**

### **A. Permit to Install General Terms and Conditions**

#### **1. Compliance Requirements**

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

#### **2. Reporting Requirements**

The permittee shall submit required reports in the following manner:

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

#### **3. Records Retention Requirements**

Each record of any monitoring data, testing data, and support information required pursuant to this permit shall be retained for a period of five years from the date the record was created. Support information shall include, but not be limited to, all calibration and maintenance records and all original strip-chart recordings for continuous monitoring instrumentation, and copies of all reports required by this permit. Such records may be maintained in computerized form.

#### **4. Inspections and Information Requests**

The Director of the Ohio EPA, or an authorized representative of the Director, may, subject to the safety requirements of the permittee and without undue delay, enter upon the premises of this source at any reasonable time for purposes of making inspections, conducting tests, examining records or reports pertaining to any emission of air contaminants, and determining compliance with any applicable State air pollution laws and

regulations and the terms and conditions of this permit. The permittee shall furnish to the Director of the Ohio EPA, or an authorized representative of the Director, upon receipt of a written request and within a reasonable time, any information that may be requested to determine whether cause exists for modifying, reopening or revoking this permit or to determine compliance with this permit. Upon verbal or written request, the permittee shall also furnish to the Director of the Ohio EPA, or an authorized representative of the Director, copies of records required to be kept by this permit.

**5. Scheduled Maintenance/Malfunction Reporting**

Any scheduled maintenance of air pollution control equipment shall be performed in accordance with paragraph (A) of OAC rule 3745-15-06. The malfunction of any emissions units or any associated air pollution control system(s) shall be reported to the appropriate Ohio EPA District Office or local air agency in accordance with paragraph (B) of OAC rule 3745-15-06. Except as provided in that rule, any scheduled maintenance or malfunction necessitating the shutdown or bypassing of any air pollution control system(s) shall be accompanied by the shutdown of the emissions unit(s) that is (are) served by such control system(s).

**6. Permit Transfers**

Any transferee of this permit shall assume the responsibilities of the prior permit holder. The appropriate Ohio EPA District Office or local air agency must be notified in writing of any transfer of this permit.

**7. Air Pollution Nuisance**

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

**8. Termination of Permit to Install**

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

**9. Construction of New Sources(s)**

The proposed emissions unit(s) shall be constructed in strict accordance with the plans and application submitted for this permit to the Director of the Ohio Environmental Protection Agency. There may be no deviation from the approved plans without the express, written approval of the Agency. Any deviations from the approved plans or the above conditions

may lead to such sanctions and penalties as provided under Ohio law. Approval of these plans does not constitute an assurance that the proposed facilities will operate in compliance with all Ohio laws and regulations. Additional facilities shall be installed upon orders of the Ohio Environmental Protection Agency if the proposed sources cannot meet the requirements of this permit or cannot meet applicable standards.

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

**10. Public Disclosure**

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

**11. Applicability**

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

**12. Best Available Technology**

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

**13. Source Operation and Operating Permit Requirements After Completion of Construction**

This facility is permitted to operate each source described by this Permit to Install for a period of up to one year from the date the source commenced operation. This permission to operate is granted only if the facility complies with all requirements contained in this

permit and all applicable air pollution laws, regulations, and policies. Pursuant to OAC Chapter 3745-35, the permittee shall submit a complete operating permit application within ninety (90) days after commencing operation of the emissions unit(s) covered by this permit.

#### **14. Construction Compliance Certification**

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

#### **15. Fees**

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

### **B. Permit to Install Summary of Allowable Emissions**

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

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

<u>Pollutant</u>	<u>Tons Per Year</u>
PE	1.32
SO <sub>2</sub>	1.66
CO	6.58
TOC	2.0
NO <sub>x</sub>	2.0

