INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
We Protect Hoosiers and Our Environment.

Mitchell E. Daniels Jr.
Governor

Thomas W. Easterly
Commissioner

100 North Senate Avenue
Indianapolis, Indiana 46204
(317) 232-8603
Toll Free (800) 451-6027
www.idem.IN.gov

TO: Interested Parties / Applicant

DATE: December 16, 2011

RE: Credence Crematory / 117-31198-00029

FROM: Matthew Stuckey, Branch Chief
Permits Branch
Office of Air Quality

Notice of Decision – Approval

Please be advised that on behalf of the Commissioner of the Department of Environmental Management, I have issued a decision regarding the enclosed matter. Pursuant to 326 IAC 2, this approval was effective immediately upon submittal of the application.

If you wish to challenge this decision, IC 4-21.5-3-7 requires that you file a petition for administrative review. This petition may include a request for stay of effectiveness and must be submitted to the Office of Environmental Adjudication, 100 North Senate Avenue, Government Center North, Suite N 501E, Indianapolis, IN 46204, **within eighteen (18) calendar days from the mailing of this notice**. The filing of a petition for administrative review is complete on the earliest of the following dates that apply to the filing:

(1) the date the document is delivered to the Office of Environmental Adjudication (OEA);
(2) the date of the postmark on the envelope containing the document, if the document is mailed to OEA by U.S. mail; or
(3) The date on which the document is deposited with a private carrier, as shown by receipt issued by the carrier, if the document is sent to the OEA by private carrier.

The petition must include facts demonstrating that you are either the applicant, a person aggrieved or adversely affected by the decision or otherwise entitled to review by law. Please identify the permit, decision, or other order for which you seek review by permit number, name of the applicant, location, date of this notice and all of the following:

(1) the name and address of the person making the request;
(2) the interest of the person making the request;
(3) identification of any persons represented by the person making the request;
(4) the reasons, with particularity, for the request;
(5) the issues, with particularity, proposed for considerations at any hearing; and
(6) identification of the terms and conditions which, in the judgment of the person making the request, would be appropriate in the case in question to satisfy the requirements of the law governing documents of the type issued by the Commissioner.

If you have technical questions regarding the enclosed documents, please contact the Office of Air Quality, Permits Branch at (317) 233-0178. Callers from within Indiana may call toll-free at 1-800-451-6027, ext. 3-0178.

Enclosures
FNPER-AM.dot12/3/07

INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT

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Erica Livingston
Credence Crematory
300 S. Gospel Street
Paoli IN, 47454

December 16, 2011

Re: Exempt Construction and Operation Status,
E117-31198-00029

Dear Erica Livingston:

The application from Credence Crematory, received on December 1, 2011, has been reviewed. Based on the data submitted and the provisions in 326 IAC 2-1.1-3, it has been determined that the following stationary crematory for human remains located at 300 S. Gospel Street, Paoli IN 47454 is classified as exempt from air pollution permit requirements:

(a) One (1) crematory incinerator for human remains, identified as Unit 1, constructed in 2011 with a maximum capacity of 100 pounds of remains per hour, consisting of a primary and secondary chamber that fire natural gas at a total maximum heat input rate of 1.70 million British thermal units per hour (MMBtu/hr), exhausting to the atmosphere.

(b) Paved roads and parking lots

The following conditions shall be applicable:

1. Pursuant to 326 IAC 4-2-2 (Incinerators), the Permittee shall comply with the following:

(a) Each Crematory incinerator shall comply with the following requirements:

(1) Consist of primary and secondary chambers or the equivalent.

(2) Be equipped with a primary burner unless burning only wood products.

(3) Comply with 326 IAC 5-1 (Opacity Limitations) and 326 IAC 2 (Permit Review Rules).

(4) Be maintained, operated, and burn waste in accordance with the manufacturer's specifications or an operation and maintenance plan as specified in subsection (b) below.

(5) Not emit particulate matter in excess of five-tenths (0.5) pound of particulate matter per one thousand (1,000) pounds of dry exhaust gas under standard conditions corrected to fifty percent (50%) excess air for incinerators with solid waste capacity less than two hundred (200) pounds per hour.

(6) If any of the requirements of the subdivisions (1) through (5) are not met, then the owner or operator shall stop charging the incinerator until adjustments are made that address the underlying cause of the deviation.

(7) The incinerator is exempt from requirement (5) if subject to a more stringent particulate matter emissions limit in 40 CFR 52 Subpart P, State Implementation Plan for Indiana.

(b) An owner or operator developing an operation and maintenance plan pursuant to subsection (a)(4) above must comply with the following for each crematory incinerator:

(1) The operation and maintenance plan must be designed to meet the particulate matter emission limitation specified in subsection (a)(5) above and include the following:

(A) Procedures for receiving, handling, and charging waste.

(B) Procedures for incinerator startup and shutdown.

(C) Procedures for responding to a malfunction.

(D) Procedures for maintaining proper combustion air supply levels.

(E) Procedures for operating the incinerator and associated air pollution control systems.

(F) Procedures for handling ash.

(G) A list of wastes that can be burned in the incinerator.

(2) Each incinerator operator shall review the plan before initial implementation of the operation and maintenance plan and annually thereafter.

(3) The operation and maintenance plan must be readily accessible to incinerator operators.

(4) The owner or operator of the incinerator shall notify the department, in writing, thirty (30) days after the operation and maintenance plan is initially developed pursuant to this section.

(c) The owner or operator of each incinerator must make the manufacturer's specifications or the operation and maintenance plan available to the department upon request.

2. Pursuant to 326 IAC 5-1-2 (Opacity Limitations), except as provided in 326 IAC 5-1-3 (Temporary Alternative Opacity Limitations), opacity shall meet the following, unless otherwise stated in this permit:

(a) Opacity shall not exceed an average of forty percent (40%) in any one (1) six (6) minute averaging period as determined in 326 IAC 5-1-4.

(b) Opacity shall not exceed sixty percent (60%) for more than a cumulative total of fifteen (15) minutes (sixty (60) readings as measured according to 40 CFR 60, Appendix A, Method 9 or fifteen (15) one (1) minute non-overlapping integrated averages for a continuous opacity monitor) in a six (6) hour period.

