



Mitchell E. Daniels, Jr.
Governor

Thomas W. Easterly
Commissioner

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

TO: Interested Parties / Applicant
DATE: June 18, 2007
RE: City of Washington / 027-24758-00055
FROM: Nisha Sizemore
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, Room 1049, 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.dot 03/23/06



INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
We make Indiana a cleaner, healthier place to live.

Mitchell E. Daniels, Jr.
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June 18, 2007

Mr. Dennis Boring
City of Washington
213 South 200 West
Washington, IN 47501

Dear Mr. Boring:

Re: Exempt Construction and Operation Status,
027-24758-00055

The application from the City of Washington, received on May 16, 2007, 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 animal crematory, to be located at 213 South 200 West, Washington, Indiana, is classified as exempt from air pollution permit requirements:

One (1) crematory incinerator for animal remains, identified as C500P, with a maximum capacity of 75 pounds per hour, using natural gas as supplemental fuel, at a rate of 2.0 MMBtu per hour, and exhausting through one (1) stack.

The following conditions shall be applicable:

- (1) Pursuant to 326 IAC 5-1-2 (Opacity Limitations) except as provided in 326 IAC 5-1-3 (Temporary Exemptions), opacity shall meet the following:
 - (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 15 minutes (60 readings) in a 6-hour period 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.
- (2) Pursuant to 326 IAC 4-2-2, the crematory incinerator shall:
 - (a) consist of primary and secondary chambers or the equivalent;
 - (b) be equipped with a primary burner unless burning wood products;
 - (c) comply with 326 IAC 5-1 and 326 IAC 2;
 - (d) be maintained properly as specified by the manufacturer and approved by the commissioner;
 - (e) be operated according to the manufacturer's recommendations and only burn waste approved by the commissioner;

- (f) comply with other state and/or local rules or ordinances regarding installation and operation of incinerators;
- (g) be operated so that emissions of hazardous material including, but not limited to, viable pathogenic bacteria, dangerous chemicals or gases, or noxious odors are prevented;
- (h) not emit particulate matter in excess of five-tenths (0.5) pounds of particulate matter per one thousand (1,000) pounds of dry exhaust gas at standard conditions corrected to fifty percent (50%) excess air; and
- (i) not create a nuisance or a fire hazard.

The operation of the incinerators shall be terminated immediately upon noncompliance with any of the above mentioned requirements.

This exemption is the first air approval issued to this source.

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.

Sincerely,

Original signed by

Nisha Sizemore, Chief
Permits Branch
Office of Air Quality

AB/EVP

cc: File – Daviess County
Southwest Regional Office
Air Compliance – Gene Kelso
Permit Tracking
Compliance Data Section

Indiana Department of Environmental Management Office of Air Quality

Technical Support Document (TSD) for an Exemption

Source Background and Description

Source Name:	City of Washington
Source Location:	213 South 200 West, Washington, IN 47501
County:	Daviess
SIC Code:	7261
Operation Permit No.:	E027-24758-00055
Permit Reviewer:	Alic Bent / EVP

The Office of Air Quality (OAQ) has reviewed an application from the City of Washington relating to the construction and operation of an animal crematory.

New Emission Units and Pollution Control Equipment

The source consists of the following new emission units and pollution control devices during this review process:

- (a) One (1) crematory incinerator for animal remains, identified as C500P, with a maximum capacity of 75 pounds per hour, using natural gas as supplemental fuel, at a rate of 2.0 MMBtu per hour, and exhausting through one (1) stack.

Existing Approvals

The source has no existing approvals.

Enforcement Issue

There are no enforcement actions pending.

Emission Calculations

See Appendix A of this document for detailed emission calculations.

County Attainment Status

The source is located in Daviess County.

Pollutant	Status
PM2.5	Attainment
PM-10	Attainment
SO ₂	Attainment
NO ₂	Attainment
8-hr Ozone	Attainment
CO	Attainment
Lead	Attainment

Unrestricted Potential Emissions

This table reflects the unrestricted potential emissions of the source.

Pollutant	Potential To Emit (tons/year)
PM	1.15
PM-10	1.25
SO ₂	0.41
VOC	0.49
CO	2.34
NO _x	1.39

HAPs	tons/year
Benzene	Neg.
Formaldehyde	Neg.
Hexane	Neg.
Toluene	Neg.
Total	Neg.