**PART II - SPECIAL TERMS AND CONDITIONS FOR SPECIFIC EMISSIONS UNIT(S)**

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

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

<u>Operations, Property, and/or Equipment</u>	<u>Applicable Rules/Requirements</u>	<u>Applicable Emissions Limitations/Control Measures</u>
N001 - B&L 150 lb/hr Human Crematory Model number N-20-M Serial Number 2437394	OAC rule 3745-31-05(A)(3)	Particulate Emissions (PE) shall not exceed 0.66 ton per year.  Nitrogen Oxide (NOx) emissions shall not exceed 0.23 pound per hour and 1.0 ton per year.  Carbon Monoxide (CO) emissions shall not exceed 0.75 pound per hour and 3.29 tons per year.  Sulfur Dioxide (SO2) emissions shall not exceed 0.19 pound per hour and 0.83 ton per year.  Total Organic Compound (TOC) emissions shall not exceed 0.23 pound per hour and 1.0ton per year.  Visible particulate emissions from the stack shall not exceed 5% opacity as a six-minute average,
	OAC rule 3745-17-07(A)	The visual emission limitation specified by this rule is less stringent than the emission limitation established pursuant to OAC rule 3745-31-05(A)(3).
	OAC rule 3745-17-09(B)	PE shall not exceed 0.1 pound per 100 pounds charged.
	OAC rule 3745-17-09(C)	See term and condition A.2.b

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

- 2.a** The above hourly and annual emission limitations were established to reflect the potential to emit for the emission unit. Therefore, no additional monitoring, recordkeeping and/or reporting other than the parametric monitoring of the secondary combustion chamber is necessary to ensure compliance with these limits.
- 2.b** The human cremation multiple chamber incinerator, including all associated equipment and grounds, shall be designed, operated and maintained so as to prevent the emission of objectionable odors.

## **B. Operational Restrictions**

1. The permittee shall only burn human remains and associated paper/wood products waste in this emissions unit. The paper products must be free from all plastics and all other foreign materials, and the wood products must not be preservative-treated wood and also must not contain any foreign materials. No plastic bags or other types of plastic materials shall be burned, except for containers containing no more than 0.5 percent by weight of chlorinated plastics that have been used as a container for the remains being cremated.
2. The human cremation multiple chamber incinerator, including all associated equipment and monitoring equipment, shall be installed, operated, and maintained in accordance with the manufacturer's recommendations, instructions and operating manual(s).
3. The permittee shall not charge the crematorium with "infectious waste" as defined in OAC rule 3745-75-01 (C) (5).
4. The crematory shall not be charged until the temperature of the secondary combustion chamber reaches 1200 degrees Fahrenheit. The secondary chamber shall allow for a 1.0 second (or more) retention time at 1200 degrees Fahrenheit.
5. During a cremation burn, the temperature of the secondary combustion chamber shall be maintained at a minimum of 1200 degrees Fahrenheit.
6. The crematorium shall not be operated unless the temperature monitoring devices are operating properly.
7. The charge rate shall not exceed 150 pounds of human waste per hour.
8. The stack shall be designed to minimize any building down wash impacts from emissions and/or odors on employees and nearby residences. The design shall meet good engineering practices so as not to result in excessive concentrations of air contaminants and/or odors in locations at, near or, in such a configuration, as to affect any air intake for heating and cooling of buildings or at operable windows or doors. The initial design of the stack serving this emissions unit shall be a minimum height of 28 feet above ground and have a minimum air flow rate of 2000 ACFM.

9. The permittee shall employ only natural gas as fuel in this emissions unit.
10. This crematorium shall be operated only by properly trained personnel. A copy of all the training records for each operator shall be maintained on file as long as that operator is employed for that job and shall be immediately available to the Central District Office upon request.

**C. Monitoring and/or Recordkeeping Requirements**

1. The permittee shall operate and maintain a continuous temperature monitor and recorder which measures and records the secondary combustion chamber temperature, in degrees Fahrenheit, during each cremation cycle. The temperature monitor and recorder shall be installed, calibrated, operated and maintained in accordance with the manufacturer's recommendations. Any modifications to the manufacturer's recommendations, deemed necessary by the permittee, shall not be made without the prior written consent of the Central District Office. The monitoring and recording devices shall be capable of accurately measuring the desired parameter.
2. The permittee shall maintain a log of all periods of time when the emissions unit is used to combust waste types other than those permitted in term and condition B.1.
3. A logbook shall be maintained for each continuous temperature and/or opacity monitoring system installed on this crematorium to document all activities involving the monitoring systems. Appropriate records should include, as a minimum, preventive maintenance, quality assurance and corrective action activities. The logbook shall be kept on file for a period of 5 years and shall be made available for inspection by the Ohio EPA or its authorized representatives at any reasonable time.
4. 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 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, the permittee shall also note the following in the operations log:
  - a. The color of the emissions;
  - b. The total duration of any visible emission incident; and
  - c. Any corrective actions taken to eliminate the visible emissions
5. The permittee shall collect and record the following information each day:
  - a. A log of the downtime for the temperature monitoring and/or recording equipment, when the associated emissions unit was in operation; and
  - b. All periods of time during which the temperature of the exhaust gases from the incinerator, when the emissions unit was in operation, was below the minimum secondary combustion chamber exhaust gas temperature of 1200 degrees Fahrenheit as specified above