3. Pursuant to 326 IAC 6-4 (Fugitive Dust Emissions Limitations), the source shall not allow fugitive dust to escape beyond the property line or boundaries of the property, right of way, or easement on which the source is located, in a manner that would violate 326 IAC 6-4.

4. Pursuant to 40 CFR 60.2555(a)(1) and 40 CFR (60.2555(a)(2), in order to demonstrate that the crematory incinerator is not subject to the requirements of the New Source Performance Standard (NSPS) for Commercial and Industrial Solid Waste Incinerations Units for Which Construction is Commenced After November 30, 1999 or for Which Modification or Reconstruction is Commenced on or After June 1, 2001, 40 CFR 60, Subpart CCCC (326 IAC 12), the source shall comply with the following:

(a) The Permittee shall notify the IDEM, OAQ that each crematory incinerator burns 90% or more by weight of pathological waste, excluding the weight of the auxiliary fuel and combustion air. The Permittee shall submit the notification to:

Indiana Department of Environmental Management
Compliance and Enforcement Branch, Office of Air Quality
100 North Senate Avenue
MC 61-53 IGCN 1003
Indianapolis, Indiana 46204-2251

(b) The Permittee shall maintain records on a calendar quarter basis of the weight of pathological waste burned (excluding the weight of auxiliary fuel and combustion of air) and the weight of all other fuels and wastes burned in each crematory incinerator.

(c) Pursuant to 40 CFR 60.2875, pathological waste means waste material consisting of only human or animal remains, anatomical parts, and/or tissue, the bags/containers used to collect and transport the waste material, and animal bedding (if applicable).

(d) All records shall be retained for a period of at least five (5) years from the date of the measurement. These records shall be physically present or electronically accessible at the source location for a minimum of three (3) years. The records may be stored elsewhere for the remaining two (2) years as long as they are available upon request. If the Commissioner makes a request for records to the Permittee, the Permittee shall furnish the records to the Commissioner within a reasonable time.

This exemption is the first air approval issued to this source. A copy of the Exemption is available on the Internet at: http://www.in.gov/ai/appfiles/idem-caats/. For additional information about air permits and how the public and interested parties can participate, refer to the IDEM's Guide for Citizen Participation and Permit Guide on the Internet at: www.idem.in.gov

An application or notification shall be submitted in accordance with 326 IAC 2 to the Office of Air Quality (OAQ) if the source proposes to construct new emission units, modify existing emission units, or otherwise modify the source. If you have any questions on this matter, please contact Deena Patton, OAQ, 100 North Senate Avenue, MC 61-53 IGCN 1003, Indianapolis, Indiana, 46204-2251, at 317-234-5400 or at 1-800-451-6027 (ext 45400).

Sincerely,

Iryn Calilung, Section Chief
Permits Branch
Office of Air Quality

IC /DP

cc: File – Orange County
Orange County Health Department
Compliance and Enforcement Branch
Billing, Licensing and Training Section

Indiana Department of Environmental Management
Office of Air Quality

Technical Support Document (TSD) for an Exemption

Source Description and Location

Source Name:	**Credence Crematory**
Source Location:	**300 S. Gospel Street, Paoli IN 47454**
County:	**Orange**
SIC Code:	**7261 (Funeral Service and Crematories)**
Exemption No.:	**E117-31198-00029**
Permit Reviewer:	**Deena Patton**

On December 1, 2011, the Office of Air Quality (OAQ) received an application from Credence Crematory related to the construction and operation of a new stationary crematory for human remains.

Existing Approvals

There have been no previous approvals issued to this source.

County Attainment Status

The source is located in Orange County.

Pollutant	Designation
SO_2	Better than national standards.
CO	Unclassifiable or attainment effective November 15, 1990.
O_3	Unclassifiable or attainment effective June 15, 2004, for the 8-hour ozone standard.[1]
PM_{10}	Unclassifiable effective November 15, 1990.
NO_2	Cannot be classified or better than national standards.
Pb	Not designated.
[1]Unclassifiable or attainment effective October 18, 2000, for the 1-hour ozone standard which was revoked effective June 15, 2005. Unclassifiable or attainment effective April 5, 2005, for $PM_{2.5}$.	

(a) Ozone Standards
Volatile organic compounds (VOC) and Nitrogen Oxides (NOx) are regulated under the Clean Air Act (CAA) for the purposes of attaining and maintaining the National Ambient Air Quality Standards (NAAQS) for ozone. Therefore, VOC and NOx emissions are considered when evaluating the rule applicability relating to ozone. Orange County has been designated as attainment or unclassifiable for ozone. Therefore, VOC and NOx emissions were reviewed pursuant to the requirements for Prevention of Significant Deterioration (PSD), 326 IAC 2-2.

(b) $PM_{2.5}$
Orange County has been classified as attainment for $PM_{2.5}$. On May 8, 2008 U.S. EPA promulgated the requirements for Prevention of Significant Deterioration (PSD) for $PM_{2.5}$ emissions. These rules became effective on July 15, 2008. On May 4, 2011 the air pollution control board issued an emergency rule establishing the direct $PM_{2.5}$ significant level at ten (10) tons per year. This rule became effective, June 28, 2011. Therefore, direct $PM_{2.5}$ and SO_2 emissions were reviewed pursuant to the requirements for Prevention of Significant Deterioration (PSD), 326 IAC 2-2. See the State Rule Applicability – Entire Source section.

(c) Other Criteria Pollutants
Orange County has been classified as attainment or unclassifiable in Indiana for CO, O_3, PM_{10}, . Therefore, these emissions were reviewed pursuant to the requirements for Prevention of Significant Deterioration (PSD), 326 IAC 2-2.

Fugitive Emissions

The fugitive emissions of criteria pollutants, hazardous air pollutants, and greenhouse gases are counted toward the determination of 326 IAC 2-1.1-3 (Exemptions) applicability.

Background and Description of Emission Units and Pollution Control Equipment

The Office of Air Quality (OAQ) has reviewed an application, submitted by Credence Crematory on December 1, 2011 relating to the construction and operation of a new stationary crematory for human remains.