- (a) The potential to emit as defined in 326 IAC 2-1.1-1 (16) of all the regulated pollutants is lower than the registration applicability thresholds. Therefore, pursuant to 326 IAC 2-1.1-3(d)(3), this is an exempt source.

Part 70 Permit Determination

This new source is not subject to the Part 70 Permit requirements because the potential to emit (PTE) of:

- (a) each criteria pollutant is less than 100 tons per year,
- (b) a single hazardous air pollutant (HAP) is less than 10 tons per year, and
- (c) any combination of HAPs is less than 25 tons/year.

This is the first air approval issued to this source.

Federal Rule Applicability

- (a) There are no New Source Performance Standards (NSPS) (326 IAC 12 and 40 CFR Part 60) included in this review.
- (b) There are no National Emission Standards for Hazardous Air Pollutants (NESHAP)(326 IAC 14, 20 and 40 CFR Part 61, 63) included in this review.

State Rule Applicability - Entire Source

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 or Porter counties, 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 to this source.

326 IAC 4-2-1 (Incinerators)

The one (1) natural gas fired incinerator, rated at 2.0 MMBtu/hr, is subject to the requirements of 326 IAC 4-2-1. Pursuant to this rule, the incinerator shall:

- (a) consist of primary and secondary chambers or the equivalent;
- (b) be equipped with a primary burner unless burning wood products;
- (c) comply with 326 IAC 5-1 and 326 IAC 2;
- (d) be maintained properly as specified by the manufacturer and approved by the commissioner;
- (e) be operated according to the manufacturer's recommendations and only burn waste approved by the commissioner;
- (f) comply with other state and/or local rules or ordinances regarding installation and operation of incinerators;
- (g) be operated so that emissions of hazardous material including, but not limited to, viable pathogenic bacteria, dangerous chemicals or gases, or noxious odors are prevented;
- (h) not emit particulate matter in excess of five-tenths (0.5) pounds of particulate matter per one thousand (1,000) pounds of dry exhaust gas at standard conditions corrected to fifty percent (50%) excess air; and
- (i) not create a nuisance or a fire hazard.

If any of the above result, the burning shall be terminated immediately.

The animal crematory incinerator have a maximum exhaust rate of 0.19 pounds of PM per 1000 pounds of dry exhaust gas, corrected to fifty percent (50%) excess air. Therefore, the incinerator is in compliance with this rule.

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:

- (a) Opacity shall not exceed an average of forty percent (40%) 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 nonoverlapping integrated averages for a continuous opacity monitor) in a six (6) hour period.

326 IAC 8-1-6 (New Facilities; General VOC Reduction Requirements)

This rule applies to facilities located anywhere in the State that were constructed on or after January 1, 1980, which have a potential to emit (PTE) VOC at 25 tons per year or more, and which are not otherwise regulated by another provision of Article 8. This animal crematory incinerator does not have a PTE VOC at 25 tons per year or more. Therefore, 326 IAC 8-1-6 does not apply.

Recommendation

The staff recommends to the Commissioner that the operation be approved. This recommendation is based on the following facts and conditions:

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 May 16, 2007.

Conclusion

The construction and operation of this animal crematory shall be subject to the conditions of the attached proposed Exemption 027-24758-00055.

**Appendix A: Emissions Calculations
Crematory Incinerator**

**Company Name: City of Washington
Address City IN Zip: 213 South 200 West, Washington, IN 47501
Exemption No.: 027-24758-00055
Reviewer: Alic Bent / EVP**

Maximum Capacity of Incinerator: 75 lbs/hr

Pollutant	Emission Factor (lb/ton)	Potential Emissions (lbs/hr)	Potential Emissions (tons/yr)
PM / PM10	7	0.2625	1.15
CO	10	0.375	1.64
NOx	3	0.1125	0.49
VOC	3	0.1125	0.49
SO2	2.5	0.09375	0.41

Note: There are no known HAP emissions from this incinerator

Potential Emissions (lb/hr) = Maximum Capacity (lb/hr) * Emission Factor (lb/ton) * 1 ton/2000 lbs

Potential Emissions (ton/yr) = Potential Emissions (lb/hr) * 8760 hrs/yr * 1 ton/2000 lbs

Appendix A: Emissions Calculations

Natural Gas Combustion Only

MM BTU/HR <100

Incinerator Emissions

Company Name: City of Washington
Address City IN Zip: 213 South 200 West, Washington, IN 47501
Exemption No.: 027-24758-00055
Reviewer: Alic Bent / EVP

Heat Input Capacity
MMBtu/hr

Potential Throughput
MMCF/yr

2.0

17.5

One (1) crematory burner, rated at 2.0 MMBtu/hr

Pollutant

	PM*	PM10*	SO2	NOx	VOC	CO
Emission Factor in lb/MMCF	1.9	7.6	0.6	100.0	5.5	84.0
				**see below		
Potential Emission in tons/yr	0.0	0.1	0.0	0.9	0.0	0.7

*PM emission factor is filterable PM only. PM10 emission factor is filterable and condensable PM10 combined.

