

**STATE OF MISSOURI**



**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: **112013-003** Project Number: 2013-09-005  
Installation Number: 125-0023

Parent Company: Jet Vet Veterinary Clinic LLC

Parent Company Address: 217 W. 2nd Street, Dixon, MO 65459-6010

Installation Name: Jet Vet Veterinary Clinic LLC

Installation Address: 14039 Maries Road 607, Dixon, MO 65459-6010

Location Information: Maries County, S9, T39N, R11

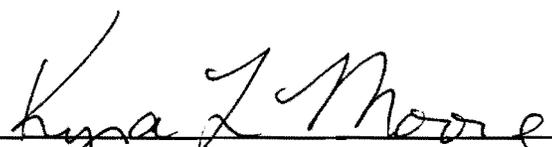
Application for Authority to Construct was made for:  
Installation of a R & K Model 36 Incinerator with afterburner for specific veterinary crematory use only. This review was conducted in accordance with Section (5), Missouri State Rule 10 CSR 10-6.060, *Construction Permits Required*.

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

**NOV 5 2013**

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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 Department's Air Pollution Control Program of the anticipated date of start up of these air contaminant sources. The information must be made available within 30 days of actual startup. 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 these air contaminant sources.

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 sources(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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Permit No.	
Project No.	2013-09-005

**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."*

Jet Vet Veterinary Clinic LLC  
Maries County, S9, T39N, R11

1. Process Requirements for the Animal Crematory (EP-01)
  - A. Jet Vet Veterinary Clinic LLC will burn exclusively non-infectious animal bodies or body parts (as defined in the Installation Description) and containers not containing chlorine.
  - B. Charging of waste during burn cycles is prohibited.
  - C. The crematory shall be equipped with a continuous chart recorder that monitors, displays and records the temperature in the final combustion chamber with an accuracy of two percent ( $\pm 2\%$ ).
  - D. Jet Vet Veterinary Clinic LLC shall maintain the temperature in the final combustion chamber of both incinerators at or above 1300 degrees Fahrenheit.
  - E. The Jet Vet Veterinary Clinic LLC (EP-01) shall each be equipped with an afterburner.
  - F. Remains shall be incinerated at a rate not exceeding 75.0 pounds per hour in the (EP-01) incinerator.
  - G. Patch weight shall not exceed 400 pounds for the R & K Burn Easy Incinerator Model 36.
  - H. Jet Vet Veterinary Clinic LLC shall maintain an accurate record of the number of cremation and the total mass of remains cremated at this installation per month. Attachment A or equivalent forms, such as electronic forms, approved by the Air Pollution Control Program shall be used to demonstrate compliance with Special Condition 1.F. and 1.G.

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**SPECIAL CONDITIONS:**

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

2. **Opacity**  
The crematory (EP-01) shall have opacity of less than ten percent (10%) at all times.
  
3. **Requirements for Operators of the Animal Crematory (EP-01)**
  - A. All crematory operators shall attend a training program equivalent to that developed by the American Society of Mechanical Engineers (ASME), by the crematory manufacturer or by an individual with more than one (1) year experience in the operation of the crematory. The training shall include basic combustion theory, operating procedures, monitoring of combustion control parameters and all emergency procedures to be followed if the crematory should malfunction or exceed operating parameters.
  
  - B. The crematory operator shall have the essential steps necessary for satisfactory operation of the crematory readily available to him or her in an easy to read and follow manual.
  
4. **Restriction of Odors**  
If a continued situation of verified nuisance odors exists in violation of 10 CSR 10-6.165, the Director may require through written notice that Jet Vet Veterinary Clinic LLC submit within ten days a corrective action plan adequate to timely and significantly mitigate the odors. Jet Vet Veterinary Clinic LLC 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.
  
5. **Record Keeping and Reporting Requirements**
  - A. Jet Vet Veterinary Clinic LLC shall maintain all records required by this permit for not less than five years and shall make them available immediately to any Missouri Department of Natural Resources' personnel upon request.
  
  - B. Jet Vet Veterinary Clinic LLC shall report to the Air Pollution Control Program's Enforcement Section, P.O. Box 176, Jefferson City, Missouri 65102, no later than ten days after the end of the month during which any record required by this permit shows an exceedance of a limitation imposed by this permit.