The following is a list of the new emission unit(s):

(a) one (1) crematory incinerator for human remains, identified as Unit 1, constructed in 2011, with a maximum capacity of 100 pounds of remains per hour, consisting of a primary and secondary chamber that fire natural gas at a total maximum heat input rate of 1.70 million British thermal units per hour (MMBtu/hr), exhausting to the atmosphere.

(b) Paved roads and parking lots.

Enforcement Issues

There are no pending enforcement actions related to this source.

Emission Calculations

See Appendix A of this TSD for detailed emission calculations.

Permit Level Determination – Exemption

The following table reflects the unlimited potential to emit (PTE) of the entire source before controls. Control equipment is not considered federally enforceable until it has been required in a federally enforceable permit.

Process/ Emission Unit	Potential To Emit of the Entire Source (tons/year)									
	PM	PM10*	PM2.5	SO_2	NOx	VOC	CO	GHGs as CO_2e**	Total HAPs	Worst Single HAP
Crematory Incinerator	1.53	1.53	1.53	0.55	0.66	0.66	2.19	445	0.0	--
Natural Gas Combustion	0.01	0.04	0.06	0.004	0.73	0.04	0.61	881	0.02	0.01 (Hexane)
Paved Roads	0.33	0.07	0.02	0.0	0.0	0.0	0.0	0.0	0.0	--
Total PTE of Entire Source	**1.88**	**1.64**	**1.60**	**0.554**	**1.39**	**0.7**	**2.8**	**1327**	**0.02**	**0.01 (Hexane)**
Exemptions Levels**	5	5	5	10	10	5 or 10	25	100,000	25	10
Registration Levels**	25	25	25	25	25	25	100	100,000	25	10

-- = negligible
*Under the Part 70 Permit program (40 CFR 70), particulate matter with an aerodynamic diameter less than or equal to a nominal 10 micrometers (PM10), not particulate matter (PM), is considered as a "regulated air pollutant".
**The 100,000 CO_2e threshold represents the Title V and PSD subject to regulation thresholds for GHGs in order to determine whether a source's emissions are a regulated NSR pollutant under Title V and PSD.

(a) The potential to emit (PTE) (as defined in 326 IAC 2-1.1-1(16)) of all regulated criteria pollutants are less than the levels listed in 326 IAC 2-1.1-3(e)(1). Therefore, the source is subject to the provisions of 326 IAC 2-1.1-3 (Exemptions).

(b) The potential to emit (PTE) (as defined in 326 IAC 2-1.1-1(16)) of any single HAP is less than ten (10) tons per year and the PTE of a combination of HAPs is less than twenty-five (25) tons per year. Therefore, this source is an area source under Section 112 of the Clean Air Act (CAA) and not subject to the provisions of 326 IAC 2-7.

(c) The potential to emit (PTE) (as defined in 326 IAC 2-1.1-1) greenhouse gases (GHGs) is less than the Title V subject to regulation threshold of one hundred thousand (100,000) tons of CO_2 equivalent emissions (CO_2e) per year. Therefore, the source is not subject to the provisions of 326 IAC 2-7.

Federal Rule Applicability Determination

New Source Performance Standards (NSPS)

(a) The requirements of the New Source Performance Standard for Hospital/Medical/Infectious Waste Incinerators, 40 CFR 60.50, Subpart Ec (326 IAC 12), are not included in this exemption, because the crematory incinerator is not a hospital/medical/infectious waste incinerator as defined by 40 CFR 60.51c. Pursuant to the definitions under 40 CFR 60.51c, "hospital waste" and "medical/infectious waste" do not include remains that are intended cremation.

(b) The requirements of the following New Source Performance Standards (NSPS) are not included in this exemption, because the crematory incinerator is not considered a municipal waste combustor and does not burn municipal waste:

(1) 40 CFR 60, Subpart E (60.50 through 50.54), Standards of Performance for Standards of

Performance for Incinerators (326 IAC 12);

(2) 40 CFR 60, Subpart Ea (60.50a through 60.59a), Standards of Performance for Large Municipal Waste Combustors for Which Construction is Commenced after December 20, 1989 and on or before September 20, 1994 (326 IAC 12);

(3) 40 CFR 60, Subpart Eb (60.50b through 60.59b), Standards of Performance for Large Municipal Waste Combustors for Which Construction is Commenced after September 20, 1994, or for Which Modification or Reconstruction is commenced after June 19, 1996 (326 IAC 12);

(4) 40 CFR 60, Subpart AAAA (60.1000 through 60.1465), Standards of Performance for Small Municipal Waste Combustion Units for Which Construction is Commenced After August 30, 1999 or for Which Modification or Reconstruction is Commenced After June 6, 2001 (326 IAC 12).

(c) The requirements of the New Source Performance Standard (NSPS) for Commercial and Industrial Solid Waste Incinerations Units for Which Construction is Commenced After November 30, 1999 or for Which Modification of Reconstruction is Commenced on or After June 1, 2001, 40 CFR 60, Subpart CCCC (60.2000 through 60.2265) (326 IAC 12), are not included in this exemption, because the crematory incinerator is not considered a commercial and industrial solid waste incineration (CISWI) unit as defined in 40 CFR 60.2555. Pursuant to the definitions under 40 CFR 60.2265, a commercial and industrial solid waste incineration (CISWI) unit does not include any of the fifteen types of units described in 40 CFR 60.2555. Pursuant to 40 CFR 60.2555(a), incineration units burning 90 percent or more by weight (on calendar quarter basis and excluding the weight of auxiliary fuel and combustion air) of pathological waste, low level radioactive waste, and/or chemotherapeutic waste as defined in 40 CFR 60.2875 are not subject to this subpart if you meet the two requirements specified in paragraphs (a)(1) and (2) of this section.

(1) Notify the Administrator that the unit meets these criteria.

(2) Keep records on a calendar quarter basis of the weight of pathological waste, low-level radioactive waste, and/or chemotherapeutic waste burned, and the weight of all other fuels and wastes burned in the unit.