**Emission Factors for NOx: Uncontrolled = 100, Low NOx Burner = 50, Low NOx Burners/Flue gas recirculation = 32

Methodology

All emission factors are based on normal firing.

MMBtu = 1,000,000 Btu

MMCF = 1,000,000 Cubic Feet of Gas

Potential Throughput (MMCF) = Heat Input Capacity (MMBtu/hr) x 8,760 hrs/yr x 1 MMCF/1,000 MMBtu

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 (SUPPLEMENT D 3/98)

Emission (tons/yr) = Throughput (MMCF/yr) x Emission Factor (lb/MMCF)/2,000 lb/ton

See page 2 for HAPs emissions calculations.

Appendix A: Emissions Calculations
Natural Gas Combustion Only
MM BTU/HR <100
Incinerator Emissions
HAPs Emissions

Company Name: City of Washington
Address City IN Zip: 213 South 200 West, Washington, IN 47501
Exemption No.: 027-24758-00055
Reviewer: Alic Bent / EVP

HAPs - Organics

Emission Factor in lb/MMcf	Benzene 2.1E-03	Dichlorobenzene 1.2E-03	Formaldehyde 7.5E-02	Hexane 1.8E+00	Toluene 3.4E-03
Potential Emission in tons/yr	1.840E-05	1.051E-05	6.570E-04	1.577E-02	2.978E-05

HAPs - Metals

Emission Factor in lb/MMcf	Lead 5.0E-04	Cadmium 1.1E-03	Chromium 1.4E-03	Manganese 3.8E-04	Nickel 2.1E-03
Potential Emission in tons/yr	4.380E-06	9.636E-06	1.226E-05	3.329E-06	1.840E-05

Methodology is the same as page 1.

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

**Appendix A: Emissions Calculations
Incinerator Compliance with 326 IAC 4-2-2**

**Company Name: City of Washington
Address City IN Zip: 213 South 200 West, Washington, IN 47501
Exemption No.: 027-24758-00055
Reviewer: Alic Bent / EVP**

Animal Crematory Incinerator

Potential PM emissions	0.26 lb/hr
Stack gas flow rate	900.00 acfm
Gas temperature	1850.00 deg F
Incinerator Throughput	75.00 lb/hr

Q,std = Volumetric flow rate at Standard Temperature

$$Q_{std} = 900 \text{ acfm} \times \frac{529 \text{ deg R}}{2309} = 206.19 \text{ dscfm}$$

Cs = PM Concentration

$$Cs = \frac{0.26 \text{ lb/hr}}{206.19 \text{ dscfm}} \times \frac{7000 \text{ gr/lb}}{60 \text{ min/hr}} = 0.149 \text{ gr/dscf}$$

Corrected to 50% excess air

$$Cs, \text{ corrected} = 0.149 \text{ gr/dscf} \times \frac{(100+0)\%}{150\%} = 0.099 \text{ gr/dscf}$$

Ideal Gas Law

Specific Volume = $\frac{R \times T}{P \times Mw}$ where

R = gas constant = $\frac{21.9(\text{in Hg})(\text{ft}^3)}{(\text{lb mol})(\text{deg R})}$

T = standard temp = 529 deg R

P = standard pressure = 29.45 in Hg

Mw = avg molecular weight of air = 29 lb/lbmol

Specific Volume = **13.565** cf/lb air

$$Cs, \text{ corrected} = 0.099 \text{ gr/dscf} \times 13.565 \text{ cf/lb air} = 1.343 \text{ gr/lb air}$$

$$1.343 \text{ gr/lb air} \times \frac{1}{7000} \text{ lb pm/gr} = 0.00019 \text{ lb PM/lb dry gas} = \mathbf{0.1919} \text{ lb PM/1000 lb dry gas}$$

Maximum allowable particulate emission pursuant to 326 IAC 4-2-2 is 0.5 lb PM/1000 lb dry gas.
The animal crematory incinerator is in compliance with 326 IAC 4-2-2.