



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 30, 2011

RE: Pet Angel World Services, LLC / 097-31300-00639

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

Notice of Decision: Approval - Registration

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 IC 4-21.5-3-4(d) this order is effective when it is served. When served by U.S. mail, the order is effective three (3) calendar days from the mailing of this notice pursuant to IC 4-21.5-3-2(e).

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 of 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
FN-REGIS.dot 1/2/08



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REGISTRATION OFFICE OF AIR QUALITY

Pet Angel World Services, LLC
4202 S. Meridian St.
Indianapolis, IN 46217

Pursuant to 326 IAC 2-5.1 (Construction of New Sources: Registrations) and 326 IAC 2-5.5 (Registrations), (herein known as the Registrant) is hereby authorized to construct and operate subject to the conditions contained herein, the source described in Section A (Source Summary) of this registration.

Registration No. R097-30810-00639	
Original signed by: Alfred C. Dumauual, Ph.D., Section Chief Permits Branch Office of Air Quality	Issuance Date: October 17, 2011

First Registration Revision No. 097-31300-00639	
Issued by:  Iryn Calilung, Section Chief Permits Branch Office of Air Quality	Issuance Date: December 30, 2011

SECTION A

SOURCE SUMMARY

This registration is based on information requested by the Indiana Department of Environmental Management (IDEM), Office of Air Quality (OAQ). The information describing the source contained in conditions A.1 and A.2 is descriptive information and does not constitute enforceable conditions. However, the Registrant should be aware that a physical change or a change in the method of operation that may render this descriptive information obsolete or inaccurate may trigger requirements for the Registrant to obtain additional permits pursuant to 326 IAC 2.

A.1 General Information

The Registrant owns and operates a stationary animal crematory type of source.

Source Address:	4202 S. Meridian St., Indianapolis, IN 46217
General Source Phone Number:	317-791-1070
SIC Code:	7261 (Funeral Service and Crematories)
County Location:	Marion County
Source Location Status:	Nonattainment for PM 2.5 standard Attainment for all other criteria pollutants
Source Status:	Registration

A.2 Emission Units and Pollution Control Equipment Summary

This stationary source consists of the following emission units and pollution control devices:

- (a) Two (2) Therm Tec S-27-T animal crematories, with multiple chambers, identified as PC-1 and PC-2, constructed in 2008, each with a maximum operating capacity of 75 pounds per hour (lbs/hr), using natural gas as a supplemental fuel, each with a maximum heat input capacity of 0.8 million Btu per hour (MMBtu/hr).
- (b) One (1) Crawford CB1200 animal crematory, with multiple chambers, identified as PC-4, approved for construction in 2011, with a maximum operating capacity of 300 pounds per hour (lbs/hr), using natural gas as a supplemental fuel, with a maximum heat input capacity of 2.0 million Btu per hour (MMBtu/hr).
- (c) One (1) BLI 400/75 Animal Cremator, with multiple chambers, identified as BL-01, approved for construction in 2012, with a maximum operating capacity of 75 pounds per hour (lbs/hr), using natural gas, with a maximum heat input capacity of 1.4 million Btu per hour (MMBtu/hr).

SECTION B

GENERAL CONDITIONS

B.1 Definitions [326 IAC 2-1.1-1]

Terms in this registration shall have the definition assigned to such terms in the referenced regulation. In the absence of definitions in the referenced regulation, the applicable definitions found in the statutes or regulations (IC 13-11, 326 IAC 1-2 and 326 IAC 2-1.1-1) shall prevail.

B.2 Effective Date of Registration [IC 13-15-5-3]

Pursuant to IC 13-15-5-3, this registration is effective immediately, unless a petition for stay of effectiveness is filed and granted according to IC 13-15-6-3, and may be revoked or modified in accordance with the provisions of IC 13-15-7-1.

B.3 Registration Revocation [326 IAC 2-1.1-9]

Pursuant to 326 IAC 2-1.1-9 (Revocation), this registration to operate may be revoked for any of the following causes:

- (a) Violation of any conditions of this registration.
- (b) Failure to disclose all the relevant facts, or misrepresentation in obtaining this registration.
- (c) Changes in regulatory requirements that mandate either a temporary or permanent reduction of discharge of contaminants. However, the amendment of appropriate sections of this registration shall not require revocation of this registration.
- (d) For any cause which establishes in the judgment of the fact that continuance of this registration is not consistent with purposes of this article.

B.4 Prior Permits Superseded [326 IAC 2-1.1-9.5]

- (a) All terms and conditions of permits established prior to Registration No. 097-30810-00639 and issued pursuant to permitting programs approved into the state implementation plan have been either:
 - (1) incorporated as originally stated,
 - (2) revised, or
 - (3) deleted.
- (b) All previous registrations and permits are superseded by this registration.

B.5 Annual Notification [326 IAC 2-5.1-2(f)(3)] [326 IAC 2-5.5-4(a)(3)]

Pursuant to 326 IAC 2-5.1-2(f)(3) and 326 IAC 2-5.5-4(a)(3):

- (a) An annual notification shall be submitted by an authorized individual to the Office of Air Quality stating whether or not the source is in operation and in compliance with the terms and conditions contained in this registration.
- (b) The annual notice shall be submitted in the format attached no later than March 1 of each year to:

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

Indianapolis, IN 46204-2251

- (c) The notification shall be considered timely if the date postmarked on the envelope or certified mail receipt, or affixed by the shipper on the private shipping receipt, is on or before the date it is due. If the document is submitted by any other means, it shall be considered timely if received by IDEM, OAQ on or before the date it is due.

B.6 Source Modification Requirement [326 IAC 2-5.5-6(a)]

Pursuant to 326 IAC 2-5.5-6(a), 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.

B.7 Registrations [326 IAC 2-5.1-2(i)]

Pursuant to 326 IAC 2-5.1-2(i), this registration does not limit the source's potential to emit.

B.8 Preventive Maintenance Plan [326 IAC 1-6-3]

- (a) If required by specific condition(s) in Section D of this registration, the Registrant shall prepare and maintain Preventive Maintenance Plans (PMPs) no later than ninety (90) days after issuance of this registration or ninety (90) days after initial start-up, whichever is later, including the following information on each facility:

- (1) Identification of the individual(s) responsible for inspecting, maintaining, and repairing emission control devices;
- (2) A description of the items or conditions that will be inspected and the inspection schedule for said items or conditions; and
- (3) Identification and quantification of the replacement parts that will be maintained in inventory for quick replacement.

If, due to circumstances beyond the Registrant's control, the PMPs cannot be prepared and maintained within the above time frame, the Registrant may extend the date an additional ninety (90) days provided the Registrant notifies:

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

The Registrant shall implement the PMPs.