Pursuant to 40 CFR 60.2555(a)(1) and 40 CFR 60.2555(a)(2), in order to demonstrate that the crematory incinerator is not subject to the requirements of the New Source Performance Standard (NSPS) for Commercial and Industrial Solid Waste Incinerations Units for Which Construction is Commenced After November 30, 1999 or for Which Modification or Reconstruction is Commenced on or After June 1, 2001, 40 CFR 60, Subpart CCCC (326 IAC 12), the source shall comply with the following:

(1) The Permittee shall notify the IDEM, OAQ that each crematory incinerator burns 90% or more by weight of pathological waste, excluding the weight of the auxiliary fuel and combustion air. The Permittee shall submit the notification to:

Indiana Department of Environmental Management
Compliance and Enforcement Branch, Office of Air Quality
100 North Senate Avenue
MC 61-53 IGCN 1003
Indianapolis, Indiana 46204-2251

(2) The Permittee shall maintain records on a calendar quarter basis of the weight of pathological waste burned (excluding the weight of auxiliary fuel and combustion) and the weight of all other fuels and wastes burned each crematory incinerator.

(3) Pursuant to 40 CFR 60.2875, pathological waste means waste material consisting of only human or animal remains, anatomical parts, and/or tissue, the bags/containers used to collect and transport the wastes material, and animal bedding (if applicable).

(4) All records shall be retained for a period of at least five (5) years from the date of the measurement. These records shall be physically present or electronically accessible at the source location for a minimum of three (3) years. The records may be stored elsewhere for the remaining two (2) years as long as they are available upon request. If the Commissioner makes a request for records to the Permittee, the Permittee shall furnish the records to the Commissioner within a reasonable time.

(d) The requirements of the New Source Performance Standards for other Solid Waste Incineration Units for Which Construction is Commenced After December 9, 2004 or for Which Modification or Reconstruction is commenced on or After June 16, 2006, 40 CFR 60, Subpart EEEE (60.2280 through 60.2891), are not included in this exemption, because the crematory incinerator is not considered an Other Solid Waste Incineration (OSWI) unit as defined by 40 CFR 60.2977. the crematory incinerator does not burn municipal solid waste or institutional waste as defined in 40 CFR 60.2977.

(e) There are no New Source Performance Standards (NSPS) (326 IAC 12 and 40 CFR Part 60) included in the exemption for this source.

National Emission Standards for Hazardous Air Pollutants (NESHAP)

(f) The requirements of the National Emission Standards for Hazardous Waste Combustors, 40 CFR 63, Subpart EEE (63.1200 through 63.1214) (326 IAC 20-28), are not included in this exemption, because the crematory incinerator is not considered a hazardous waste incinerator and the source is not a major source of HAPs.

(g) The requirements of the National Emission Standards for Hazardous Air Pollutants for Industrial Commercial, and Institutional Boilers and Process Heaters, 40 CFR 63, Subpart DDDDD, are not included in this exemption, because this source is not a major source of HAPs as defined in 40 CFR 63,2 and does not contain any boilers or process heaters.

(h) The requirements of the National Emission Standards for Hazardous Air Pollutants for Industrial , Commercial, and Institutional Boilers Area Sources, 40 CFR 63, Subpart JJJJJJ, are not included in this exemption, because this source does not contain any boilers.

(i) There are no National Emission Standards for Hazardous Air Pollutants (NESHAP) (326 IAC 14, 20 and 40 CFR Part 61, 63) included in the exemption for this source

Compliance Assurance Monitoring (CAM)

(j) Pursuant to 40 CFR 64.2, Compliance Assurance Monitoring (CAM) is not included in the permit, because the unlimited potential to emit of the source is less than the Title V major source thresholds and the source is not required to obtain a Part 70 or Part 71 permit.

State Rule Applicability Determination

The following state rules are applicable to the source:

(a) 326 IAC 2-1.1-3 (Exemptions)
Exemption applicability is discussed under the Permit Level Determination – Exemption section above.

(b) 326 IAC 2-4.1 (Major Sources of Hazardous Air Pollutants (HAP))
The potential to emit of any single HAP is less than ten (10) tons per year and the potential to emit of a combination of HAPs is less than twenty-five (25) tons per year. Therefore, this source is an area source under Section 112 of the Clean Air Act (CAA) and not subject to the provisions of 326 IAC 2-4.1.

(c) 326 IAC 2-6 (Emission Reporting)

Pursuant to 326 IAC 2-6-1, this source is not subject to this rule, because it is not required to have an operating permit under 326 IAC 2-7 (Part 70), it is not located in Lake, Porter, or LaPorte County, and it does not emit lead into the ambient air at levels equal to or greater than 5 tons per year. Therefore, 326 IAC 2-6 does not apply.

(d) 326 IAC 5-1 (Opacity Limitations)
Pursuant to 326 IAC 5-1-2 (Opacity Limitations), except as provided in 326 IAC 5-1-3 (Temporary Alternative Opacity Limitations), opacity shall meet the following, unless otherwise stated in this permit:

(1) Opacity shall not exceed an average of forty percent (40%) in any one (1) six (6) minute averaging period as determined in 326 IAC 5-1-4.

(2) Opacity shall not exceed sixty percent (60%) for more than a cumulative total of fifteen (15) minutes (sixty (60) readings as measured according to 40 CFR 60, Appendix A, Method 9 or fifteen (15) one (1) minute nonoverlapping integrated averages for a continuous opacity monitor) in a six (6) hour period.

326 IAC 6-4 (Fugitive Dust Emissions Limitations)
Pursuant to 326 IAC 6-4 (Fugitive Dust Emissions Limitations), the source shall not allow fugitive dust to escape beyond the property line or boundaries of the property, right-of-way, or easement on which the source is located, in a manner that would violate 326 IAC 6-4.

326 IAC 6-5 (Fugitive Particulate Matter Emission Limitations)
The source is not subject to the requirements of 326 IAC 6-5, because the ***source does not*** have potential fugitive particulate emissions greater than 25 tons per year. Therefore, 326 IAC 6-5 does not apply.

326 IAC 6.5 (PM Limitations Except Lake County)
This source is not subject to 326 IAC 6.5 because it is not located in Clark, Dearborn, Dubois, Howard, Marion, St. Joseph, Vanderburgh, Vigo or Wayne County and it does not have the potential to emit particulate matter is equal to or greater than 10 tons per year.