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

Project Number: 2013-09-005  
Installation ID Number: 125-0023  
Permit Number:

Jet Vet Veterinary Clinic LLC  
14039 Maries Road 607  
Dixon, MO 65459-6010

Complete: September 4, 2013

Parent Company:  
Jet Vet Veterinary Clinic LLC  
217 W. 2nd Street  
Dixon, MO 65459-6010

Maries County, S9, T39N, R11

REVIEW SUMMARY

- Jet Vet Veterinary Clinic LLC has applied for authority to install a R & K Burn Easy Model 36 Incinerator with afterburner for specific veterinary crematory use only.
- HAP emissions are not expected from the proposed equipment.
- None of the New Source Performance Standards (NSPS) apply to the installation.
- None of the NESHAPs apply to this installation. None of the currently promulgated MACT regulations apply to the proposed equipment.
- An afterburner installed on the crematory controls the emissions from the equipment in this permit.
- 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 pollutant are below de minimis levels. Section (1)(B) of Missouri State Rule 10 CSR 10-6.060 requires all incinerators to obtain construction permits.
- This installation is located in Maries County, an attainment area for all criteria pollutants.
- This installation is not on the List of Named Installations found in 10 CSR 10-6.020(3)(B), Table 2. The installation's major source level is 250 tons per year and fugitive emissions are not counted toward major source applicability.
- Ambient air quality modeling was not performed since potential emissions of the application are below de minimis levels.

- 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/PROJECT DESCRIPTION

No permits have been issued to Jet Vet Veterinary Clinic LLC from the Air Pollution Control Program.

Jet Vet Veterinary Clinic LLC will install a R & K Burn Easy Incinerators Model 36. Jet Vet Veterinary Clinic LLC is located at 217 W. 2<sup>nd</sup> Street, Dixon, Missouri and the incinerator will be located at the veterinarian's farm located at 14039 Maries Road 607, Dixon, Missouri. Calculations were conducted based on the manufacturer hourly design rate of 75 pounds per hour. The incinerator is fueled by ultra-low sulfur diesel fuel (15 ppm). The R & K Model 36 Burn Easy Incinerator (EP-1) has a 400 pound capacity. The incinerator is equipped with an afterburner that helps controls emissions from the cremation process. Stack testing performed on the R & K Model 36 Burn Easy Incinerator on December 1, 1998 was submitted to the Air Pollution Control Program with this permit and this stack data was also used for Construction Permits 072011-007, 012010-014, and 052013-013.

The crematory was required to submit stack test result/test to demonstrate compliance with the Air Pollution Control Program's requirements for crematories. These requirements include that the crematory achieve a combustion efficiency of 99.9%, that the maximum particulate concentration in the crematory's stack gas is less than 0.09 grains per dry standard cubic feet and that the crematory's opacity does not exceed 10%. These requirements were developed to ensure proper combustion, which ensures destruction of HAPs.

The crematory is permitted to cremate non-infectious animal bodies and body parts. The Air Pollution Control Program's definition of this term is animal bodies and body parts that do not fit the definition of medical/infectious waste as defined in the Code of Federal Regulations, 40 CFR 60.51, *Standards of Performance for New Stationary Sources*, Subpart Ec—"Standards of Performance for Hospital/Medical/Infectious Waste Incinerators for Which Construction is Commenced After June 20, 1996." The rule defines medical/infectious waste as:

*Medical/infectious waste* means any waste generated in the diagnosis, treatment, or immunization of human beings or animals, in research pertaining thereto, or in the production or testing of biologicals that are listed in paragraphs (1) through (7) of this definition. The definition of medical/infectious waste does not include hazardous waste identified or listed under the regulations in part 261 of this chapter; household waste, as

defined in §261.4(b)(1) of this chapter; ash from incineration of medical/infectious waste, once the incineration process has been completed; human corpses, remains, and anatomical parts that are intended for interment; and domestic sewage materials identified in §261.4(a)(1) of this chapter.