- (b) A copy of the PMPs shall be submitted to IDEM, OAQ upon request and within a reasonable time, and shall be subject to review and approval by IDEM, OAQ. IDEM, OAQ may require the Registrant to revise its PMPs whenever lack of proper maintenance causes or is the primary contributor to an exceedance of any limitation on emissions.
- (c) To the extent the Registrant is required by 40 CFR Part 60 or 40 CFR Part 63 to have an Operation Maintenance, and Monitoring (OMM) Plan for a unit, such OMM Plan is deemed to satisfy the PMP requirements of 326 IAC 1-6-3 for that unit.

SECTION C

SOURCE OPERATION CONDITIONS

Entire Source

Emission Limitations and Standards [326 IAC 2-5.1-2(g)] [326 IAC 2-5.5-4(b)]

C.1 Opacity [326 IAC 5-1]

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 registration:

- (a) Opacity shall not exceed an average of thirty percent (30%) 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 nonoverlapping integrated averages for a continuous opacity monitor) in a six (6) hour period.

C.2 Fugitive Dust Emissions [326 IAC 6-4]

The Registrant 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 (Fugitive Dust Emissions).

SECTION D.1

OPERATION CONDITIONS

Facility Description [326 IAC 2-5.1-2(f)(2)] [326 IAC 2-5.5-4(a)(2)]:

- (a) Two (2) Therm Tec S-27-T animal crematories, with multiple chambers, identified as PC-1 and PC-2, constructed in 2008, each with a maximum operating capacity of 75 pounds per hour (lbs/hr), using natural gas as a supplemental fuel, each with a maximum heat input capacity of 0.8 million Btu per hour (MMBtu/hr).
- (b) One (1) Crawford CB1200 animal crematory, with multiple chambers, identified as PC-4, approved for construction in 2011, with a maximum operating capacity of 300 pounds per hour (lbs/hr), using natural gas as a supplemental fuel, with a maximum heat input capacity of 2.0 million Btu per hour (MMBtu/hr).
- (c) One (1) BLI 400/75 Animal Cremator, with multiple chambers, identified as BL-01, approved for construction in 2012, with a maximum operating capacity of 75 pounds per hour (lbs/hr), using natural gas, with a maximum heat input capacity of 1.4 million Btu per hour (MMBtu/hr).

(The information describing the process contained in this emissions unit description box is descriptive information and does not constitute enforceable conditions.)

Emission Limitations and Standards [326 IAC 2-5.1-2(f)(1)] [326 IAC 2-5.5-4(a)(1)]

D.1.1 Incinerators [326 IAC 4-2-2]

Pursuant to 326 IAC 4-2-2 (Incinerators), the crematory incinerators PC-1, PC-2, BL-01 and PC-4 shall:

- (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 326 IAC 4-2-2(c); and
- (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.
- (6) If any of the above requirements (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.
- (8) An owner or operator developing an operation and maintenance plan pursuant to subsection (a)(4) must comply with the following:
 - (1) The operation and maintenance plan must be designed to meet the particulate matter emission limitation specified in subsection (a)(5) 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.
- (9) Each incinerator operator shall review the plan before initial implementation of the operation and maintenance plan and annually thereafter.
 - (10) The operation and maintenance plan must be readily accessible to incinerator operators.
 - (11) 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.
 - (12) The owner or operator of the incinerator must make the manufacturer's specifications or the operation and maintenance plan available to the department upon request.

D.1.2 NSPS for Commercial and Industrial Solid Waste Incinerations Units

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 Registrant shall comply with the following:

- (a) The Registrant 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 Registrant 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 Registrant 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 Registrant, the Registrant shall furnish the records to the Commissioner within a reasonable time.

**INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF AIR QUALITY
COMPLIANCE AND ENFORCEMENT BRANCH**

**REGISTRATION
ANNUAL NOTIFICATION**

This form should be used to comply with the notification requirements under 326 IAC 2-5.1-2(f)(3) and 326 IAC 2-5.5-4(a)(3).

Company Name:	Pet Angel World Services LLC
Address:	4202 S. Meridian St.
City:	Indianapolis, IN 46217
Phone Number:	317-791-1070
Registration No.:	R097-30810-00639

- I hereby certify that Pet Angel World Services, LLC is :
- still in operation.
 - no longer in operation.
- I hereby certify that Pet Angel World Services, LLC is :
- in compliance with the requirements of Registration No. R097-30810-00639.
 - not in compliance with the requirements of Registration No. R097-30810-00639.

Authorized Individual (typed):
Title:
Signature:
Phone Number:
Date:

If there are any conditions or requirements for which the source is not in compliance, provide a narrative description of how the source did or will achieve compliance and the date compliance was, or will be achieved.

Noncompliance:

Indiana Department of Environmental Management Office of Air Quality

Technical Support Document (TSD) for a Registration Revision

Source Description and Location

Source Name:	Pet Angel World Services
Source Location:	4202 S. Meridian St., Indianapolis, IN 46217
County:	Marion
SIC Code:	7261 (Funeral Service and Crematories)
Registration No.:	097-30810-00639
Registration Issuance Date:	October, 17 2011
Registration Revision No.:	097-31300-00639
Permit Reviewer:	Deena Patton

On December 21, 2011, the Office of Air Quality (OAQ) received an application from Pet Angel World Services related to a modification to an existing stationary pet crematory.

Existing Approvals

The source was issued Registration No. 097-30810-00639 on October, 17 2011.

County Attainment Status

The source is located in Marion County.

Pollutant	Designation
SO ₂	Better than national standards.
CO	Attainment effective February 18, 2000, for the part of the city of Indianapolis bounded by 11th street on the north; Capitol Avenue on the west; Georgia Street on the south; and Delaware Street on the east. Unclassifiable or attainment effective November 15, 1990, for the remainder of Indianapolis and Marion County.
O ₃	Attainment effective November 8, 2007, for the 8-hour ozone standard.
PM ₁₀	Unclassifiable effective November 15, 1990.
NO ₂	Cannot be classified or better than national standards.
Pb	Attainment effective July 10, 2000, for the part of Franklin Township bounded by Thompson Road on the south; Emerson Avenue on the west; Five Points Road on the east; and Troy Avenue on the north. Attainment effective July 10, 2000, for the part of Wayne Township bounded by Rockville Road on the north; Girls School Road on the east; Washington Street on the south; and Bridgeport Road on the west. The remainder of the county is not designated.
¹ Attainment effective October 18, 2000, for the 1-hour ozone standard for the Indianapolis area, including Marion County, and is a maintenance area for the 1-hour ozone National Ambient Air Quality Standards (NAAQS) for purposes of 40 CFR 51, Subpart X. The 1-hour designation was revoked effective June 15, 2005. Basic nonattainment designation effective federally April 5, 2005, for PM _{2.5} .	