326 IAC 6.8 (Particulate Matter Limitations for Lake County)
This source is not subject to 326 IAC 6.8 because it is not located in Lake County and it does not have the potential to emit particulate matter is equal to or greater than 10 tons per year.

326 IAC 6.8-10 (Lake County: Fugitive Particulate Matter)
The source is not subject to the requirements of 326 IAC 6.8-10, because it is not located in Lake County and it does not have potential fugitive particulate emissions greater than 5 tons per year.

326 IAC 8-1-6 (VOC Rules: General Reduction Requirements for New Facilities)
Each of the emission units at this source is not subject to the requirements of 326 IAC 8-1-6, since the unlimited VOC potential emissions from each emission unit is less than twenty-five (25) tons per year.

326 IAC 12 (New Source Performance Standards)

See Federal Rule Applicability Section of this TSD.

326 IAC 20 (Hazardous Air Pollutants)
See Federal Rule Applicability Section of this TSD.

Crematory Incinerator

(i) 326 IAC 4-2 (Incinerators)
Pursuant to 326 IAC 4-2-2, the Permittee shall comply with the following:

(a) Each crematory incinerator shall comply with the following requirements:

(1) Consist of primary and secondary chambers or the equivalent

(2) Be equipped with a primary burner unless burning only wood products.

(3) Comply with 326 IAC 5-1 (Opacity Limitations) and 326 IAC 2 (Permit Review Rules).

(4) Be maintained, operate, and burn waste in accordance with the manufacturer's specifications or an operation and maintenance plan as specified in subsection (b) below.

(5) Not emit particulate matter in excess of five-tenths (0.5) pound of particulate matter per one thousand (1,000) pounds of dry exhaust gas under standard conditions corrected to fifty percent (50%) excess air for incinerators with solid waste capacity less than two hundred (200) pounds per hour.

(6) If any of the requirements of subdivisions (1) through (5) are not met, then the owner or operator shall stop charging the incinerator until adjustments are made that address the underlying cause of the deviation.

(7) The incinerator is exempt from requirement (5) if subject to a more stringent particulate matter emissions limit in 40 CFR 52 Subpart P, State Implementation Plan for Indiana.

(b) An owner or operator developing an operation and maintenance plan pursuant to subsection (a)(4) above must comply with the following for each crematory incinerator:

(1) The operations and maintenance plan must be designed to meet the particulate matter emission limitation specified in subsection (a)(5) above and include the following:

(A) Procedures for receiving, handling, and charging waste.

(B) Procedures for incinerator startup and shutdown.

(C) Procedures for responding to a malfunction

(D) Procedures for maintaining proper combustion air supply levels.

(E) Procedures for operating the incinerator and associated air pollution control systems.

(F) Procedures for handling ash.

(G) A list of wastes that can be burned in the incinerator.

(2) Each incinerator operator shall review the plan before initial implementation of the operation and maintenance plan and annually thereafter.

(3) The operation and maintenance plan must be readily accessible to incinerator operators.

(4) The owner or operator of the incinerator shall notify the department, in writing, thirty (30) days after the operation and maintenance plan is initially developed pursuant to this section.

(c) The owner or operator of each incinerator must make the manufacturer's specifications or the operation and maintenance plan available to the department upon request.

326 IAC 6-2 (Particulate Emission Limitations for Sources of Indirect Heating)
The crematory incinerator is not subject to the requirements of 326 IAC 6-2, because it is not an indirect heating unit.

326 IAC 6-3 (Particulate Emissions Limitations for Manufacturing Processes)
Pursuant to 326 IAC 6-3-1(a)(2), the crematory incinerator is exempt from the requirements of 326 IAC 6-3.

326 IAC 7-1 (Sulfur dioxide emission limitations: Applicability)
The crematory incinerator is not subject to the requirements of 326 IAC 7-1, because the potential and the actual emissions of sulfur dioxide are less than twenty-five (25) tons per year and ten (10) pounds per hour respectively.

326 IAC 8-1-6 (VOC Rules: General Reduction Requirements for New Facilities)
The crematory incinerator is not subject to the requirements of 326 IAC 8-1-6, since it has unlimited VOC potential emissions of less than twenty-five (25) tons per year.

There are no other 326 IAC 8 Rules that are applicable to the crematory incinerator.

326 IAC 8-7 (VOC Rules: Specific VOC Reduction Requirements for Lake, Porter, Clark, and Floyd Counties)
Pursuant to 326 IAC 8-7-2(a), this source is not subject to the requirements of 326 IAC 8-7, since it is not located in Lake, Porter, Clark, or Floyd County.

326 IAC 8-19 (Voc Rules: Control of Volatile Organic Compound Emissions from Process Vents in Batch Operations)
Pursuant to 326 IAC 8-19-1, this source is not subject to the requirements of 326 IAC 8-18, since it is not located in Lake or Porter County and does not have the potential to emit VOC greater than or equal to one hundred (100) tons per year from a batch process train associated with any of the SIC Codes listed under 326 IAC 8-19-1(a).

326 IAC 9-1 (Carbon Monoxide Emission Limits)
This stationary source, constructed after the applicability date of March 21, 1972, is not subject to the requirements of 326 IAC 9-1-2(a)(3), since the crematory incinerator burns pathological waste and does not burn refuse consisting of more than 50 percent municipal type waste (household, commercial/retail, and/or institutional waste).

326 IAC 10-1-1 (Nitrogen Oxides Control)

The crematory incinerator is not subject to the requirements of 326 IAC 10-1-1 (Nitrogen Oxides Control), because the source is not located in Clark or Floyd counties.

326 IAC 11-6 (Hospital/Medical/Infectious Waste Incinerators)

Pursuant to 326 IAC 11-6, the crematory incinerator is not subject to the requirements of 326 IAC 11-6, because it is not a hospital/medical/infectious waste incinerator and it was not constructed on or before June 20, 1996.

326 IAC 11-7 (Emission Limitations for Municipal Waste Combustors)

Pursuant to 326 IAC 11-7, the crematory incinerator is not subject to the requirements of 326 IAC 11-7, since it is considered a pathological waste combustor and not a municipal waste combustor, and it was not constructed on or before September 20, 1994.