6. A written log shall be kept to record the estimated body and container weights and the cremation time. Alternative arrangements may be approved by the Director provided they can be shown to be of equivalent effectiveness as a method of regulating flow into the crematorium and generating a permanent record of charging rates.
7. The permittee shall perform monthly inspections of the crematorium using preventive maintenance procedures recommended by the equipment manufacturer. Each inspection shall include a written report identifying any needed repairs to the unit. If repairs are needed, the crematorium shall not be operated if the operation would result in any exceedance of the emission limits or terms and conditions detailed in this permit. These repairs shall be completed within 30 days of the inspection. If a time period longer than 30 days is needed to complete the repairs, the Central District Office shall be notified in writing. This notice shall list the repairs needed and the reason(s) the repairs could not be accomplished within the required time period. All inspection and repair reports shall be kept by the permittee for a period of 5 years and shall be made available to the Central District Office upon request.
8. The permit to install for this emissions unit (N001) was evaluated based on the information and the design parameters of the emissions unit's exhaust system, as specified by the permittee in the permit to install application and subsequent discussions with the manufacturer Matthews Cremation Services. The Ohio EPA's "Review of New Sources of Air Toxic Emissions" policy ("Air Toxic Policy") was applied for the pollutant mercury emitted by this emissions unit using data from the permit to install application, Matthews Cremation Services, USEPA, and the SCREEN 3.0 model (or other Ohio EPA approved model). The predicted 1-hour maximum ground-level concentration from the use of the SCREEN 3.0 model was compared to the Maximum Acceptable Ground-Level Concentration (MAGLC). The following summarizes the results of the modeling for the "worst case" pollutant(s):

Pollutant: Mercury (Hg)  
TLV (mg/m<sup>3</sup>): 0.025  
Maximum Hourly Emission Rate (lbs/hr): 0.00329  
Predicted 1-Hour Maximum Ground-Level Concentration (ug/m<sup>3</sup>): 0.077  
MAGLC (ug/m<sup>3</sup>): 1.2

9. Physical changes to or changes in the method of operation of the emissions unit after its installation or modification could affect the parameters used to determine whether or not the "Air Toxic Policy" is satisfied. Consequently, prior to making a change that could impact such parameters, the permittee shall conduct an evaluation to determine that the "Air Toxic Policy" will still be still satisfied. If, upon evaluation, the permittee determines that the "Air Toxic Policy" will not be satisfied, the permittee will not make the change. Changes that can affect the parameters used in applying the "Air Toxic Policy" include the following:
  - a. changes in the composition of the materials used (typically for coatings or cleanup materials), or the use of new materials, that would result in the emission of a compound with a lower Threshold Limit Value (TLV), as indicated in the most recent

version of the handbook entitled "American Conference of Governmental Industrial Hygienists (ACGIH)," than the lowest TLV value previously modeled;

- b. changes in the composition of the materials, or use of new materials, that would result in an increase in emissions of any pollutant with a listed TLV that was proposed in the application and modeled; and
- c. physical changes to the emissions unit or its exhaust parameters (e.g., increased/decreased exhaust flow, changes in stack height, changes in stack diameter, etc.); exhaust stack to be at least 28 feet above ground level and 18 inches in diameter and flow rate of at least 2000 CFM and temperature of 900 degrees Fahrenheit.

If the permittee determines that the "Air Toxic Policy" will be satisfied for the above changes, the Ohio EPA will not consider the change(s) to be a "modification" under OAC rule 3745-31-01 solely due to the emissions of any type of toxic air contaminant not previously emitted, and a modification of the existing permit to install will not be required, even if the toxic air contaminant emissions are greater than the de minimis level in OAC rule 3745-15-05. If the change(s) is (are) defined as a modification under other provisions of the modification definition, then the permittee shall obtain a final permit to install prior to the change.

