

STATE OF MISSOURI

PERMIT BOOK



DEPARTMENT OF NATURAL RESOURCES

MISSOURI AIR CONSERVATION COMMISSION

PERMIT TO CONSTRUCT

Under the authority of RSMo 643 and the Federal Clean Air Act the applicant is authorized to construct the air contaminant source(s) described below, in accordance with the laws, rules and conditions as set forth herein.

Permit Number: 08 2 0 0 9 - 0 1 3 Project Number: 2009-06-054

Parent Company: Generation 3, L.L.C.

Parent Company Address: P.O. Box 1006, Warsaw, MO 65355-1006

Installation Name: Kaysinger Crematory

Installation Address: 17469 N. Dam Access Road, Warsaw, MO 65355-1006

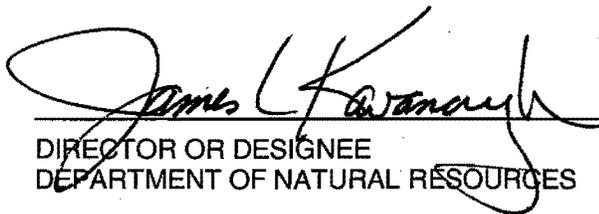
Location Information: Benton County, (S8, T40N, R22W)

Application for Authority to Construct was made for:  
The installation of a new IE43-PPII Power Pak II Matthews crematory. This review was conducted in accordance with Section (5), Missouri State Rule 10 CSR 10-6.060, *Construction Permits Required*.

- 
- Standard Conditions (on reverse) are applicable to this permit.
- Standard Conditions (on reverse) and Special Conditions are applicable to this permit.

AUG 27 2009

EFFECTIVE DATE

  
DIRECTOR OR DESIGNEE  
DEPARTMENT OF NATURAL RESOURCES

## STANDARD CONDITIONS:

Permission to construct may be revoked if you fail to begin construction or modification within two years from the effective date of this permit. Permittee should notify the Air Pollution Control Program if construction or modification is not started within two years after the effective date of this permit, or if construction or modification is suspended for one year or more.

**You will be in violation of 10 CSR 10-6.060 if you fail to adhere to the specifications and conditions listed in your application, this permit and the project review.** In the event that there is a discrepancy between the permit application and this permit, the conditions of this permit shall take precedence. Specifically, all air contaminant control devices shall be operated and maintained as specified in the application, associated plans and specifications.

You must notify the departments' Air Pollution Control Program of the anticipated date of start up of this (these) air contaminant source(s). The information must be made available not more than 60 days but at least 30 days in advance of this date. Also, you must notify the Department of Natural Resources Regional office responsible for the area within which you are located within 15 days after the actual start up of this (these) air contaminant source(s).

A copy of this permit and permit review shall be kept at the installation address and shall be made available to Department of Natural Resources' personnel upon request.

You may appeal this permit or any of the listed special conditions to the Administrative Hearing Commission (AHC), P.O. Box 1557, Jefferson City, MO 65102, as provided in RSMo 643.075.6 and 621.250.3. If you choose to appeal, you must file a petition with the AHC within 30 days after the date this decision was mailed or the date it was delivered, whichever date was earlier. If any such petition is sent by registered mail or certified mail, it will be deemed filed on the date it is mailed. If it is sent by any method other than registered mail or certified mail, it will be deemed filed on the date it is received by the AHC.

If you choose not to appeal, this certificate, the project review and your application and associated correspondence constitutes your permit to construct. The permit allows you to construct and operate your air contaminant source(s), but in no way relieves you of your obligation to comply with all applicable provisions of the Missouri Air Conservation Law, regulations of the Missouri Department of Natural Resources and other applicable federal, state and local laws and ordinances.

The Air Pollution Control Program invites your questions regarding this air pollution permit. Please contact the Construction Permit Unit at (573) 751-4817. If you prefer to write, please address your correspondence to the Missouri Department of Natural Resources, Air Pollution Control Program, P.O. Box 176, Jefferson City, MO 65102-0176, attention: Construction Permit Unit.