326 IAC 11-8 (Commercial and Industrial Solid Waste Incineration Units)

Pursuant to 326 IAC 11-8, the crematory incinerator is not subject to the requirements of 326 IAC 11-8, because it is not considered a commercial and industrial solid waste incineration (CISWI) unit as defined in 40 CFR 60.2875, and it was not constructed on or before November 30, 1999.

Conclusion and Recommendation

Unless otherwise stated, information used in this review was derived from the application and additional information submitted by the applicant. An application for the purposes of this review was received on December 1, 2011

The operation of this source shall be subject to the conditions of the attached proposed Exemption No. 117-31198-00029. The staff recommends to the Commissioner that this Exemption be approved.

IDEM Contact

(a) Questions regarding this proposed permit can be directed to Deena Patton at the Indiana Department Environmental Management, Office of Air Quality, Permits Branch, 100 North Senate Avenue, MC 61-53 IGCN 1003, Indianapolis, Indiana 46204-2251 or by telephone at (317) 234-5400 or toll free at 1-800-451-6027 extension 45400.

(b) A copy of the findings is available on the Internet at: http://www.in.gov/ai/appfiles/idem-caats/

(c) For additional information about air permits and how the public and interested parties can participate, refer to the IDEM's Guide for Citizen Participation and Permit Guide on the Internet at: www.in.gov/idem

TSD Appendix A: Emission Calculations
Emission Summary

Company Name: Credence Crematory
Source Address: 300 S Gospel Street, Paoli, IN 47454
Exemption No.: E117-31198-00029
Reviewer: Deena Patton

	Uncontrolled Potential Emissions (tons/year)				
	Emissions Generating Activity				
Category	**Pollutant**	**Incineration**	**Natural Gas Combustion**	**Paved Roads (fugitive)**	**TOTAL**
Criteria Pollutants	PM	1.53	0.01	0.33	1.88
	PM10	1.53	0.04	0.07	1.64
	PM2.5	1.53	0.06	0.02	1.60
	SO2	0.55	0.004	0.0	0.55
	NOx	0.66	0.73	0.0	1.39
	VOC	0.66	0.04	0.0	0.70
	CO	2.19	0.61	0.0	2.80
	GHGs as CO2e	445	881	0.0	1327
Hazardous Air Pollutants	Chromium	0.0	1.40E-03	0.0	1.40E-03
	Manganese	0.0	3.80E-04	0.0	3.80E-04
	Nickel	0.0	2.10E-03	0.0	2.10E-03
	n-Hexane	0.0	0.01	0.0	0.01
	Toluene	0.0	2.48E-05	0.0	2.48E-05
	Benzene	0.0	1.53E-05	0.0	1.53E-05
	Dichlorobenzene	0.0	8.76E-06	0.0	8.76E-06
	Formaldehyde	0.0	5.48E-04	0.0	5.48E-04
	Lead	0.0	3.65E-06	0.0	3.65E-06
	Cadmium	0.0	8.03E-06	0.0	8.03E-06
	Totals	**0.0**	**0.02**	**0.0**	**0.02**
	Worse Case HAP				**0.01 (n-Hexane)**

Total Emissions based on rated capacity at 8,760 hours per year

TSD Appendix A: Emission Calculations
Crematory Incinerator BL-1

Company Name: **Credence Crematory**
Source Address: **300 S. Gospel Street, Paoli, IN 47454**
Exemption No.: **E117-31198-00029**
Reviewer: **Deena Patton**

To estimate the potential to emit for the incineration of human or animal remains, it is assumed that emissions from a crematory incinerator is similar to emissions from combusting municipal solid waste in a multiple chamber commercial incinerator.

Unit	Potential Throughput (lbs/hr)	Potential Throughput (tons/yr)
BL-1	100	438
Total	**100**	**438**

	Pollutant						
	PM*	PM10**	PM2.5**	SO2	CO	VOC	NOx
Emission Factor in lb/ton*	7.0	7.0	7.0	2.5	10.0	3.0	3.0
Potential Emissions in ton/yr	1.53	1.53	1.53	0.55	2.19	0.66	0.66

Methodology
Potential Throughput (tons/yr) = [Potential Throughput (lbs/hr)] * [8,760 hrs/yr] * [ton/2000 lbs]
Potential to Emit (tons/yr) = [Potential Throughput (tons/yr)] * [Emission Factor (lb/ton)] * [ton/2,000 lbs]
*Emission factors are from AP 42 for Refuse Combustion (5th Edition 10/96) Table 2.1-12 (Uncontrolled emission factors for industrial/commercial refuse combustors, multiple chamber)
Note: There are no AP 42 emission factors for incineration of human or animal remains. Therefore, it is assumed that emissions from a crematory incinerator is similar to emissions from combusting municipal solid waste in a multiple chamber commercial incinerator
**No emission factor for PM10 and PM2.5 available (assume PM = PM10= PM2.5)

Greenhouse Gases

	Greenhouse Gas		
	CO2	CH4	N2O
Emission Factor (kg/MMBtu)*	90.7	3.20E-02	4.20E-03
High Heat Value (MMBtu/ton)**	9.95	9.95	9.95
Emission Factor (lb/ton)	1989.6	0.70	0.09
Potential to Emit (tons/yr)	435.72	0.15	0.02
Summed Potential Emissions in tons/yr	435.89		
CO2e Total in tons/yr	445.20		

Methodology
*Under AP 42 Chapter 1.2 Refuse Combustion (5th Edition 10/96), there are no emission factors for CH4 and N2O and the emission factor for CO2 in AP 42 Table 2.1-9 (Modular Starved-Air Combustors) is less than the emission factor calculated from Table C-1 of 40 CFR Part 98, Subpart C (for Municipal Solid Waste). Therefore, CO2, CH4, and N2O emission factors are from Table C-1 and Table C-2, 40 CFR Part 98, Subpart C (for Municipal Solid Waste). In addition, there are no emission factors in 40 CFR Part 98 Subpart C for combustion of human or animal remains. Therefore, it is assumed that emissions from a crematory incinerator is similar to emissions from combusting municipal solid waste.
**The High Heat Value (HHV) corresponds to municipal solid waste.
Greenhouse Warming Potentials (GWP) from Table A-1 of 40 CFR Part 98 Subpart A.
Emission Factor (lb/ton) = [Emission Factor (kg/MMBtu)] * [2.2046 lb/kg] * [High Heat Value (MMBtu/ton)]
Potential to Emit (tons/yr) = [Potential Throughput (tons/yr)] * [Emission Factor (lb/ton)] * [ton/2,000 lbs]
CO2e (tons/yr) = CO2 Potential Emission ton/yr x CO2 GWP (1) + CH4 Potential Emission ton/yr x CH4 GWP (21) + N2O Potential Emission ton/yr x N20 GWP (310).

TSD Appendix A: Emission Calculations
Natural Gas Combustion Only
Capacity <100 MMBtu/hr
Crematory Incinerator BL-1

Company Name: **Credence Crematory**
Source Address: **300 S. Gospel Street, Paoli, IN 47454**
Exemption No.: **E117-31198-00029**
Reviewer: **Deena Patton**

Unit	Maximum Heat Input Capacity (MMBtu/hr)	High Heat Value (MMBtu/MMscf)	Potential Throughput (MMcf/yr)
BL-1	1.70	1020	14.60
Totals	**1.70**		**14.60**

Criteria Pollutants	Pollutant						
	PM*	PM10*	PM2.5*	SO2	NOx	VOC	CO
Emission Factor in lb/MMcf	1.9	7.6	7.6	0.6	100 **see below	5.5	84
Potential Emission in tons/yr	0.01	0.04	0.06	0.004	0.73	0.04	0.61

*PM emission factor is filterable PM only. PM10 emission factor is filterable and condensable PM10 combined. PM2.5 assumed equal to PM10
**Emission Factors for NOx: Uncontrolled = 100, Low NOx Burner = 50, Low NOx Burners/Flue gas recirculation = 32

Hazardous Air Pollutants	HAPs - Organics*					HAPs - Metals*				
	Benzene	DCB	Formaldehyde	Hexane	Toluene	Pb	Cd	Cr	Mn	Ni
Emission Factor in lb/MMcf	2.1E-03	1.2E-03	7.5E-02	1.8E+00	3.4E-03	5.0E-04	1.1E-03	1.4E-03	3.8E-04	2.1E-03
Potential Emission in tons/yr	1.533E-05	8.760E-06	5.475E-04	1.314E-02	2.482E-05	3.650E-06	8.030E-06	1.022E-05	2.774E-06	1.533E-05

*The five highest organic and metal HAPs emission factors are provided above. Additional HAPs emission factors are available in AP-42, Chapter 1.4.

Methodology
All emission factors are based on normal firing.
MMBtu = 1,000,000 Btu
MMCF = 1,000,000 Cubic Feet of Gas
Emission Factors are from AP 42, Chapter 1.4, Tables 1.4-1, 1.4-2, 1.4-3, SCC #1-02-006-02, 1-01-006-02, 1-03-006-02, and 1-03-006-03
Potential Throughput (MMCF) = Heat Input Capacity (MMBtu/hr) x 8,760 hrs/yr x 1 MMCF/1,000 MMBtu
Emission (tons/yr) = Throughput (MMCF/yr) x Emission Factor (lb/MMCF)/2,000 lb/ton

Greenhouse Gases (GHGs)	Greenhouse Gas (GHG)		
	CO2	CH4	N2O
Emission Factor in lb/MMcf	120000	2.3	2.2
Potential Emission in tons/yr	876.00	0.02	0.02
Summed Potential Emissions in tons/yr	876.03		
CO2e Total in tons/yr	881.33		

Methodology
The N2O Emission Factor for uncontrolled is 2.2. The N2O Emission Factor for low Nox burner is 0.64.
Emission Factors are from AP 42, Table 1.4-2 SCC #1-02-006-02, 1-01-006-02, 1-03-006-02, and 1-03-006-03.
Greenhouse Warming Potentials (GWP) from Table A-1 of 40 CFR Part 98 Subpart A.
Emission (tons/yr) = Throughput (MMCF/yr) x Emission Factor (lb/MMCF)/2,000 lb/ton
CO2e (tons/yr) = CO2 Potential Emission ton/yr x CO2 GWP (1) + CH4 Potential Emission ton/yr x CH4 GWP (21) + N2O Potential Emission ton/yr x N20 GWP (310).

Abbreviations
PM = Particulate Matter
PM10 = Particulate Matter (<10 um)
SO2 = Sulfur Dioxide
NOx = Nitrous Oxides
VOC - Volatile Organic Compounds
CO = Carbon Monoxide
DCB = Dichlorobenzene
Pb = Lead
Cd = Cadmium
Cr = Chromium
Mn = Manganese
Ni = Nickel
CO2 = Cabon Dioxide
CH4 = Methane
N2O = Nitrous Oxide
CO2e = CO2 equivalent emissions

TSD Appendix A: Emission Calculations
Fugitive Dust Emissions - Paved Roads

Company Name: **Credence Crematory**
Source Address: **300 S. Gospel Street, Paoli, IN 47454**
Exemption No.: **E117-31198-00029**
Reviewer: **Deena Patton**

Paved Roads at Industrial Site
The following calculations determine the amount of emissions created by paved roads, based on 8,760 hours of use and AP-42, Ch 13.2.1 (1/2011).

Vehicle Informtation (provided by source)

Type	Vehicle Type	Maximum number of vehicles per day	Number of one-way trips per day per vehicle	Maximum trips per day (trip/day)	Maximum Weight Loaded (tons/trip)	Total Weight driven per day (ton/day)	Maximum one-way distance (feet/trip)	Maximum one-way distance (mi/trip)	Maximum one-way miles (miles/day)	Maximum one-way miles (miles/yr)
Vehicle (entering plant) (one-way trip)	Passenger Car (4-door)	100.0	1.0	100.0	2.0	200.0	300	0.057	5.7	2073.9
Vehicle (leaving plant) (one-way trip)	Passenger Car (4-door)	100.0	1.0	100.0	2.0	200.0	300	0.057	5.7	2073.9
			Total	**200.0**		**400.0**			**11.4**	**4147.7**

Average Vehicle Weight Per Trip = 2.0 tons/trip
Average Miles Per Trip = 0.06 miles/trip

Unmitigated Emission Factor, Ef = [k * (sL)^0.91 * (W)^1.02] (Equation 1 from AP-42 13.2.1)

	PM	PM10	PM2.5	
where k =	0.011	0.0022	0.00054	lb/VMT = particle size multiplier (AP-42 Table 13.2.1-1)
W =	2.0	2.0	2.0	tons = average vehicle weight (provided by source)
sL =	9.7	9.7	9.7	g/m^2 = silt loading value for paved roads at iron and steel production facilities - Table 13.2.1-3)

Taking natural mitigation due to precipitation into consideration, Mitigated Emission Factor, Eext = E * [1 - (p/4N)] (Equation 2 from AP-42 13.2.1)
Mitigated Emission Factor, Eext = Ef * [1 - (p/4N)]
where p = 125 days of rain greater than or equal to 0.01 inches (see Fig. 13.2.1-2)
N = 365 days per year

	PM	PM10	PM2.5	
Unmitigated Emission Factor, Ef =	0.176	0.035	0.0087	lb/mile
Mitigated Emission Factor, Eext =	0.161	0.032	0.0079	lb/mile

Process	Vehicle Type	Unmitigated PTE of PM (tons/yr)	Unmitigated PTE of PM10 (tons/yr)	Unmitigated PTE of PM2.5 (tons/yr)	Mitigated PTE of PM (tons/yr)	Mitigated PTE of PM10 (tons/yr)	Mitigated PTE of PM2.5 (tons/yr)
Vehicle (entering plant) (one-way trip)	Passenger Car (4-door)	0.18	0.04	0.01	0.17	0.03	0.01
Vehicle (leaving plant) (one-way trip)	Passenger Car (4-door)	0.18	0.04	0.01	0.17	0.03	0.01
		0.37	**0.07**	**0.02**	**0.33**	**0.07**	**0.02**

Methodology
Total Weight driven per day (ton/day) = [Maximum Weight Loaded (tons/trip)] * [Maximum trips per day (trip/day)
Maximum one-way distance (mi/trip) = [Maximum one-way distance (feet/trip) / [5280 ft/mile
Maximum one-way miles (miles/day) = [Maximum trips per year (trip/day)] * [Maximum one-way distance (mi/trip)
Average Vehicle Weight Per Trip (ton/trip) = SUM[Total Weight driven per day (ton/day)] / SUM[Maximum trips per day (trip/day)
Average Miles Per Trip (miles/trip) = SUM[Maximum one-way miles (miles/day)] / SUM[Maximum trips per year (trip/day)
Unmitigated PTE (tons/yr) = [Maximum one-way miles (miles/yr)] * [Unmitigated Emission Factor (lb/mile)] * (ton/2000 lbs
Mitigated PTE (tons/yr) = [Maximum one-way miles (miles/yr)] * [Mitigated Emission Factor (lb/mile)] * (ton/2000 lbs
Controlled PTE (tons/yr) = [Mitigated PTE (tons/yr)] * [1 - Dust Control Efficiency

Abbreviations
PM = Particulate Matter
PM10 = Particulate Matter (<10 um)
PM2.5 = Particle Matter (<2.5 um)
PTE = Potential to Emit

INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT

We Protect Hoosiers and Our Environment.

Mitchell E. Daniels Jr.
Governor

Thomas W. Easterly
Commissioner

100 North Senate Avenue
Indianapolis, Indiana 46204
(317) 232-8603
Toll Free (800) 451-6027
www.idem.IN.gov

SENT VIA U.S. MAIL: CONFIRMED DELIVERY AND SIGNATURE REQUESTED

TO: Erica Livingston
Credence Crematory
4670 W CR 640 S
Paoli, IN 47454

DATE: December 16, 2011

FROM: Matt Stuckey, Branch Chief
Permits Branch
Office of Air Quality

SUBJECT: Final Decision
Exemption
117-31198-00029

Enclosed is the final decision and supporting materials for the air permit application referenced above. Please note that this packet contains the original, signed, permit documents.

The final decision is being sent to you because our records indicate that you are the contact person for this application. However, if you are not the appropriate person within your company to receive this document, please forward it to the correct person.

A copy of the final decision and supporting materials has also been sent via standard mail to:
OAQ Permits Branch Interested Parties List

If you have technical questions regarding the enclosed documents, please contact the Office of Air Quality, Permits Branch at (317) 233-0178, or toll-free at 1-800-451-6027 (ext. 3-0178), and ask to speak to the permit reviewer who prepared the permit. If you think you have received this document in error, please contact Joanne Smiddie-Brush of my staff at 1-800-451-6027 (ext 3-0185), or via e-mail at jbrush@idem.IN.gov.

Final Applicant Cover letter.dot 11/30/07

Mail Code 61-53

IDEM Staff	MIDENNEY 12/16/2011 Credence Crematory 117-31198-00029 (final)			AFFIX STAMP HERE IF USED AS CERTIFICATE OF MAILING
Name and address of Sender	▶	Indiana Department of Environmental Management Office of Air Quality – Permits Branch 100 N. Senate Indianapolis, IN 46204	Type of Mail: **CERTIFICATE OF MAILING ONLY**	

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1		Erica Livingston Credence Crematory 4670 W CR 640 S Paoli IN 47454 (Source CAATS) via confirm delivery									
2		Mr. Wendell Hibdon Plumbers & Steam Fitters Union, Local 136 2300 St. Joe Industrial Park Dr Evansville IN 47720 *(Affected Party)*									
3		Mr. Alec Kalla 8733 W. Summit Circle Drive French Lick IN 47432 *(Affected Party)*									
4		Orange County Commissioners 205 East Main Street Paoli IN 47454 *(Local Official)*									
5		Paoli Town Council 110 N. Gospel St. Paoli IN 47454 *(Local Official)*									
6		Orange County Health Department 205 E Main Street Paoli IN 47454-1591 *(Health Department)*									
7		Mr. John Blair 800 Adams Ave Evansville IN 47713 *(Affected Party)*									
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