- (1) Cultures and stocks of infectious agents and associated biologicals, including: cultures from medical and pathological laboratories; cultures and stocks of infectious agents from research and industrial laboratories; wastes from the production of biologicals; discarded live and attenuated vaccines; and culture dishes and devices used to transfer, inoculate, and mix cultures.
- (2) Human pathological waste, including tissues, organs, and body parts and body fluids that are removed during surgery or autopsy, or other medical procedures, and specimens of body fluids and their containers.
- (3) Human blood and blood products including:
  - (i) Liquid waste human blood;
  - (ii) Products of blood;
  - (iii) Items saturated and/or dripping with human blood; or
  - (iv) Items that were saturated and/or dripping with human blood that are now caked with dried human blood; including serum, plasma, and other blood components, and their containers, which were used or intended for use in either patient care, testing and laboratory analysis or the development of pharmaceuticals. Intravenous bags are also included in this category.
- (4) Sharps that have been used in animal or human patient care or treatment or in medical, research, or industrial laboratories, including hypodermic needles, syringes (with or without the attached needle), pasteur pipettes, scalpel blades, blood vials, needles with attached tubing, and culture dishes (regardless of presence of infectious agents). Also included are other types of broken or unbroken glassware that were in contact with infectious agents, such as used slides and cover slips.
- (5) Animal waste including contaminated animal carcasses, body parts, and bedding of animals that were known to have been exposed to infectious agents during research (including research in veterinary hospitals), production of biologicals or testing of pharmaceuticals.
- (6) Isolation wastes including biological waste and discarded materials contaminated with blood, excretions, exudates, or secretions from humans who are isolated to protect others from certain highly communicable diseases, or isolated animals known to be infected with highly communicable diseases.
- (7) Unused sharps including the following unused, discarded sharps: hypodermic needles, suture needles, syringes, and scalpel blades.

Infectious and non-infectious human bodies and body parts are not permitted to be cremated in this incinerator.

## EMISSIONS/CONTROLS EVALUATION

The emission factors and control efficiencies used in this analysis were obtained from the Environmental Protection Agency (EPA) document AP-42, *Compilation of Air Pollutant Emission Factors*, Fifth Edition, FIRE, and stack testing data. The emission rates for particulate matter less than ten (10) microns in aerodynamic diameter (PM<sub>10</sub>) and carbon monoxide (CO) used in this review were obtained from a stack test performed on a similar incinerator. Emissions of sulfur dioxide (SO<sub>2</sub>) were calculated using the emission factor from AP-42 Table 1.3-1 (diesel fuel). Nitrogen oxide (NO<sub>x</sub>) and volatile organic compound (VOC) emissions were calculated using an emission factor from FIRE SCC 5-02-001-01. The emission factors used in the analysis of HAP emissions were 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.

The following table provides an emissions summary for this project. Existing potential emissions and EIQ information are not available since this is a new installation. Potential emissions of the application represent the potential of the new equipment, assuming continuous operation (8760 hours per year).

Table 2: Emissions Summary (tons per year)

Pollutant	Regulatory <i>De Minimis</i> Levels	Existing Potential Emissions	Existing Actual Emissions (2013 EIQ)	Potential Emissions of the Application	New Installation Conditioned Potential
<sup>1</sup> PM	25.0	N/A	N/A	0.1073	N/A
<sup>1</sup> PM <sub>10</sub>	15.0	N/A	N/A	0.1073	N/A
PM <sub>2.5</sub>	10.0	N/A	N/A	0.1073	N/A
SO <sub>x</sub>	40.0	N/A	N/A	0.0026	N/A
NO <sub>x</sub>	40.0	N/A	N/A	0.4928	N/A
VOC	40.0	N/A	N/A	0.4928	N/A
<sup>2</sup> CO	100.0	N/A	N/A	0.026280	N/A
GHG (CO <sub>2</sub> e)	75,000 / 100,000	N/A	N/A	289.87	N/A
<sup>3</sup> GHG (mass)	0.0 / 100.0 / 250.0	N/A	N/A	289.87	N/A
HAPs	10.0/25.0	N/A	N/A	0.1597	N/A

N/A = Not Applicable; N/D = Not Determined

<sup>1</sup>It is assumed that all PM<sub>10</sub> to be PM<sub>2.5</sub>. PM<sub>10</sub> emission rates are from the stack test.

<sup>2</sup>CO emission rates are from the stack test.

<sup>3</sup>Methane emissions are insignificant, therefore CHG (mass) is equivalent to CHG (CO<sub>2</sub>e).

## 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 Pollutant are below de minimis levels.

## APPLICABLE REQUIREMENTS

Jet Vet Veterinary Clinic LLC 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.

### 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 10-6.165*
- *Restriction of Emission of Sulfur Compounds, 10 CSR 10-6.260*

## 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.

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Kathy Kolb  
New Source Review Unit

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Date

### PERMIT DOCUMENTS

The following documents are incorporated by reference into this permit:

- The Application for Authority to Construct form, dated September 4, 2013, received September 4, 2013, designating Jet Vet Veterinary Clinic LLC as the owner and operator of the installation.
- U.S. EPA document AP-42, *Compilation of Air Pollutant Emission Factors*, Fifth Edition.
- WebFIRE (Factor Information Retrieval System), EPA's online emission factor repository.
- Stack test report on R & K Model 36 Burn Easy Incinerator by Monarch Analytical Laboratories, Inc. on December 2, 1998



## APPENDIX A

### Abbreviations and Acronyms

<b>%</b> .....	percent	<b>m/s</b> .....	meters per second
<b>°F</b> .....	degrees Fahrenheit	<b>Mgal</b> .....	1,000 gallons
<b>acfm</b> .....	actual cubic feet per minute	<b>MW</b> .....	megawatt
<b>BACT</b> .....	Best Available Control Technology	<b>MHDR</b> .....	maximum hourly design rate
<b>BMPs</b> .....	Best Management Practices	<b>MMBtu</b> ....	Million British thermal units
<b>Btu</b> .....	British thermal unit	<b>MMCF</b> .....	million cubic feet
<b>CAM</b> .....	Compliance Assurance Monitoring	<b>MSDS</b> .....	Material Safety Data Sheet
<b>CAS</b> .....	Chemical Abstracts Service	<b>NAAQS</b> ...	National Ambient Air Quality Standards
<b>CEMS</b> .....	Continuous Emission Monitor System	<b>NESHAPs</b>	..... National Emissions Standards for Hazardous Air Pollutants
<b>CFR</b> .....	Code of Federal Regulations	<b>NO<sub>x</sub></b> .....	nitrogen oxides
<b>CO</b> .....	carbon monoxide	<b>NSPS</b> .....	New Source Performance Standards
<b>CO<sub>2</sub></b> .....	carbon dioxide	<b>NSR</b> .....	New Source Review
<b>CO<sub>2e</sub></b> .....	carbon dioxide equivalent	<b>PM</b> .....	particulate matter
<b>COMS</b> .....	Continuous Opacity Monitoring System	<b>PM<sub>2.5</sub></b> .....	particulate matter less than 2.5 microns in aerodynamic diameter
<b>CSR</b> .....	Code of State Regulations	<b>PM<sub>10</sub></b> .....	particulate matter less than 10 microns in aerodynamic diameter
<b>dscf</b> .....	dry standard cubic feet	<b>ppm</b> .....	parts per million
<b>EQ</b> .....	Emission Inventory Questionnaire	<b>PSD</b> .....	Prevention of Significant Deterioration
<b>EP</b> .....	Emission Point	<b>PTE</b> .....	potential to emit
<b>EPA</b> .....	Environmental Protection Agency	<b>RACT</b> .....	Reasonable Available Control Technology
<b>EU</b> .....	Emission Unit	<b>RAL</b> .....	Risk Assessment Level
<b>fps</b> .....	feet per second	<b>SCC</b> .....	Source Classification Code
<b>ft</b> .....	feet	<b>scfm</b> .....	standard cubic feet per minute
<b>GACT</b> .....	Generally Available Control Technology	<b>SIC</b> .....	Standard Industrial Classification
<b>GHG</b> .....	Greenhouse Gas	<b>SIP</b> .....	State Implementation Plan
<b>gpm</b> .....	gallons per minute	<b>SMAL</b> .....	Screening Model Action Levels
<b>gr</b> .....	grains	<b>SO<sub>x</sub></b> .....	sulfur oxides
<b>GWP</b> .....	Global Warming Potential	<b>SO<sub>2</sub></b> .....	sulfur dioxide
<b>HAP</b> .....	Hazardous Air Pollutant	<b>tph</b> .....	tons per hour
<b>hr</b> .....	hour	<b>tpy</b> .....	tons per year
<b>hp</b> .....	horsepower	<b>VMT</b> .....	vehicle miles traveled
<b>lb</b> .....	pound	<b>VOC</b> .....	Volatile Organic Compound
<b>lbs/hr</b> .....	pounds per hour		
<b>MACT</b> .....	Maximum Achievable Control Technology		
<b>µg/m<sup>3</sup></b> .....	micrograms per cubic meter		

Dr. Jesscia Wodohodsky  
Doctor of Veterinary Medicine  
Jet Vet Veterinary Clinic LLC  
PO Box 876  
Dixon, MO 65459-6010

RE: New Source Review Permit - Project Number: 2013-09-005

Dear Dr. Wodohodsky:

Enclosed with this letter is your permit to construct. Please study it carefully and refer to Appendix A for a list of common abbreviations and acronyms used in the permit. Also, note the special conditions 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 basic 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 Kathy Kolb, at the Department of Natural Resources' 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

Susan Heckenkamp  
New Source Review Unit Chief

SH:kk1

Enclosures

c: Southeast Regional Office  
PAMS File: 2013-09-005

Permit Number: