



**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: **022017-002**

Project Number: 2016-11-018  
Installation Number: 127-0078

Parent Company: General Veterinary Clinic

Parent Company Address: 808 Hwy 24 & 36 East, Monroe City, MO 63456

Installation Name: General Veterinary Clinic

Installation Address: 808 Hwy 24 & 36 East, Monroe City, MO 63456

Location Information: Marion County, S7, T56N, R7W

Application for Authority to Construct was made for:  
Installation of a new R & K Model 34 Burn Easy Incinerator. 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.

Prepared by  
Kathy Kolb  
New Source Review Unit

Director or Designee  
Department of Natural Resources

**FEB 02 2017**

Effective Date

## 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 Enforcement and Compliance Section of 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 Enforcement and Compliance Section of the Department's Air Pollution Control Program of the anticipated date of start up of this (these) air contaminant source(s). The information must be made available within 30 days of actual startup. Also, you must notify the Department's 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 the permit application and this permit and permit review shall be kept at the installation address and shall be made available to Department's 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 using the contact information below.

### Contact Information:

Missouri Department of Natural Resources  
Air Pollution Control Program  
P.O. Box 176  
Jefferson City, MO 65102-0176  
(573) 751-4817

The regional office information can be found at the following website:

<http://dnr.mo.gov/regions/>

**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."*

General Veterinary Clinic  
Marion County, S7, T56N, R7W

1. Process Requirements for the Animal Crematory (EP-01)
  - A. General Veterinary Clinic 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 monitor that would display the temperature in the final combustion chamber with an accuracy of two percent ( $\pm 2\%$ ) and the result be manually recorded every 15 minutes during the burn cycle.
  - D. General Veterinary Clinic shall maintain the temperature in the final combustion chamber of both incinerators at or above 1300 degrees Fahrenheit.
  - E. The General Veterinary Clinic (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. Batch weight shall not exceed 200 pounds for the R & K Burn Easy Incinerator Model 34.
  - H. General Veterinary Clinic 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.
2. Opacity  
The crematory (EP-01) shall have opacity of less than ten percent (10%) at all times.

**SPECIAL CONDITIONS:**

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

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. **Fuel Requirement-Incinerator**
  - A. General Veterinary Clinic shall burn exclusively ultra low sulfur diesel fuel in their incinerator (EP-01) with a sulfur content less than or equal to 0.0015% by weight (15 parts per million by weight).
  - B. General Veterinary Clinic shall demonstrate compliance with Special Condition 4.A by obtaining records of the fuel's sulfur content from the vendor for each shipment of fuel received or by testing each shipment of fuel for the sulfur content in accordance with the method described in 10 CSR 10-6.040 *Reference Methods*.
  - C. General Veterinary Clinic shall keep the records required by Special Condition 4.B with the unit and make them available for Department of Natural Resources' employees upon request.
5. **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 General Veterinary Clinic submits within ten days a corrective action plan adequate to timely and significantly mitigate the odors. General Veterinary Clinic 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.
6. **Record Keeping and Reporting Requirements**
  - A. General Veterinary Clinic 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.

**SPECIAL CONDITIONS:**

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

- B. General Veterinary Clinic 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: 2016-11-018  
Installation ID Number: 127-0078  
Permit Number:

**022017-002**

Installation Address:

General Veterinary Clinic  
808 Hwy 24 & 36 East  
Monroe City, MO 63456

Parent Company:

General Veterinary Clinic  
808 Hwy 24 & 36 East  
Monroe City, MO 63456

Marion County, S7, T56N, R7W

REVIEW SUMMARY

- General Veterinary Clinic has applied for authority to install a new R & K Model 34 Burn Easy Incinerator.
- The application was deemed complete on November 18, 2016.
- HAP emissions are expected from the proposed equipment. HAPs of concern from this process are from the combustion of ultra low sulfur diesel fuel.
- 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.
- A secondary chamber is being used to control the PM, PM<sub>10</sub>, PM<sub>2.5</sub>, VOC, and CO 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 pollutants are below de minimis levels. 10 CSR 10-6.060 (1)(B) requires all incinerators to obtain a construction permit.
- This installation is located in Marion 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 as a part of this permit. Testing may be required as part of other state, federal or applicable rules.
- No Operating Permit is required for this installation.
- Approval of this permit is recommended with special conditions.

## PROJECT / INSTALLATION DESCRIPTION

General Veterinary Clinic is located at 808 Hwy 24 & 36 East, Monroe City, Missouri. It provides veterinary services for all animals, as well as, boarding and grooming for Monroe City and surrounding areas. No permits have been issued to General Veterinary Clinic from the Air Pollution Control Program.

General Veterinary Clinic will install a R & K Burn Easy Incinerator Model 34. Calculations were 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 34 Burn Easy Incinerator (EP-1) has a 200 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 34 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, 052013-013, and 112013-003.

The crematory was required to submit results of a stack 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. An email dated November 10, 2016 from the Testing and Emissions Unit accepted this test report as adequately representing the performance of the R & K Model 34 animal incinerator.

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 1: Emissions Summary (tons per year)

Pollutant	Regulatory De Minimis Levels	Existing Potential Emissions	Existing Actual Emissions (2013 EIQ)	Potential Emissions of the Application
<sup>1</sup> PM	25.0	N/A	N/A	0.1121
<sup>1</sup> PM <sub>10</sub>	15.0	N/A	N/A	0.1121
PM <sub>2.5</sub>	10.0	N/A	N/A	0.1121
SO <sub>x</sub>	40.0	N/A	N/A	0.0026
NO <sub>x</sub>	40.0	N/A	N/A	0.4928
VOC	40.0	N/A	N/A	0.4928
<sup>2</sup> CO	100.0	N/A	N/A	0.072796
GHG (CO <sub>2</sub> e)	75,000 / 100,000	N/A	N/A	273.06
<sup>3</sup> GHG (mass)	0.0 / 100.0 / 250.0	N/A	N/A	273.06
HAPs	10.0/25.0	N/A	N/A	0.1597

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 all pollutants are below de minimis levels.

## APPLICABLE REQUIREMENTS

General Veterinary Clinic 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).
- *Operating Permits*, 10 CSR 10-6.065 is not required because the potential emissions are below de minimis.
- *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 10-6.261

## 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*, it is recommended that this permit be granted with special conditions.

## PERMIT DOCUMENTS

The following documents are incorporated by reference into this permit:

- The Application for Authority to Construct form, dated November 3, 2016, received November 7, 2016, designating General Veterinary Clinic as the owner and operator of the installation.

**Attachment A: Incineration Compliance Worksheet  
R & K Burn Easy Model 34 Animal Incinerator**

General Veterinary Clinic  
Marion County, S7 T56N R7W  
Project Number: 2016-11-018  
Installation ID Number: 127-0078  
Permit Number: **022017-002**

This sheet covers the period from \_\_\_\_\_ to \_\_\_\_\_  
(month, year) (month, year)

Date	<sup>1</sup> Batch Weight (pounds)	<sup>2</sup> Incineration Time (minutes)	<sup>3</sup> Incineration Rate (pounds per hour)
<i>Example</i>	100	90	66.7

<sup>1</sup> A value of less than 200 pounds indicates compliance with Special Condition 1.G.  
<sup>2</sup> Record the time from when the primary chamber is ignited until the primary chamber is extinguished, per respective batch.  
<sup>3</sup> Incineration rate is calculated by dividing the batch weight by the incineration time and multiplying by 60. The maximum hourly design rate of the unit is equal to 75.0 pounds of animal remains per hour. A value less than 75.0 pounds implies compliance with Special Condition 1.F.

## 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>EIQ</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>SDS</b> .....	Safety Data Sheet
<b>GHG</b> .....	Greenhouse Gas	<b>SIC</b> .....	Standard Industrial Classification
<b>gpm</b> .....	gallons per minute	<b>SIP</b> .....	State Implementation Plan
<b>gr</b> .....	grains	<b>SMAL</b> .....	Screening Model Action Levels
<b>GWP</b> .....	Global Warming Potential	<b>SO<sub>x</sub></b> .....	sulfur oxides
<b>HAP</b> .....	Hazardous Air Pollutant	<b>SO<sub>2</sub></b> .....	sulfur dioxide
<b>hr</b> .....	hour	<b>tph</b> .....	tons per hour
<b>hp</b> .....	horsepower	<b>tpy</b> .....	tons per year
<b>lb</b> .....	pound	<b>VMT</b> .....	vehicle miles traveled
<b>lbs/hr</b> .....	pounds per hour	<b>VOC</b> .....	Volatile Organic Compound
<b>MACT</b> .....	Maximum Achievable Control Technology		
<b>µg/m<sup>3</sup></b> .....	micrograms per cubic meter		

Emissions Calculation Worksheet

2016-11-018 General Veterinary Clinic

**PTE SUMMARY**

36 Incinerator

Pollutant	lb/hr	tpy
PM2.5		
PM10		
CO		
SOx	0.0005832	0.0026
NOx		
VOC		
*HAP		0.1597

Pollutant	lb/hr	tpy
CO <sub>2</sub>	62.34	273.06

PM10 and CO emission rates from stack test. It was assumed that all PM10 to be PM2.5  
207-08-9

emissions are from webFIRE SCC 5-02-001-01 (multi chamber incinerators)

HAPs from webFIRE SCC 3-15-021-01 (Healthcare crematory stacks)

\*speciated emission factors and emission rates on next page

HAP calculations on next page DO NOT include Mercury because small animals will not have any Mercury emissions

	EF (lb/1000 gal)	Firing Rate (gallons/Hr) 2 tips	Emission (lbs/hr)
SOx	0.216	1.35	0.0005832



34 Incinerator Stack Results		
Co lb/hr	PM lb/hr	Cond lb/hr
0.00756	0.0141	0.00791
0.0239	0.0155	0.00990
0.0184	0.0205	0.00886
<b>Total</b>	<b>0.04986</b>	<b>0.0501</b>
<b>Average</b>		

PM10 and PM2.5 EF (lb/ton animals burned)	CO EF (lb/ton animals burned)
0.682	0.4432

PM10, PM2.5, and CO EF are based on stack test emission rates.

STACK TESTING SUMMARY		
	avg lb/hr**	avg tpy

\*\*Stack data (12-2-98) provided by applicant

Burner MHDR

1.35 gal-hr nozzle tips (incinerator and after-burner) x 2 x 137,000 BTU/gal / 1,000,000 =

0.3699 MBTU/hr

142S + 2S = 144S (Table 1.3-1)

S = weight % of sulfur in ultra low diesel = .0015 (15 ppm)

144 \* .0015 = 0.216 lb/10<sup>3</sup> gallon

**Greenhouse Gas Calculations**

$$\frac{E_a \text{ lb}}{\text{hr}} = \frac{C_a \text{ mL}}{\text{m}^3} \times \frac{M_a \text{ g mol}}{\text{g mol}} \times \frac{\text{lb}}{453.6 \text{ g}} \times \frac{\text{L}}{10^3 \text{ mL}} \times \frac{Q_s \text{ ft}^3}{\text{min}} \times \frac{\text{m}^3}{35.31 \text{ ft}^3} \times \frac{60 \text{ min}}{\text{hr}}$$

$$\frac{E_a \text{ lb}}{\text{hr}} = \frac{69,000 \text{ mL}}{\text{m}^3} \times \frac{44 \text{ g}}{\text{g mol}} \times \frac{\text{g mol}}{44.06 \text{ L}} \times \frac{\text{lb}}{453.5924 \text{ g}} \times \frac{\text{L}}{10^3 \text{ mL}} \times \frac{140 \text{ ft}^3}{\text{min}} \times \frac{\text{m}^3}{35.31 \text{ ft}^3} \times \frac{60 \text{ min}}{\text{hr}} = 66.179 \text{ lb/hr}$$

Note: 69,000mL should be

C<sub>a</sub> Concentration of analyte mL/m<sup>3</sup> (ppmV) Stack test CO<sub>2</sub>

6.5%

65,000 in the equation and

E<sub>a</sub> Analyte emission rate lb/hr

Emissions Calculation Worksheet

$M_w$  Molecular weight of analyte g/g-mole  
 $Q_s$  Stack flow rate, dry standard condions

140 dsfm from the test data report

62.34278644 lb/hr CO<sub>2</sub>  
273.0614046 tpy CO<sub>2</sub> =

66.1792656 \*8760/2000



Eric R. Greitens, Governor • Carol S. Comer, Acting Director

# DEPARTMENT OF NATURAL RESOURCES

dnr.mo.gov

**FEB 02 2017**

Ms. Babby Williams  
Procurement & Inventory Control Manager  
General Veterinary Clinic  
808 Hwy 24 & 36 East  
Monroe City, MO 63456

RE: New Source Review Permit - Project Number: 2016-11-018

Dear Ms. Williams:

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 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.

This permit may include requirements with which you may not be familiar. If you would like the department to meet with you to discuss how to understand and satisfy the requirements contained in this permit, an appointment referred to as a Compliance Assistance Visit (CAV) can be set up with you. To request a CAV, please contact your local regional office or fill out an online request. The regional office contact information can be found at the following website: <http://dnr.mo.gov/regions/>. The online CAV request can be found at <http://dnr.mo.gov/cav/compliance.htm>.

If you were adversely affected by this permit decision, you may be entitled to pursue an appeal before the administrative hearing commission pursuant to Sections 621.250 and 643.075.6 RSMo. To appeal, you must file a petition with the administrative hearing commission within thirty 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 administrative hearing commission, whose contact information is: Administrative Hearing Commission, United States Post Office Building, 131 West High Street, Third Floor, P.O. Box 1557, Jefferson City, Missouri 65102, phone: 573-751-2422, fax: 573-751-5018, website: [www.oa.mo.gov/ahc](http://www.oa.mo.gov/ahc).



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Ms. Babby Williams  
Page Two

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:kkj

Enclosures

c: Northeast Regional Office  
PAMS File: 2016-11-018

Permit Number: 022017-002