- (a) Ozone Standards
 Volatile organic compounds (VOC) and Nitrogen Oxides (NO_x) 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. Marion 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}**
 Marion County has been classified as nonattainment for PM_{2.5} in 70 FR 943 dated January 5, 2005. On May 8, 2008, U.S. EPA promulgated specific New Source Review rules for PM_{2.5} emissions. These rules became effective on July 15, 2008. Therefore, direct PM_{2.5} and SO₂ emissions were reviewed pursuant to the requirements of Nonattainment New Source Review, 326 IAC 2-1.1-5. See the State Rule Applicability – Entire Source section.
- (c) **Other Criteria Pollutants**
 Marion County has been classified as attainment or unclassifiable in Indiana for CO, PM₁₀, and Pb. 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 2-5.1-2 (Registrations) applicability.

Status of the Existing Source

The table below summarizes the potential to emit of the entire source, prior to the proposed revision, after consideration of all enforceable limits established in the effective permits:

Process/ Emission Unit	Potential To Emit of the Entire Source Prior to Revision (R097-30810-00639) (tons/year)									
	PM	PM10	PM2.5	SO ₂	NOx	VOC	CO	GHGs as CO ₂ e**	Total HAPs	Worst Single HAP
Incineration PC-1	1.15	1.15	1.15	0.41	0.49	0.49	1.64	2,271	--	--
Incineration PC-2	1.15	1.15	1.15	0.41	0.49	0.49	1.64		--	--
Incineration PC-3	0.92	0.92	0.92	.33	.39	.39	1.31		--	--
Incineration PC-4	4.60	4.60	4.60	1.64	1.97	1.97	6.57		--	--
Natural Gas Combustion	0.04	0.14	0.14	0.01	1.88	0.10	1.58	2,274	0.036	0.034 (n-Hexane)
Paved Roads	0.03	0.01	0.01	--	--	--	--	--	--	--
Total PTE of Entire Source	7.89	7.97	7.97	2.80	5.22	3.44	12.74	4,545	0.036	0.034
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
 These emissions are based upon Registration (R097-30810-00639).
 **The 100,000 CO₂e 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.

Description of Proposed Revision

The Office of Air Quality (OAQ) has reviewed an application, submitted by Pet Angel World Services on December 21, 2011 relating to the construction and operation of a new pet crematory oven, identified as BL-01. This new unit will replace the existing PC-3 crematory oven that was constructed in 2008.

The following is a list of the new emission unit:

- (a) One (1) pet crematory oven, identified as BL-01, approved for construction in 2012, with a maximum capacity of 75 pounds per hour and exhausting to stack ST-2.

Enforcement Issues

There are no pending enforcement actions related to this revision.

Emission Calculations

See Appendix A of this TSD for detailed emission calculations.

Permit Level Determination – Registration Revision

The following table is used to determine the appropriate permit level under 326 IAC 2-5.5-6. This table reflects the PTE before controls of the proposed revision.

Process/ Emission Unit	PTE of Proposed Revision (tons/year)									
	PM	PM10	PM2.5	SO ₂	NO _x	VOC	CO	GHGs as CO ₂ e	Total HAPs	Worst Single HAP
Incinerator BL-01	1.15	1.15	1.15	0.41	0.49	0.49	1.64	334	--	--
Incinerator CP-3	0.92	0.92	0.92	0.33	0.39	0.39	1.31	267	--	--
Total PTE of Proposed Revision	1.15	1.15	1.15	0.41	0.49	0.49	1.64	334	--	--

negl. = negligible

This Registration is being revised through a Registration Revision pursuant to 326 IAC 2-5.5.6(g), because the revision involves the construction of an emission unit with potential to emit (PTE) PM and PM10/PM2.5, greater than the thresholds in 326 IAC 2-5.5.1(b)(1)(A) and 326 IAC 2-5.5.6(d)(12).

PTE of the Entire Source After Issuance of the Registration Revision

The table below summarizes the potential to emit of the entire source after issuance of this revision, reflecting all limits, of the emission units.

Process/ Emission Unit	Potential To Emit of the Entire Source with the Revision (tons/year)									
	PM	PM10*	PM2.5	SO ₂	NO _x	VOC	CO	GHGs as CO ₂ e**	Total HAPs	Worst Single HAP
Incinerator CP-1	1.15	1.15	1.15	0.41	0.49	0.49	1.64	334	--	--
Incinerator CP-2	1.15	1.15	1.15	0.41	0.49	0.49	1.64	334	--	--
Incinerator CP-3	0.92	0.92	0.92	0.33	0.39	0.39	1.31	267	--	--
Incinerator CP-4	4.60	4.60	4.60	1.64	1.97	1.97	6.57	1336	--	--
Incinerator BL-01	1.15	1.15	1.15	0.41	0.49	0.49	1.64	334	--	--
Natural Gas Combustion	0.04	0.17	0.17	0.01	2.19	0.12	1.84	2644	.0413	0.039 (Hexane)
Paved Roads	0.03	0.01	0.01	--	--	--	--	--	--	--
Total PTE of Entire Source	7.89 8.12	7.97 8.23	7.97 8.23	2.80 2.88	5.22 5.63	3.44 3.56	12.74 13.33	4585 4981	0.036 .0413	0.034 0.039
Exemptions Levels	5	5	5	10	10	5 10	25	100,000	25	10
Registration Levels	25	25	25	25	25	25	100	100,000	25	10

Process/ Emission Unit	Potential To Emit of the Entire Source with the Revision (tons/year)									
	PM	PM10*	PM2.5	SO ₂	NO _x	VOC	CO	GHGs as CO ₂ e**	Total HAPs	Worst Single HAP
-- = 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 ₂ e 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.										

The table below summarizes the potential to emit of the entire source after issuance of this revision, reflecting all limits, of the emission units.

Process/ Emission Unit	Potential To Emit of the Entire Source with the Revision (tons/year)									
	PM	PM10*	PM2.5	SO ₂	NO _x	VOC	CO	GHGs as CO ₂ e**	Total HAPs	Worst Single HAP
Incinerator CP-1	1.15	1.15	1.15	0.41	0.49	0.49	1.64	334	--	--
Incinerator CP-2	1.15	1.15	1.15	0.41	0.49	0.49	1.64	334	--	--
Incinerator CP-4	4.60	1.64	1.64	1.64	1.97	1.97	6.57	1336	--	--
Incinerator BL-01	1.15	1.15	1.15	0.41	0.49	0.49	1.64	334	--	--
Natural Gas Combustion	0.04	0.17	0.17	0.01	2.19	0.12	1.84	2644	.0413	0.039 (hexane)
Paved Roads	0.03	0.01	0.01	--	--	--	--	--	--	--
Total PTE of Entire Source	8.12	8.23	8.23	2.88	5.63	3.56	13.33	4981	0.0413	0.039
Exemptions Levels	5	5	5	10	10	5	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 ₂ e 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) This revision will not change the registration status of the source, because the uncontrolled/unlimited potential to emit of PM, PM10, and PM2.5 from the entire source will still be within the ranges listed in 326 IAC 2-5.5-1(b)(1) and the PTE of all other regulated criteria pollutants will still be less than the ranges listed in 326 IAC 2-5.5-1(b)(1). Therefore, the source will still be subject to the provisions of 326 IAC 2-5.5 (Registrations).
- (b) This revision will not change the minor status of the source, because the uncontrolled/unlimited potential to emit of any single HAP will still be less than ten (10) tons per year and the PTE of a combination of HAPs will still be 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) This revision will not change the minor status of the source, because the uncontrolled/unlimited potential to emit greenhouse gases (GHGs) will still be less than the Title V subject to regulation threshold of one hundred thousand (100,000) tons of CO₂ equivalent emissions (CO₂e) 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 registration, 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 registration because crematory incinerator is considered a pathological waste combustor and is not considered a municipal waste combustor or hospital/medical/infectious waste incinerator:
- (1) 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)
 - (2) 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)
 - (3) 40 CFR 60, Subpart Ec (60.50c through 60.58c), Standards of Performance for Hospital/Medical/Infectious Waste Incinerators for Which Construction is Commenced after January 20, 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 or 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 registration, 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 40 CFR 60, Subpart CCCC (60.2000 through 60.2265), Standards of Performance 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 (326 IAC 12), are not included in this registration because this unit is considered pathological waste incineration unit (40 CFR60.2020(a)).
- (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 registration, 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 registration, 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 registration, 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 state rules applicable to the existing emission units at this source will not change as a result of this revision.

The following state rules are applicable to the proposed revision:

- (a) 326 IAC 2-5.5 (Registrations)
Registration applicability is discussed under the Permit Level Determination – Registration section above.
- (b) 326 IAC 2-4.1 (Major Sources of Hazardous Air Pollutants (HAP))
The proposed revision is not subject to the requirements of 326 IAC 2-4.1, since the unlimited potential to emit of HAPs from the new unit is less than ten (10) tons per year for any single HAP and less than twenty-five (25) tons per year of a combination of HAPs.
- (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 thirty percent (30%) 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.
- (e) 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.

Crematory

- (f) 326 IAC 4-2 (Incinerators)
Pursuant to 326 IAC 4-2-2 (Incinerators), the crematory incinerators PC-1, PC-2, BL-01 and PC-4 shall:
- (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 326 IAC 4-2-2(c);
and
 - (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.
 - (6) If any of the above requirements (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.
 - (8) An owner or operator developing an operation and maintenance plan pursuant to subsection (a)(4) must comply with the following:
 - (1) The operation and maintenance plan must be designed to meet the particulate matter emission limitation specified in subsection (a)(5) 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.
 - (9) Each incinerator operator shall review the plan before initial implementation of the operation and maintenance plan and annually thereafter.
 - (10) The operation and maintenance plan must be readily accessible to incinerator operators.
 - (11) 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.
 - (12) The owner or operator of the incinerator must make the manufacturer's specifications or the operation and maintenance plan available to the department upon request.
- (g) 326 IAC 6-2 (Particulate Emission Limitations for Sources of Indirect Heating)
The crematory is not considered a source of indirect heating. Therefore, the crematories are not subject to the provisions of 326 IAC 6-2.
- (h) 326 IAC 6-3 (Particulate Emission Limitations for Manufacturing Processes)
The crematories, PC-1, PC-2, BL-01 and PC-4 are incinerators. Pursuant to 326 IAC 6-3-1(b)(2), incinerators are exempt from the provisions of 326 IAC 6-3. Therefore, the crematories are not

subject to the provisions of 326 IAC 6-3.

- (i) 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.
- (j) 326 IAC 6-5 (Fugitive Particulate Matter Emission Limitations)
The crematory incinerators, PC-1, PC-2, BL-01 and PC-4 are 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.
- (k) 326 IAC 7-1 (Sulfur dioxide emission limitations: Applicability)
The crematory incinerators, PC-1, PC-2, BL-01 and PC-4 are 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.
- (l) 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.
- (m) 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 incinerators, PC-1, PC-2, BL-01 and PC-4 burn pathological waste and do not burn refuse consisting of more than 50 percent municipal type waste (household, commercial/retail, and/or institutional waste).
- (n) 326 IAC 11-7 (Emission Limitations for Municipal Waste Combustors)
The crematory incinerators, PC-1, PC-2, BL-01 and PC-4, are not subject to the requirements of 326 IAC 11-7, since the crematory incinerators are considered pathological waste combustors and not considered municipal waste combustors.
- (o) 326 IAC 11-8 (Emission Limitations for Commercial and Industrial Solid Waste Incineration Units)
Pursuant to 326 IAC 11-8-1(b)(1), the crematory incinerators, PC-1, PC-2, BL-01 and PC-4, are not subject to the requirements of 326 IAC 11-8, because the crematory incinerators burn 90 % or more by weight of pathological waste and provided that the following are met:
 - (a) The Permittee shall notify the department and U.S. EPA that the unit meets the criteria in this subdivision.
 - (b) The Permittee shall keep records on a calendar quarter basis of the weight of pathological waste, low-level radioactive waste, chemotherapeutic waste, or any combination of these wastes burned, and the weight of all other fuels and wastes burned in the unit.
- (p) 326 IAC 12 (New Source Performance Standards)
See Federal Rule Applicability Section of this TSD.
- (q) 326 IAC 20 (Hazardous Air Pollutants)
See Federal Rule Applicability Section of this TSD.

Proposed Changes

The following changes listed below are due to the proposed revision. Deleted language appears as ~~strikethrough~~ text and new language appears as **bold** text:

A.2 Emission Units and Pollution Control Equipment Summary

This stationary source consists of the following emission units and pollution control devices:

- (a) Two (2) Therm Tec S-27-T animal crematories, with multiple chambers, identified as PC-1 and PC-2, constructed in 2008, each with a maximum operating capacity of 75 pounds per hour (lbs/hr), using natural gas as a supplemental fuel, each with a maximum heat input capacity of 0.8 million Btu per hour (MMBtu/hr).
- ~~(b) One (1) Fire Lake Shenandoah C-12-400 animal crematory, with multiple chambers, identified as PC-3, constructed in 2008, with a maximum operating capacity of 60 pounds per hour (lbs/hr), using natural gas as a supplemental fuel, with a maximum heat input capacity of 0.7 million Btu per hour (MMBtu/hr).~~
- (c) One (1) Crawford CB1200 animal crematory, with multiple chambers, identified as PC-4, approved for construction in 2011, with a maximum operating capacity of 300 pounds per hour (lbs/hr), using natural gas as a supplemental fuel, with a maximum heat input capacity of 2.0 million Btu per hour (MMBtu/hr).
- (d) One (1) BLI 400/75 Animal Cremator, with multiple chambers, identified as BL-01, approved for construction in 2012, with a maximum operating capacity of 75 pounds per hour (lbs/hr), using natural gas, with a maximum heat input capacity of 1.4 million Btu per hour (MMBtu/hr).**

...

SECTION D.1

OPERATION CONDITIONS

Facility Description [326 IAC 2-5.1-2(f)(2)] [326 IAC 2-5.5-4(a)(2)]:

- (a) Two (2) Therm Tec S-27-T animal crematories, with multiple chambers, identified as PC-1 and PC-2, constructed in 2008, each with a maximum operating capacity of 75 pounds per hour (lbs/hr), using natural gas as a supplemental fuel, each with a maximum heat input capacity of 0.8 million Btu per hour (MMBtu/hr).
- ~~(b) One (1) Fire Lake Shenandoah C-12-400 animal crematory, with multiple chambers, identified as PC-3, constructed in 2008, with a maximum operating capacity of 60 pounds per hour (lbs/hr), using natural gas as a supplemental fuel, with a maximum heat input capacity of 0.7 million Btu per hour (MMBtu/hr).~~
- (c) One (1) Crawford CB1200 animal crematory, with multiple chambers, identified as PC-4, approved for construction in 2011, with a maximum operating capacity of 300 pounds per hour (lbs/hr), using natural gas as a supplemental fuel, with a maximum heat input capacity of 2.0 million Btu per hour (MMBtu/hr).
- (d) One (1) BLI 400/75 Animal Cremator, with multiple chambers, identified as BL-01, approved for construction in 2012, with a maximum operating capacity of 75 pounds per hour (lbs/hr), using natural gas, with a maximum heat input capacity of 1.4 million Btu per hour (MMBtu/hr).**

(The information describing the process contained in this emissions unit description box is descriptive information and does not constitute enforceable conditions.)

. D.1.1 Incinerators [326 IAC 4-2-2]

Pursuant to 326 IAC 4-2-2 (Incinerators), the crematory incinerators PC-1, PC-2, ~~PC-3~~, **BL-01** and PC-4 shall:

..

D.1.2 NSPS for Commercial and Industrial Solid Waste Incinerations Units

1. 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 Registrant shall comply with the following:
 - (a) The Registrant 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 Registrant 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 Registrant 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 Registrant, the Registrant shall furnish the records to the Commissioner within a reasonable time.

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 21, 2011.

The construction and operation of this proposed revision shall be subject to the conditions of the attached proposed Registration Revision No. 097-31300-00639. The staff recommends to the Commissioner that this Registration Revision 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 4-5400
- (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

**Appendix A: Emissions Calculations
Uncontrolled Potential to Emit Summary**

Company Name: Pet Angel World Services, LLC
Address City IN Zip: 4202 S. Meridian St, Indianapolis, IN 46217
Permit Number: 097-31300-00639
Plt ID: 097-00639
Reviewer: Deena Patton
Date: December 2011

Uncontrolled Potential to Emit Before Revision (R097-30810-00639) (tons/year)					
Emissions Generating Activity					
Category	Pollutant	Incineration PC-1, PC-2 PC-3 & PC-4	Natural Gas Combustion	Paved Road	TOTAL
Criteria Pollutants	PM	7.82	0.04	0.03	7.89
	PM10/PM2.5	7.82	0.14	0.01	7.97
	SO2	2.79	0.01	negl.	2.80
	NOx	3.35	1.88	negl.	5.23
	VOC	3.35	0.10	negl.	3.45
	CO	11.17	1.58	negl.	12.75
GHGs	CO2e	2271	2,274	negl.	4,545
Hazardous Air Pollutants	Chromium	negl.	2.6E-05	negl.	2.6E-05
	Manganese	negl.	7.2E-06	negl.	7.2E-06
	Nickel	negl.	4.0E-05	negl.	4.0E-05
	n-Hexane	negl.	0.034	negl.	0.034
	Toluene	negl.	6.4E-05	negl.	6.4E-05
	Benzene	negl.	4.0E-05	negl.	4.0E-05
	Dichlorobenzene	negl.	2.3E-05	negl.	2.3E-05
	Formaldehyde	negl.	1.4E-03	negl.	1.4E-03
	Lead	negl.	9.4E-06	negl.	9.4E-06
	Cadmium	negl.	2.1E-05	negl.	2.1E-05
HAP Totals		0	0.04	0.0	0.036
		Worse Case HAP		n-Hexane	0.034

Uncontrolled total potential to emit are based on rated capacity at 8,760 hours/year.

Uncontrolled Potential to Emit After Revision (tons/year)					
Emissions Generating Activity					
Category	Pollutant	Incineration PC-1, PC-2 BL-01 & PC-4	Natural Gas Combustion	Paved Road	TOTAL
Criteria Pollutants	PM	8.05	0.04	0.03	8.12
	PM10/PM2.5	8.05	0.17	0.01	8.22
	SO2	2.87	0.01	negl.	2.89
	NOx	3.45	2.19	negl.	5.64
	VOC	3.45	0.12	negl.	3.57
	CO	11.50	1.84	negl.	13.34
GHGs	CO2e	2337	2,644	negl.	4,981
Hazardous Air Pollutants	Chromium	negl.	3.1E-05	negl.	3.1E-05
	Manganese	negl.	8.3E-06	negl.	8.3E-06
	Nickel	negl.	4.6E-05	negl.	4.6E-05
	n-Hexane	negl.	0.039	negl.	0.039
	Toluene	negl.	7.4E-05	negl.	7.4E-05
	Benzene	negl.	4.6E-05	negl.	4.6E-05
	Dichlorobenzene	negl.	2.6E-05	negl.	2.6E-05
	Formaldehyde	negl.	1.6E-03	negl.	1.6E-03
	Lead	negl.	1.1E-05	negl.	1.1E-05
	Cadmium	negl.	2.4E-05	negl.	2.4E-05
HAP Totals		0	0.04	0.0	0.041
		Worse Case HAP		n-Hexane	0.039

Uncontrolled total potential to emit are based on rated capacity at 8,760 hours/year.