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#### SPECIAL CONDITIONS:

The permittee is authorized to construct and operate subject to the following special conditions:

*The special conditions listed in this permit were included based on the authority granted the Missouri Air Pollution Control Program by the Missouri Air Conservation Law (specifically 643.075) and by the Missouri Rules listed in Title 10, Division 10 of the Code of State Regulations (specifically 10 CSR 10-6.060). For specific details regarding conditions, see 10 CSR 10-6.060 paragraph (12)(A)10. "Conditions required by permitting authority."*

Kaysinger Crematory  
Benton County, (S8, T40N, R22W)

1. Process Requirements for the Human Crematory (EP-01)
  - A. Kaysinger Crematory shall burn exclusively non-infectious human bodies or body parts not in containers and non-infectious human bodies or body parts in containers not containing chlorine.
  - B. The batch-type incinerator shall have an operable door lockout mechanism that prohibits the charging of waste between burn cycles.
  - C. The incinerator shall be equipped with a continuous chart recorder that is able to monitor, display and record the temperature in the final combustion chamber to an accuracy of plus or minus two percent (2%).
  - D. The operators shall maintain the incinerator at a temperature of no less than 1600 degrees Fahrenheit.
2. Record Keeping Requirements  
Kaysinger Crematory shall maintain an accurate record of the monthly amount and type of waste combusted at this installation. The installation shall use Attachment A or other equivalent form(s) approved by the Air Pollution Control Program for this purpose. Kaysinger Crematory shall maintain records on-site for the most recent 60 months of all records required by this permit and shall immediately make such records available to any Missouri Department of Natural Resources' personnel upon request.
3. Opacity  
The incinerator (EP-01) shall have opacity of less than ten percent (10%) at all times.
4. Operator Requirements for the Human Crematory (EP-01)
  - A. All incinerator operators shall attend a training program equivalent to that developed by the American Society of Mechanical Engineers (ASME), by the incinerator manufacturer or by an individual with more than one (1) year experience in the operation of the incinerator. The training shall

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**SPECIAL CONDITIONS:**

The permittee is authorized to construct and operate subject to the following special conditions:

include basic combustion theory, operating procedures, monitoring of combustion control parameters and all emergency procedures to be followed if the incinerator should malfunction or exceed operating parameters.

B. The incinerator operator shall have the essential steps necessary for satisfactory operation of the incinerator readily available to him or her in an easy to read and follow manual.

5. Restriction of Odors

If a continued situation of demonstrated nuisance odors exists in violation of 10 CSR 10-3.090, the Director may require through written notice that Kaysinger Crematory submit a corrective action plan within ten days adequate to timely and significantly mitigate the odors and Kaysinger Crematory shall implement any such plan immediately upon its approval by the Director. Failure to either submit or implement such a plan shall be in violation of this permit.

REVIEW OF APPLICATION FOR AUTHORITY TO CONSTRUCT AND OPERATE  
SECTION (5) REVIEW

Project Number: 2009-06-054  
Installation ID Number: 015-0028  
Permit Number:

Kaysinger Crematory  
17469 N. Dam Access Road  
Warsaw, MO 65355-1006

Complete: June 18, 2009

Generation 3, L.L.C.  
P.O. Box 1006  
Warsaw, MO 65355-1006

Benton County, (S8, T40N, R22W)