- 10. The permittee shall collect, record, and retain the following information when it conducts evaluations to determine that the changed emissions unit will still satisfy the "Air Toxic Policy:"
  - a. a description of the parameters changed (composition of materials, new pollutants emitted, change in stack/exhaust parameters, etc.);
  - b. documentation of its evaluation and determination that the changed emissions unit still satisfies the "Air Toxic Policy"; and
  - c. where computer modeling is performed, a copy of the resulting computer model runs that show the results of the application of the "Air Toxic Policy" for the change.

#### **D. Reporting Requirements**

- 1. The permittee shall notify CDO in writing of all periods of time during which the emissions unit is used to combust waste types other than those permitted in term and condition B.2. The notification shall include a copy of such record, including any corrective action(s) taken, and shall be sent to the Central District Office within 30 days after the deviation occurs.
- 2. The permittee shall submit temperature deviation (excursion) reports that identify all periods of time during which the secondary combustion chamber exhaust gas temperatures did not comply with the temperature limitation specified above, including:
  - a. The date of the excursion;

- b. The time interval over which the excursion occurred;
- c. The temperature values during the excursion;
- d. The cause(s) for the excursion; and
- e. The corrective action which has been or will be taken to prevent similar excursions in the future.

This report shall be submitted to Central District Office within 30 days of the excursion.

- 3. The permittee shall submit deviation (excursion) reports which provide an identification of all hours of operation during which the charge rate exceeded the incinerator's permitted capacity, including the actual charge rates for all such hours of operation.

These reports are due by the date described in Part1 - General Terms and Conditions of this permit under section (A)(2).

## **E. Testing Requirements**

- 1. Compliance with the emission limitations in Section A.1 of these terms and conditions shall be determined in accordance with the following methods:

- a. Emission Limitation: Particulate Emissions (PE) shall not exceed 0.66 ton per year.

Applicable Compliance Method: The annual emission limit was determined by multiplying the short-term allowable particulate emission limitation (0.10 lbs/100 lbs charged) by the maximum rated capacity of the incinerator (150 lbs/hr) and by the maximum annual hours of operation (8,760 hrs), and then dividing by 2,000 lbs/ton. Therefore, compliance with this emission limitation can be assumed provided the permittee comply with the short term limit of 0.10 pounds per 100 pounds of charge.

- b. Emission Limitations: Nitrogen Oxide (NOx) emissions shall not exceed 0.23 pound per hour.

Applicable Compliance Method: Compliance with the allowable mass emission rate for NOx emissions shall be determined by multiplying an emission factor of 0.0015 pound of NOx emissions per pound of material charged by the emissions unit's maximum charge rate of 150 pounds of material per hour. This emission factor is specified in USEPA reference document AP-42, Fifth Edition, Compilation of Air Pollution Emission Factors, Section 2.1 Table 2.1-12(10/96). If required, the permittee shall demonstrate compliance with the emission limitation through emission tests performed in accordance with 40 CFR Part 60, Appendix A, Method 7E.

- c. Emission Limitations: Sulfur Dioxide (SO<sub>2</sub>) emissions shall not exceed 0.19 pound per hour.

Applicable Compliance Method: Compliance with the allowable mass emission rate for SO<sub>2</sub> emissions shall be determined by multiplying an emission factor of 0.0013 pound of SO<sub>2</sub> emissions per pound of material charged by the emissions unit's maximum charge rate of 150 pounds of material per hour. This emission factor is specified in USEPA reference document AP-42, Fifth Edition, Compilation of Air Pollution Emission Factors, Section 2.1 Table 2.1-12(10/96).

If required, the permittee shall demonstrate compliance with the emission limitation through emission tests performed in accordance with 40 CFR Part 60, Appendix A, Method 6C.

- d. Emission Limitations: Carbon Monoxide (CO) emissions shall not exceed 0.75 pound per hour

Applicable Compliance Method: Compliance with the allowable mass emission rate for CO emissions shall be determined by multiplying an emission factor of 0.005 pound of CO emissions per pound of material charged by the emissions unit's maximum charge rate of 150 pounds of material per hour. This emission factor is specified in USEPA reference document AP-42, Fifth Edition, Compilation of Air Pollution Emission Factors, Section 2.1 Table 2.1-12(10/96). If required, the permittee shall demonstrate compliance with the emission limitation through emission tests performed in accordance with 40 CFR Part 60, Appendix A, Method 10.

- e. Emission Limitations: Volatile Organic Compound (VOC) emissions shall not exceed 0.23 pound per hour

Applicable Compliance Method: Compliance with the allowable mass emission rate for VOC emissions shall be determined by multiplying an emission factor of 0.0015 pound of VOC emissions per pound of material charged by the emissions unit's maximum charge rate of 150 pounds of material per hour. This emission factor is specified in USEPA reference document AP-42, Fifth Edition, Compilation of Air Pollution Emission Factors, Section 2.1 Table 2.1-12(10/96). If required, the permittee shall demonstrate compliance with the emission limitation through emission tests performed in accordance with 40 CFR Part 60, Appendix A, Method 18.

- f. Emission Limitations: Particulate Emissions (PE) shall not exceed 0.66 ton per year; Nitrogen Oxide (NO<sub>x</sub>) emissions shall not exceed 1.0 ton per year; Carbon Monoxide (CO) emissions shall not exceed 3.29 tons per year; Sulfur Dioxide (SO<sub>2</sub>) emissions shall not exceed 0.83 ton per year; and Volatile Organic Compound (TOC) emissions shall not exceed 1.0 ton per year.

**Mid Ohio Cremation Service**  
**PTI Application: 01-01301**  
**Issued: 2/16/2006**

**Facility ID: 0121010269**  
**Emissions Unit ID: N001**

Applicable Compliance Method: Compliance with the annual limitations shall be assumed as long as compliance with the hourly limitations is maintained (each annual limitation was calculated by multiplying the hourly limitation by 8760, and then dividing by 2000).

- g. Emission Limitations: Visible particulate emissions from the stack shall not exceed 5% opacity as a six-minute average.

Applicable Compliance Method: If required, compliance shall be determined through visible emissions observations performed in accordance with 40 CFR Part 60, Appendix A, Method 9 and the procedures specified in OAC rule 3745-17-03(B)(1).

**F. Miscellaneous Requirements**

1. None.

**PART II - SPECIAL TERMS AND CONDITIONS FOR SPECIFIC EMISSIONS UNIT(S)**

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

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

<u>Operations, Property, and/or Equipment</u>	<u>Applicable Rules/Requirements</u>	<u>Applicable Emissions Limitations/Control Measures</u>
N002 - Industrial Engineering IE&E 150 lb/hr Human Crematory Model IE43PPII Serial 0070194	OAC rule 3745-31-05(A)(3)	Particulate Emissions (PE) shall not exceed 0.66 ton per year.  Nitrogen Oxide (NOx) emissions shall not exceed 0.23 pound per hour and 1.0 ton per year.  Carbon Monoxide (CO) emissions shall not exceed 0.75 pound per hour and 3.29 tons per year.  Sulfur Dioxide (SO2) emissions shall not exceed 0.19 pound per hour and 0.83 ton per year.  Total Organic Compound (TOC) emissions shall not exceed 0.23 pound per hour and 1.0ton per year.  Visible particulate emissions from the stack shall not exceed 5% opacity as a six-minute average,
	OAC rule 3745-17-09(A)	The visual emission limitation specified by this rule is less stringent than the emission limitation established pursuant to OAC rule 3745-31-05(A)(3).
	OAC rule 3745-17-09(B)	PE shall not exceed 0.1 pound per 100 pounds charged.
	OAC rule 3745-17-09(C)	See term and condition A.2.b

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

- 2.a** The above hourly and annual emission limitations were established to reflect the potential to emit for the emission unit. Therefore, no additional monitoring, recordkeeping and/or reporting other than the parametric monitoring of the secondary combustion chamber is necessary to ensure compliance with these limits.
- 2.b** The human cremation multiple chamber incinerator, including all associated equipment and grounds, shall be designed, operated and maintained so as to prevent the emission of objectionable odors.

## **B. Operational Restrictions**

1. The permittee shall only burn human remains and associated paper/wood products waste in this emissions unit. The paper products must be free from all plastics and all other foreign materials, and the wood products must not be preservative-treated wood and also must not contain any foreign materials. No plastic bags or other types of plastic materials shall be burned, except for containers containing no more than 0.5 percent by weight of chlorinated plastics that have been used as a container for the remains being cremated.
2. The human cremation multiple chamber incinerator, including all associated equipment and monitoring equipment, shall be installed, operated, and maintained in accordance with the manufacturer's recommendations, instructions and operating manual(s).
3. The permittee shall not charge the crematorium with "infectious waste" as defined in OAC rule 3745-75-01 (C) (5).
4. The crematory shall not be charged until the temperature of the secondary combustion chamber reaches 1200 degrees Fahrenheit. The secondary chamber shall allow for a 1.0 second (or more) retention time at 1200 degrees Fahrenheit.
5. During a cremation burn, the temperature of the secondary combustion chamber shall be maintained at a minimum of 1200 degrees Fahrenheit.
6. The crematorium shall not be operated unless the temperature monitoring devices are operating properly.
7. The charge rate shall not exceed 150 pounds of human waste per hour.
8. The stack shall be designed to minimize any building down wash impacts from emissions and/or odors on employees and nearby residences. The design shall meet good engineering practices so as not to result in excessive concentrations of air contaminants and/or odors in locations at, near or, in such a configuration, as to affect any air intake for heating and cooling of buildings or at operable windows or doors.

The initial design of the stack serving this emissions unit shall be a minimum height of 28 feet above ground and have a minimum air flow rate of 2400 ACFM.

9. The permittee shall employ only natural gas as fuel in this emissions unit.
10. This crematorium shall be operated only by properly trained personnel. A copy of all the training records for each operator shall be maintained on file as long as that operator is employed for that job and shall be immediately available to the Central District Office upon request.

### **C. Monitoring and/or Recordkeeping Requirements**

1. The permittee shall operate and maintain a continuous temperature monitor and recorder which measures and records the secondary combustion chamber temperature, in degrees Fahrenheit, during each cremation cycle. The temperature monitor and recorder shall be installed, calibrated, operated and maintained in accordance with the manufacturer's recommendations. Any modifications to the manufacturer's recommendations, deemed necessary by the permittee, shall not be made without the prior written consent of the Central District Office. The monitoring and recording devices shall be capable of accurately measuring the desired parameter.
2. The permittee shall maintain a log of all periods of time when the emissions unit is used to combust waste types other than those permitted in term and condition B.1.
3. A logbook shall be maintained for each continuous temperature and/or opacity monitoring system installed on this crematorium to document all activities involving the monitoring systems. Appropriate records should include, as a minimum, preventive maintenance, quality assurance and corrective action activities. The logbook shall be kept on file for a period of 5 years and shall be made available for inspection by the Ohio EPA or its authorized representatives at any reasonable time.
4. 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 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, the permittee shall also note the following in the operations log:
  - a. The color of the emissions;
  - b. The total duration of any visible emission incident; and
  - c. Any corrective actions taken to eliminate the visible emissions
5. The permittee shall collect and record the following information each day:
  - a. A log of the downtime for the temperature monitoring and/or recording equipment, when the associated emissions unit was in operation; and

- b. All periods of time during which the temperature of the exhaust gases from the incinerator, when the emissions unit was in operation, was below the minimum secondary combustion chamber exhaust gas temperature of 1200 degrees Fahrenheit as specified above
6. A written log shall be kept to record the estimated body and container weights and the cremation time. Alternative arrangements may be approved by the Director provided they can be shown to be of equivalent effectiveness as a method of regulating flow into the crematorium and generating a permanent record of charging rates.
7. The permittee shall perform monthly inspections of the crematorium using preventive maintenance procedures recommended by the equipment manufacturer. Each inspection shall include a written report identifying any needed repairs to the unit. If repairs are needed, the crematorium shall not be operated if the operation would result in any exceedance of the emission limits or terms and conditions detailed in this permit. These repairs shall be completed within 30 days of the inspection. If a time period longer than 30 days is needed to complete the repairs, the Central District Office shall be notified in writing. This notice shall list the repairs needed and the reason(s) the repairs could not be accomplished within the required time period. All inspection and repair reports shall be kept by the permittee for a period of 5 years and shall be made available to the Central District Office upon request.
8. The permit to install for this emissions unit (N002) was evaluated based on the information and the design parameters of the emissions unit's exhaust system, as specified by the permittee in the permit to install application and subsequent discussions with the manufacturer Matthews Cremation Services. The Ohio EPA's "Review of New Sources of Air Toxic Emissions" policy ("Air Toxic Policy") was applied for the pollutant mercury emitted by this emissions unit using data from the permit to install application, Matthews Cremation Services, USEPA, and the SCREEN 3.0 model (or other Ohio EPA approved model). The predicted 1-hour maximum ground-level concentration from the use of the SCREEN 3.0 model was compared to the Maximum Acceptable Ground-Level Concentration (MAGLC). The following summarizes the results of the modeling for the "worst case" pollutant(s):  
  
Pollutant: Mercury (Hg)  
TLV (mg/m3): 0.025  
Maximum Hourly Emission Rate (lbs/hr): 0.00329  
Predicted 1-Hour Maximum Ground-Level Concentration (ug/m3): 0.3778  
MAGLC (ug/m3): 1.2
9. Physical changes to or changes in the method of operation of the emissions unit after its installation or modification could affect the parameters used to determine whether or not the "Air Toxic Policy" is satisfied. Consequently, prior to making a change that could impact such parameters, the permittee shall conduct an evaluation to determine that the "Air Toxic Policy" will still be satisfied. If, upon evaluation, the permittee determines that the "Air Toxic Policy" will not be satisfied, the permittee will not make the change.

Changes that can affect the parameters used in applying the "Air Toxic Policy" include the following:

- a. changes in the composition of the materials used (typically for coatings or cleanup materials), or the use of new materials, that would result in the emission of a compound with a lower Threshold Limit Value (TLV), as indicated in the most recent version of the handbook entitled "American Conference of Governmental Industrial Hygienists (ACGIH)," than the lowest TLV value previously modeled;
- b. changes in the composition of the materials, or use of new materials, that would result in an increase in emissions of any pollutant with a listed TLV that was proposed in the application and modeled; and
- c. physical changes to the emissions unit or its exhaust parameters (e.g., increased/ decreased exhaust flow, changes in stack height, changes in stack diameter, etc.); exhaust stack to be at least 28feet above ground level and 20 inches in diameter and flow rate of at least 2400 CFM and temperature of 550 degrees Fahrenheit.

If the permittee determines that the "Air Toxic Policy" will be satisfied for the above changes, the Ohio EPA will not consider the change(s) to be a "modification" under OAC rule 3745-31-01 solely due to the emissions of any type of toxic air contaminant not previously emitted, and a modification of the existing permit to install will not be required, even if the toxic air contaminant emissions are greater than the de minimis level in OAC rule 3745-15-05. If the change(s) is (are) defined as a modification under other provisions of the modification definition, then the permittee shall obtain a final permit to install prior to the change.

10. The permittee shall collect, record, and retain the following information when it conducts evaluations to determine that the changed emissions unit will still satisfy the "Air Toxic Policy:"
  - a. a description of the parameters changed (composition of materials, new pollutants emitted, change in stack/exhaust parameters, etc.);
  - b. documentation of its evaluation and determination that the changed emissions unit still satisfies the "Air Toxic Policy"; and
  - c. where computer modeling is performed, a copy of the resulting computer model runs that show the results of the application of the "Air Toxic Policy" for the change.

## **D. Reporting Requirements**

1. The permittee shall notify CDO in writing of all periods of time during which the emissions unit is used to combust waste types other than those permitted in term and condition B.2. The notification shall include a copy of such record, including any corrective action(s) taken, and shall be sent to the Central District Office within 30 days after the deviation occurs.
2. The permittee shall submit temperature deviation (excursion) reports that identify all periods of time during which the secondary combustion chamber exhaust gas temperatures did not comply with the temperature limitation specified above, including:
  - a. The date of the excursion;
  - b. The time interval over which the excursion occurred;
  - c. The temperature values during the excursion;
  - d. The cause(s) for the excursion; and
  - e. The corrective action which has been or will be taken to prevent similar excursions in the future.

This report shall be submitted to Central District Office within 30 days of the excursion.

3. The permittee shall submit deviation (excursion) reports which provide an identification of all hours of operation during which the charge rate exceeded the incinerator's permitted capacity, including the actual charge rates for all such hours of operation.

These reports are due by the date described in Part1 - General Terms and Conditions of this permit under section (A)(2).

## **E. Testing Requirements**

1. Compliance with the emission limitations in Section A.1 of these terms and conditions shall be determined in accordance with the following methods:
  - a. Emission Limitation: Particulate Emissions (PE) shall not exceed 0.66 ton per year.

Applicable Compliance Method: The annual emission limit was determined by multiplying the short-term allowable particulate emission limitation (0.10 lbs/100 lbs charged) by the maximum rated capacity of the incinerator (150 lbs/hr) and by the maximum annual hours of operation (8,760 hrs), and then dividing by 2,000 lbs/ton. Therefore, compliance with this emission limitation can be assumed provided the permittee comply with the short term limit of 0.10 pounds per 100 pounds of charge.

- b. Emission Limitations: Nitrogen Oxide (NOx) emissions shall not exceed 0.23 pound per hour.

Applicable Compliance Method: Compliance with the allowable mass emission rate for NOx emissions shall be determined by multiplying an emission factor of 0.0015 pound of NOx emissions per pound of material charged by the emissions unit's maximum charge rate of 150 pounds of material per hour. This emission factor is specified in USEPA reference document AP-42, Fifth Edition, Compilation of Air Pollution Emission Factors, Section 2.1 Table 2.1-12(10/96). If required, the permittee shall demonstrate compliance with the emission limitation through emission tests performed in accordance with 40 CFR Part 60, Appendix A, Method 7E.

- c. Emission Limitations: Sulfur Dioxide (SO2) emissions shall not exceed 0.19 pound per hour.

Applicable Compliance Method: Compliance with the allowable mass emission rate for SO2 emissions shall be determined by multiplying an emission factor of 0.0013 pound of SO2 emissions per pound of material charged by the emissions unit's maximum charge rate of 150 pounds of material per hour. This emission factor is specified in USEPA reference document AP-42, Fifth Edition, Compilation of Air Pollution Emission Factors, Section 2.1 Table 2.1-12(10/96).

If required, the permittee shall demonstrate compliance with the emission limitation through emission tests performed in accordance with 40 CFR Part 60, Appendix A, Method 6C.

- d. Emission Limitations: Carbon Monoxide (CO) emissions shall not exceed 0.75 pound per hour

Applicable Compliance Method: Compliance with the allowable mass emission rate for CO emissions shall be determined by multiplying an emission factor of 0.005 pound of CO emissions per pound of material charged by the emissions unit's maximum charge rate of 150 pounds of material per hour. This emission factor is specified in USEPA reference document AP-42, Fifth Edition, Compilation of Air Pollution Emission Factors, Section 2.1 Table 2.1-12(10/96). If required, the permittee shall demonstrate compliance with the emission limitation through emission tests performed in accordance with 40 CFR Part 60, Appendix A, Method 10.

- e. Emission Limitations: Volatile Organic Compound (VOC) emissions shall not exceed 0.23 pound per hour

Applicable Compliance Method: Compliance with the allowable mass emission rate for VOC emissions shall be determined by multiplying an emission factor of

0.0015 pound of VOC emissions per pound of material charged by the emissions unit's maximum charge rate of 150 pounds of material per hour. This emission factor is specified in USEPA reference document AP-42, Fifth Edition, Compilation of Air Pollution Emission Factors, Section 2.1 Table 2.1-12(10/96). If required, the permittee shall demonstrate compliance with the emission limitation through emission tests performed in accordance with 40 CFR Part 60, Appendix A, Method 18.

- f. Emission Limitations: Particulate Emissions (PE) shall not exceed 0.66 ton per year; Nitrogen Oxide (NOx) emissions shall not exceed 1.0 ton per year; Carbon Monoxide (CO) emissions shall not exceed 3.29 tons per year; Sulfur Dioxide (SO<sub>2</sub>) emissions shall not exceed 0.83 ton per year; and Volatile Organic Compound (TOC) emissions shall not exceed 1.0 ton per year.

Applicable Compliance Method: Compliance with the annual limitations shall be assumed as long as compliance with the hourly limitations is maintained (each annual limitation was calculated by multiplying the hourly limitation by 8760, and then dividing by 2000).

- g. Emission Limitations: Visible particulate emissions from the stack shall not exceed 5% opacity as a six-minute average.

Applicable Compliance Method: If required, compliance shall be determined through visible emissions observations performed in accordance with 40 CFR Part 60, Appendix A, Method 9 and the procedures specified in OAC rule 3745-17-03(B)(1).

## **F. Miscellaneous Requirements**

1. None.