**Appendix A: Emissions Calculations
Multiple Chamber Industrial Incinerators (Process Emissions)**

Company Name: Pet Angel World Services, LLC
Address City IN Zip: 4202 S. Meridian St, Indianapolis, IN 46217
Permit Number: 097-31300-00639
Plt ID: 097-00639
Reviewer: Deena Patton
Date: December 2011

Pollutant			PM*	PM10*/2.5	SO2	NOx**	VOC	CO
Emission Factor (lb/ton)			7.0	7.0	2.5	3.0	3.0	10.0
Emission Unit	Potential Throughput (lbs/hr)	Potential Throughput (tons/yr)	Uncontrolled Potential to Emit (tons/yr)					
			PM*	PM10*/2.5	SO2	NOx**	VOC	CO
crematory incinerator for pet remains, identified as PC-1	75	328.5	1.15	1.15	0.41	0.49	0.49	1.64
crematory incinerator for pet remains, identified as PC-2	75	328.5	1.15	1.15	0.41	0.49	0.49	1.64
crematory incinerator for pet remains, identified as BL-01	75	328.5	1.15	1.15	0.41	0.49	0.49	1.64
crematory incinerator for pet remains, identified as PC-3	60	262.8	0.92	0.92	0.33	0.39	0.39	1.31
crematory incinerator for pet remains, identified as PC-4	300	1314.0	4.60	4.60	1.64	1.97	1.97	6.57
Totals		2299.5	8.05	8.05	2.87	3.45	3.45	11.50

Methodology

Potential Throughput (tons/yr) = [Potential Throughput (lbs/hr)] x [8,760 hrs/yr] x [1ton/2000 lbs]
 Uncontrolled Potential to Emit (tons/yr) = [Potential Throughput (tons/yr)] x [Emission Factor (lb/ton)] x [1 ton/2,000 lbs]
 where:
 Emission factors are from AP-42 (5th Edition 1/95) Table 2.1-12, Uncontrolled emission factors for industrial/commercial refuse combustors, multiple chambers
 *No emission factor for PM10 available (assume PM = PM10)
 **Emission Factors for NOx: Uncontrolled = 100, Low NOx Burner = 50, Low NOx Burners/Flue gas recirculation = 32

Abbreviations

PM = Particulate Matter NOx = Nitrous Oxides
 PM10 = Particulate Matter (<10 um) VOC - Volatile Organic Compounds
 SO2 = Sulfur Dioxide CO = Carbon Monoxide

	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)	2287.51	0.81	0.11
Summed Potential Emissions in tons/yr	2288		
CO2e Total in tons/yr	2337		

Methodology

*The 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
 **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 N2O GWP (310).

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

Company Name: Pet Angel World Services, LLC
Address City IN Zip: 4202 S. Meridian St, Indianapolis, IN 46217
Permit Number: 097-31300-00639
Plt ID: 097-00639
Reviewer: Deena Patton
Date: December 2011

Heat Input Capacity (MMBtu/hr)	
PC-1	0.8
PC-2	0.8
PC-3	0.7
PC-4	2.0
BL-01	1.4
Total	5.0

Heat Input Capacity MMBtu/hr	HHV mmBtu mmscf	Potential Throughput MMCF/yr
5.0	1000	43.8

Emission Factor in lb/MMCF	Pollutant						
	PM*	PM10*	direct PM2.5*	SO2	NOx	VOC	CO
	1.9	7.6	7.6	0.6	100 **see below	5.5	84
Potential Emission in tons/yr	0.04	0.17	0.17	0.01	2.19	0.12	1.84

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

PM2.5 emission factor is filterable and condensable PM2.5 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

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

See page 4 for HAPs emissions calculations.

updated 7/11

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

Company Name: Pet Angel World Services, LLC
Address City IN Zip: 4202 S. Meridian St, Indianapolis, IN 46217
Permit Number: 097-31300-00639
Plt ID: 097-00639
Reviewer: Deena Patton
Date: December 2011

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	4.599E-05	2.628E-05	1.643E-03	3.942E-02	7.446E-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	1.095E-05	2.409E-05	3.066E-05	8.322E-06	4.599E-05

Methodology is the same as page 1.

Total HAPs= 4.133E-02

The five highest organic and metal HAPs emission factors are provided above.
 Additional HAPs emission factors are available in AP-42, Chapter 1.4.
 See Page 5 for Greenhouse Gas calculations.

**Appendix A: Emissions Calculations
 Natural Gas Combustion Only
 MM BTU/HR <100
 Greenhouse Gas Emissions**

Company Name: Pet Angel World Services, LLC
Address City IN Zip: 4202 S. Meridian St, Indianapolis, IN 46217
Permit Number: 097-31300-00639
Plt ID: 097-00639
Reviewer: Deena Patton
Date: December 2011

Emission Factor in lb/MMcf	Greenhouse Gas		
	CO2	CH4	N2O
	120,000	2.3	2.2
Potential Emission in tons/yr	2,628	0.1	0.0
Summed Potential Emissions in tons/yr	2,628		
CO2e Total in tons/yr	2,644		

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 N2O GWP (310).

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

Company Name: Pet Angel World Services, LLC
Address City IN Zip: 4202 S. Meridian St, Indianapolis, IN 462
Permit Number: 097-31300-00639
Plt ID: 097-00639
Reviewer: Deena Patton
Date: December 2011

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 (12/2003).

Vehicle Information (provided by source)

Type	Maximum number of vehicles	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)	1.0	24.0	24.0	8.0	192.0	100	0.019	0.5	165.9
Vehicle (leaving plant) (one-way trip)	1.0	24.0	24.0	8.0	192.0	100	0.019	0.5	165.9
			0.0		0.0		0.000	0.0	0.0
			0.0		0.0		0.000	0.0	0.0
Total			48.0		384.0			0.9	331.8

Average Vehicle Weight Per Trip = $\frac{8.0}{1}$ tons/trip
 Average Miles Per Trip = $\frac{0.02}{1}$ miles/trip

Unmitigated Emission Factor, $E_f = [k * (sL/2)^{0.65} * (W/3)^{1.5} - C]$ (Equation 1 from AP-42 13.2.1)

	PM	PM10	
where k =	0.082	0.016	lb/mi = particle size multiplier (AP-42 Table 13.2.1-1)
W =	8.0	8.0	tons = average vehicle weight (provided by source)
C =	0.00047	0.00047	lb/mi = emission factor for vehicle exhaust, brake wear, and tire wear (AP-42 Table 13.2.1-2)
sL =	0.6	0.6	g/m ² = Ubiquitous Baseline Silt Loading Values of paved roads (Table 13.2.1-3 for summer months)

Taking natural mitigation due to precipitation into consideration, Mitigated Emission Factor, $E_{ext} = E * [1 - (p/4N)]$

Mitigated Emission Factor, $E_{ext} = E_f * [1 - (p/4N)]$

where p = $\frac{125}{365}$ days of rain greater than or equal to 0.01 inches (see Fig. 13.2.1-2)
 N = 365 days per year

	PM	PM10	
Unmitigated Emission Factor, $E_f =$	0.16	0.03	lb/mile
Mitigated Emission Factor, $E_{ext} =$	0.15	0.03	lb/mile
Dust Control Efficiency =	50%	50%	(pursuant to control measures outlined in fugitive dust control plan)

Process	Unmitigated PTE of PM (tons/yr)	Unmitigated PTE of PM10 (tons/yr)	Mitigated PTE of PM (tons/yr)	Mitigated PTE of PM10 (tons/yr)	Controlled PTE of PM (tons/yr)	Controlled PTE of PM10 (tons/yr)
Vehicle (entering plant) (one-way trip)	0.01	0.00	0.01	0.00	0.01	0.00
Vehicle (leaving plant) (one-way trip)	0.01	0.00	0.01	0.00	0.01	0.00
	0.00	0.00	0.00	0.00	0.00	0.00
	0.00	0.00	0.00	0.00	0.00	0.00
	0.03	0.01	0.02	0.00	0.01	0.00

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)
 PTE = Potential to Emit

Appendix A: Emissions Calculations
Multiple Chamber Industrial Incinerators (Process Emissions)
Incinerator BL-01

Company Name: Pet Angel World Services, LLC
Address City IN Zip: 4202 S. Meridian St, Indianapolis, IN 46217
Permit Number: 097-31300-00639
Plt ID: 097-00639
Reviewer: Deena Patton
Date: December 2011

Pollutant			PM*	PM10*/2.5	SO2	NOx**	VOC	CO
Emission Factor (lb/ton)			7.0	7.0	2.5	3.0	3.0	10.0
Emission Unit	Potential Throughput (lbs/hr)	Potential Throughput (tons/yr)	Uncontrolled Potential to Emit (tons/yr)					
			PM*	PM10*/2.5	SO2	NOx**	VOC	CO
crematory incinerator for pet remains, identified as BL-01	75	328.5	1.15	1.15	0.41	0.49	0.49	1.64
Totals		328.5	1.15	1.15	0.41	0.49	0.49	1.64

Methodology

Potential Throughput (tons/yr) = [Potential Throughput (lbs/hr)] x [8,760 hrs/yr] x [1ton/2000 lbs]
 Uncontrolled Potential to Emit (tons/yr) = [Potential Throughput (tons/yr)] x [Emission Factor (lb/ton)] x [1 ton/2,000 lbs]
 where:

Emission factors are from AP-42 (5th Edition 1/95) Table 2.1-12, Uncontrolled emission factors for industrial/commercial refuse combustors, multiple chambers

*No emission factor for PM10 available (assume PM = PM10)

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

Abbreviations

PM = Particulate Matter
 PM10 = Particulate Matter (<10 um)
 SO2 = Sulfur Dioxide
 NOx = Nitrous Oxides
 VOC - Volatile Organic Compounds
 CO = Carbon Monoxide

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)	326.79	0.12	0.02
Summed Potential Emissions in tons/yr	327		
CO2e Total in tons/yr	334		

Methodology

*The CO2, CH4, and N2O emission factors are from Table C-1 and Table C-2, 40 CFR Part 98, Subpart C, for Municipal Solid

**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 N2O GWP (310).

Appendix A: Emissions Calculations
Multiple Chamber Industrial Incinerators (Process Emissions)

Incinerator CP-3

Company Name: Pet Angel World Services, LLC
Address City IN Zip: 4202 S. Meridian St, Indianapolis, IN 46217
Permit Number: 097-31300-00639
Plt ID: 097-00639
Reviewer: Deena Patton
Date: December 2011

Pollutant			PM*	PM10*/2.5	SO2	NOx**	VOC	CO
Emission Factor (lb/ton)			7.0	7.0	2.5	3.0	3.0	10.0
Emission Unit	Potential Throughput (lbs/hr)	Potential Throughput (tons/yr)	Uncontrolled Potential to Emit (tons/yr)					
			PM*	PM10*/2.5	SO2	NOx**	VOC	CO
crematory incinerator for pet remains, identified as PC-3	60	262.8	0.92	0.92	0.33	0.39	0.39	1.31
Totals		262.8	0.92	0.92	0.33	0.39	0.39	1.31

Methodology

Potential Throughput (tons/yr) = [Potential Throughput (lbs/hr)] x [8,760 hrs/yr] x [1ton/2000 lbs]
 Uncontrolled Potential to Emit (tons/yr) = [Potential Throughput (tons/yr)] x [Emission Factor (lb/ton)] x [1 ton/2,000 lbs]
 where:

Emission factors are from AP-42 (5th Edition 1/95) Table 2.1-12, Uncontrolled emission factors for industrial/commercial refuse combustors, multiple chambers

*No emission factor for PM10 available (assume PM = PM10)

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

Abbreviations

PM = Particulate Matter NOx = Nitrous Oxides
 PM10 = Particulate Matter (<10 um) VOC - Volatile Organic Compounds
 SO2 = Sulfur Dioxide CO = Carbon Monoxide

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)	261.43	0.09	0.01
Summed Potential Emissions in tons/yr	262		
CO2e Total in tons/yr	267		

Methodology

*The CO2, CH4, and N2O emission factors are from Table C-1 and Table C-2, 40 CFR Part 98, Subpart C, for Municipal Solid

**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 N2O GWP (310).

Appendix A: Emissions Calculations
Multiple Chamber Industrial Incinerators (Process Emissions)

Incinerator CP-01

Company Name: Pet Angel World Services, LLC
Address City IN Zip: 4202 S. Meridian St, Indianapolis, IN 46217
Permit Number: 097-31300-00639
Plt ID: 097-00639
Reviewer: Deena Patton
Date: December 2011

Pollutant			PM*	PM10*/2.5	SO2	NOx**	VOC	CO
Emission Factor (lb/ton)			7.0	7.0	2.5	3.0	3.0	10.0
Emission Unit	Potential Throughput (lbs/hr)	Potential Throughput (tons/yr)	Uncontrolled Potential to Emit (tons/yr)					
			PM*	PM10*/2.5	SO2	NOx**	VOC	CO
crematory incinerator for pet remains, identified as PC-1	75	328.5	1.15	1.15	0.41	0.49	0.49	1.64
Totals		328.5	1.15	1.15	0.41	0.49	0.49	1.64

Methodology

Potential Throughput (tons/yr) = [Potential Throughput (lbs/hr)] x [8,760 hrs/yr] x [1ton/2000 lbs]
 Uncontrolled Potential to Emit (tons/yr) = [Potential Throughput (tons/yr)] x [Emission Factor (lb/ton)] x [1 ton/2,000 lbs]
 where:

Emission factors are from AP-42 (5th Edition 1/95) Table 2.1-12, Uncontrolled emission factors for industrial/commercial refuse combustors, multiple chambers

*No emission factor for PM10 available (assume PM = PM10)

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

Abbreviations

PM = Particulate Matter NOx = Nitrous Oxides
 PM10 = Particulate Matter (<10 um) VOC - Volatile Organic Compounds
 SO2 = Sulfur Dioxide CO = Carbon Monoxide

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)	326.79	0.12	0.02
Summed Potential Emissions in tons/yr	327		
CO2e Total in tons/yr	334		

Methodology

*The CO2, CH4, and N2O emission factors are from Table C-1 and Table C-2, 40 CFR Part 98, Subpart C, for Municipal Solid

**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 N2O GWP (310).

Appendix A: Emissions Calculations
Multiple Chamber Industrial Incinerators (Process Emissions)
Incinerator CP-2

Company Name: Pet Angel World Services, LLC
Address City IN Zip: 4202 S. Meridian St, Indianapolis, IN 46217
Permit Number: 097-31300-00639
Plt ID: 097-00639
Reviewer: Deena Patton
Date: December 2011

Pollutant			PM*	PM10*/2.5	SO2	NOx**	VOC	CO
Emission Factor (lb/ton)			7.0	7.0	2.5	3.0	3.0	10.0
Emission Unit	Potential Throughput (lbs/hr)	Potential Throughput (tons/yr)	Uncontrolled Potential to Emit (tons/yr)					
			PM*	PM10*/2.5	SO2	NOx**	VOC	CO
crematory incinerator for pet remains, identified as PC-2	75	328.5	1.15	1.15	0.41	0.49	0.49	1.64
Totals		328.5	1.15	1.15	0.41	0.49	0.49	1.64

Methodology

Potential Throughput (tons/yr) = [Potential Throughput (lbs/hr)] x [8,760 hrs/yr] x [1ton/2000 lbs]
 Uncontrolled Potential to Emit (tons/yr) = [Potential Throughput (tons/yr)] x [Emission Factor (lb/ton)] x [1 ton/2,000 lbs]
 where:

Emission factors are from AP-42 (5th Edition 1/95) Table 2.1-12, Uncontrolled emission factors for industrial/commercial refuse combustors, multiple chambers

*No emission factor for PM10 available (assume PM = PM10)

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

Abbreviations

PM = Particulate Matter NOx = Nitrous Oxides
 PM10 = Particulate Matter (<10 um) VOC - Volatile Organic Compounds
 SO2 = Sulfur Dioxide CO = Carbon Monoxide

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)	326.79	0.12	0.02
Summed Potential Emissions in tons/yr	327		
CO2e Total in tons/yr	334		

Methodology

*The CO2, CH4, and N2O emission factors are from Table C-1 and Table C-2, 40 CFR Part 98, Subpart C, for Municipal Solid

**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 N2O GWP (310).

Appendix A: Emissions Calculations
Multiple Chamber Industrial Incinerators (Process Emissions)
Incinerator CP-4

Company Name: Pet Angel World Services, LLC
Address City IN Zip: 4202 S. Meridian St, Indianapolis, IN 46217
Permit Number: 097-31300-00639
Plt ID: 097-00639
Reviewer: Deena Patton
Date: December 2011

Pollutant			PM*	PM10*/2.5	SO2	NOx**	VOC	CO
Emission Factor (lb/ton)			7.0	7.0	2.5	3.0	3.0	10.0
Emission Unit	Potential Throughput (lbs/hr)	Potential Throughput (tons/yr)	Uncontrolled Potential to Emit (tons/yr)					
			PM*	PM10*/2.5	SO2	NOx**	VOC	CO
crematory incinerator for pet remains, identified as PC-4	300	1314.0	4.60	4.60	1.64	1.97	1.97	6.57
Totals		1314.0	4.60	4.60	1.64	1.97	1.97	6.57

Methodology

Potential Throughput (tons/yr) = [Potential Throughput (lbs/hr)] x [8,760 hrs/yr] x [1ton/2000 lbs]
 Uncontrolled Potential to Emit (tons/yr) = [Potential Throughput (tons/yr)] x [Emission Factor (lb/ton)] x [1 ton/2,000 lbs]
 where:

Emission factors are from AP-42 (5th Edition 1/95) Table 2.1-12, Uncontrolled emission factors for industrial/commercial refuse combustors, multiple chambers

*No emission factor for PM10 available (assume PM = PM10)

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

Abbreviations

PM = Particulate Matter
 PM10 = Particulate Matter (<10 um)
 SO2 = Sulfur Dioxide
 NOx = Nitrous Oxides
 VOC - Volatile Organic Compounds
 CO = Carbon Monoxide

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)	1307.15	0.46	0.06
Summed Potential Emissions in tons/yr	1308		
CO2e Total in tons/yr	1336		

Methodology

*The CO2, CH4, and N2O emission factors are from Table C-1 and Table C-2, 40 CFR Part 98, Subpart C, for Municipal Solid

**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 N2O GWP (310).



INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT

We Protect Hoosiers and Our Environment.

Mitchell E. Daniels Jr.
Governor

Thomas W. Easterly
Commissioner

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

TO: John Pyle
Pet Angel World Services, LLC
4202 S Meridian St
Indianapolis, IN 46217

DATE: December 30, 2011

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

SUBJECT: Final Decision
Registration Revision
097-31300-00639

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 12/30/2011 Pet Angel World Services LLC 097-31300-00639 (final)		Type of Mail: CERTIFICATE OF MAILING ONLY	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		

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1		John Pyle Pet Angel World Services LLC 4202 S Meridian St Indianapolis IN 46217 (Source CAATS) via confirm delivery										
2		Marion County Health Department 3838 N, Rural St Indianapolis IN 46205-2930 (Health Department)										
3		Indianapolis City Council and Mayors Office 200 East Washington Street, Room E Indianapolis IN 46204 (Local Official)										
4		Marion County Commissioners 200 E. Washington St. City County Bldg., Suite 801 Indianapolis IN 46204 (Local Official)										
5		Matt Mosier Office of Sustainability 1200 S Madison Ave #200 Indianapolis IN 46225 (Local Official)										
6		Mark Zeltwanger 26545 CR 52 Nappanee IN 46550 (Affected Party)										
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