REVIEW SUMMARY

- Kaysinger Crematory has applied for authority to install a new crematory.
- Mercury emissions are above their screening model action level (SMAL).
- None of the New Source Performance Standards (NSPS) apply to the proposed equipment.
- None of the National Emission Standards for Hazardous Air Pollutants (NESHAPs) or currently promulgated Maximum Achievable Control Technology (MACT) regulations apply to the proposed equipment.
- This review was conducted in accordance with Section (5) of Missouri State Rule 10 CSR 10-6.060, *Construction Permits Required*. Potential emissions of criteria pollutants are below de minimis levels. Section (1)(B) requires all incinerators to obtain construction permits.
- This installation is located in Benton County, an attainment area for all criteria air pollutants.
- This installation is not on the List of Named Installations [10 CSR 10-6.020(3)(B), Table 2].
- Ambient air quality modeling was performed to demonstrate compliance with the risk assessment level (RAL) for mercury.
- Emissions testing is not required for the equipment. Stack testing was conducted on a similar unit and approved by the Air Pollution Control Program.

- A Basic Operating Permit application is required for this installation within 30 days of equipment startup.
- Approval of this permit is recommended with special conditions.

## INSTALLATION DESCRIPTION

Kaysinger Crematory is new crematory facility located in Warsaw, Missouri. Kaysinger Crematory has applied for authority to construct a Power-Pak II Matthews Cremator that is capable of completing one cremation per hour. The crematory is equipped with a secondary firing chamber to control volatile organic compound (VOC), particulate matter (PM) and organic hazardous air pollutant (HAP) emissions. Kaysinger Crematory has provided a stack test conducted on the exact model of cremator in Florida on December 9, 2004 and May 5, 2005 to demonstrate the crematory will comply with the Air Pollution Control Programs PM concentration and combustion efficiency requirements, which are 0.1 grains per dry standard cubic foot and 99.9 percent, respectively.

No permits have been issued to Kaysinger Crematory from the Air Pollution Control Program.

## EMISSIONS/CONTROLS EVALUATION

The emission rates for particulate matter less than ten (10) microns in aerodynamic diameter (PM<sub>10</sub>), nitrogen oxides (NO<sub>x</sub>), volatile organic compounds (VOC), sulfur dioxide (SO<sub>2</sub>) and carbon monoxide (CO) used in this review were obtained from a stack test performed on a similar incinerator. The stack test was ran at the nominal burning capacity of 100 pounds per hour and the emission rates were scaled up to the maximum burning rate of 150 pounds per hour. The emission factors used in the analysis of HAP emissions was obtained from FIRE for SCC 3-15-021-01. The composite emission factor of HAPs listed in FIRE was 0.076 pounds of HAP per body cremated. Potential emissions of the application represent the potential of the new equipment, assuming continuous operation (8760 hours per year.) The following table provides an emissions summary for this project.

Table 1: Emissions Summary (tons per year)

<b>Pollutant</b>	<b>Regulatory <i>De Minimis</i>/ SMAL Levels</b>	<b>Existing Potential Emissions</b>	<b>Existing Actual Emissions</b>	<b>**Potential Emissions of the Application</b>	<b>New Installation Conditioned Potential</b>
PM <sub>10</sub>	15.0	N/A	N/A	0.43	N/A
SO <sub>x</sub>	40.0	N/A	N/A	1.01	N/A
NO <sub>x</sub>	40.0	N/A	N/A	6.57	N/A
VOC	40.0	N/A	N/A	0.02	N/A
CO	100.0	N/A	N/A	0.03	N/A

Mercury	0.01*	N/A	N/A	0.014	N/A
HAPs	10.0/25.0	N/A	N/A	0.33	N/A

N/A = Not Applicable

\* Screen Modeling Action Level (SMAL)

\*\* Potential Emissions of the Application scaled up proportionally based on the maximum burning capacity of 150 lb/hr excluding the HAPs

## PERMIT RULE APPLICABILITY

This review was conducted in accordance with Section (5) of Missouri State Rule 10 CSR 10-6.060, *Construction Permits Required*. Potential emissions of all criteria pollutants are below de minimis levels. All incinerators must be permitted as required by 10 CSR 10-6.060 Section (1)(B).

## APPLICABLE REQUIREMENTS

Kaysinger Crematory shall comply with the following applicable requirements. The Missouri Air Conservation Laws and Regulations should be consulted for specific record keeping, monitoring, and reporting requirements. Compliance with these emission standards, based on information submitted in the application, has been verified at the time this application was approved. For a complete list of applicable requirements for your installation, please consult your operating permit.

## GENERAL REQUIREMENTS

- *Submission of Emission Data, Emission Fees and Process Information*, 10 CSR 10-6.110  
The emission fee is the amount established by the Missouri Air Conservation Commission annually under Missouri Air Law 643.079(1). Submission of an Emissions Inventory Questionnaire (EIQ) is required June 1 for the previous year's emissions.
- *Operating Permits*, 10 CSR 10-6.065
- *Restriction of Particulate Matter to the Ambient Air Beyond the Premises of Origin*, 10 CSR 10-6.170
- *Restriction of Emission of Visible Air Contaminants*, 10 CSR 10-6.220
- *Restriction of Emission of Odors*, 10 CSR 10-2.070

## AMBIENT AIR QUALITY IMPACT ANALYSIS

Ambient air quality modeling was performed to determine the ambient impact of mercury. The emissions were modeled using EPA's SCREEN3. The stack parameters

are included in table 2 and the results of the analysis are included in table 3. The stack parameters were taken from the stack test provided by the applicant. The analysis showed that the RAL for elemental mercury will not be exceeded. The highest impact occurs within the fence line, 34 feet from the stack.

Table 2: Stack Parameters

Stack Height (m)	Stack Inside Diameter (m)	Stack Gas Velocity (m/s)	Stack Gas Temperature (K)
6.4008	0.5081	4.3485	933.15

Table 3: Ambient Air Quality Analysis Results

Pollutant	Modeled Impact	RAL ( $\mu\text{g}/\text{m}^3$ )	Time Period
Mercury	0.0468	0.14	24-hour
Mercury	0.0094	0.07	Annual

NOTE: SCREEN3 analysis shows compliance with RAL

### STAFF RECOMMENDATION

On the basis of this review conducted in accordance with Section (5), Missouri State Rule 10 CSR 10-6.060, *Construction Permits Required*, I recommend this permit be granted with special conditions.

\_\_\_\_\_  
Gerad Fox  
Environmental Engineer

\_\_\_\_\_  
Date

### PERMIT DOCUMENTS

The following documents are incorporated by reference into this permit:

- The Application for Authority to Construct form, dated June 17, 2009, received June 18, 2009, designating Generation 3, L.L.C. as the owner and operator of the installation.
- U.S. EPA document AP-42, *Compilation of Air Pollutant Emission Factors*, Fifth Edition.
- Kansas City Regional Office Site Survey, dated date.



Mr. James D. Miller  
President  
Kaysinger Crematory  
17469 N. Dam Access Road  
Warsaw, MO 65355-1006

RE: New Source Review Permit - Project Number: 2009-06-054

Dear Mr. D. Miller:

Enclosed with this letter is your permit to construct. Please study it carefully. Also, note the special conditions, if any, on the accompanying pages. The document entitled, "Review of Application for Authority to Construct," is part of the permit and should be kept with this permit in your files.

Operation in accordance with these conditions, your new source review permit application and with your new operating permit is necessary for continued compliance.

The reverse side of your permit certificate has important information concerning standard permit conditions and your rights and obligations under the laws and regulations of the State of Missouri.

If you have any questions regarding this permit, please do not hesitate to contact Gerad Fox, at the departments' Air Pollution Control Program, P.O. Box 176, Jefferson City, MO 65102 or at (573) 751-4817. Thank you for your attention to this matter.

Sincerely,

AIR POLLUTION CONTROL PROGRAM

Kendall B. Hale  
New Source Review Unit Chief

KBH:grfl

Enclosures

c: Kansas City Regional Office  
PAMS File: 2009-06-054

Permit Number: