DEPARTMENT OF ENVIRONMENTAL QUALITY
Permitting and Compliance Division
Air Resources Management Bureau
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FINAL ENVIRONMENTAL ASSESSMENT (EA)

Issued To: Yellowstone Valley Veterinary Inc.
50 Moore Lane
Billings, MT 59101

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LEGISLATIVE ENVIRONMENTAL
POLICY OFFICE

Air Quality Permit Number: 4195-00

Preliminary Determination Issued: 03/05/08
Department Decision Issued: 03/21/08
Permit Final:

1. *Legal Description of Site*: The legal description of the site is Section 5, Township 1 South, Range 26 East, in Yellowstone County, Montana.

2. *Description of Project*: YVV is proposing to operate a natural gas-fired 2004 model Power-Pak JR (1E43-PPJ) animal crematory (Unit #2) with a maximum incineration capacity of 75 pounds per hour (lb/hr) and associated equipment. In addition, YVV operates an existing natural gas-fired 1990 model 1E43-PPJ Power Pak JR animal crematory (Unit #1) with a maximum incineration capacity of 75 lb/hr, which predates the permitting requirements for incinerators under Section 75-2-215, MCA.

3. *Objectives of Project*: The project would allow YVV to safely dispose of animal remains while maintaining compliance with negligible risk requirements as discussed in Section VI of the permit analysis. Further, the project would result in business and revenue for the company.

4. *Alternatives Considered*: In addition to the proposed action, the Department also considered the "no-action" alternative. The "no-action" alternative would deny issuance of the air quality preconstruction permit to the proposed facility. However, the Department does not consider the "no-action" alternative to be appropriate because YVV demonstrated compliance with all applicable rules and regulations as required for permit issuance. Therefore, the "no-action" alternative was eliminated from further consideration.

5. *A Listing of Mitigation, Stipulations, and Other Controls*: A list of enforceable conditions, including a BACT analysis, would be included in Permit #4195-00.

6. *Regulatory Effects on Private Property*: The Department considered alternatives to the conditions imposed in this permit as part of the permit development. The Department determined that the permit conditions are reasonably necessary to ensure compliance with applicable requirements and demonstrate compliance with those requirements and do not unduly restrict private property rights.

7. The following table summarizes the potential physical and biological effects of the proposed project on the human environment. The "no-action" alternative was discussed previously.

		Major	Moderate	Minor	None	Unknown	Comments Included
A	Terrestrial and Aquatic Life and Habitats			X			Yes
B	Water Quality, Quantity, and Distribution			X			Yes
C	Geology and Soil Quality, Stability and Moisture			X			Yes
D	Vegetation Cover, Quantity, and Quality			X			Yes
E	Aesthetics			X			Yes
F	Air Quality			X			Yes
G	Unique Endangered, Fragile, or Limited Environmental Resources			X			Yes
H	Demands on Environmental Resource of Water, Air and Energy			X			Yes
I	Historical and Archaeological Sites				X		Yes
J	Cumulative and Secondary Impacts			X			Yes

SUMMARY OF COMMENTS ON POTENTIAL PHYSICAL AND BIOLOGICAL EFFECTS: The following comments have been prepared by the Department.

A. Terrestrial and Aquatic Life and Habitats

Emissions from the proposed project would affect terrestrial and aquatic life and habitats in the proposed project area. However, as detailed in Section V and Section VI of the permit analysis, any emissions and resulting impacts from the project would be minor due to the low concentration of those pollutants emitted.

Further, the proposed crematorium would require only a limited amount of construction and would operate within a building located in an area zoned as commercial and currently used for such purposes. Overall, any impact to the terrestrial and aquatic life and habitats of the proposed project area would be minor.

B. Water Quality, Quantity and Distribution

The proposed project would not affect water quantity or distribution in the proposed project area. The crematorium would operate within a building and would not discharge or use water as part of the project.

Emissions from the proposed project would affect water quality in the proposed project area. However, as detailed in Section V and Section VI of the permit analysis, any emissions and resulting deposition impacts from the project would be minor due to the low concentration of those pollutants emitted.

C. Geology and Soil Quality, Stability and Moisture

The proposed project would not affect the geology, soil quality, stability, and moisture of the proposed project area. The proposed crematorium would require only a limited amount of construction and would operate within a building located in an area zoned as commercial and currently used for such purposes.

Further, as described in Section V and Section VI of the permit analysis, the crematorium would result in minor air pollution emissions to the outside ambient environment. These pollutants would deposit on the soils in the surrounding area. Any impact from deposition of these pollutants would be minor due to dispersion characteristics and the low concentration of those pollutants emitted.

D. Vegetation Cover, Quantity, and Quality

Emissions from the proposed project would affect vegetation cover, quantity, and quality in the proposed project area. However, as detailed in Section V and Section VI of the permit analysis any emissions and resulting impacts from the project would be minor.

Further, the proposed project would not affect the vegetation cover, quantity, and quality of the proposed project area. The proposed crematorium would require only a limited amount of construction and would operate within a building located in an area zoned as commercial and currently used for such purposes. Overall, any impact to the vegetation cover, quantity, and quality of the proposed project area would be minor.

E. Aesthetics

The proposed project would not impact the aesthetic nature of the proposed project area because the proposed crematorium would require only a limited amount of construction and would operate within a building located in an area zoned as commercial and currently used for such purposes. Because the construction area is designated for commercial use, the project would not change the aesthetic nature of the area. Further, visible emissions from the source would be limited to 10% opacity and the permit would include emission control requirements. Also, the project would result in only a minor amount of noise from normal operations.

F. Air Quality

The proposed project would result in the emission of various criteria pollutants and HAPs to the ambient air in the proposed project area. However, as detailed in Section V and Section VI of the permit analysis, YVV demonstrated, through air dispersion modeling, that any air quality impacts from the proposed project would be minor and would constitute negligible risk to human health and the environment.

The Department conducted air dispersion modeling to determine the ambient air quality impacts from HAPs that would be generated by the crematorium. The SCREENVIEW model was selected for the air dispersion modeling. The full meteorology option was selected to provide a conservative result. Receptors were placed from 0 to 5000 meters in a simple terrain array.

Stack parameters and emission rates used in the SCREENVIEW model are contained in Section V of the permit analysis and are on file with the Department. Stack velocity and gas temperature were taken from data provided by the manufacturer of the crematorium. Due to the dispersion characteristics and low levels of pollutants that would be emitted from the proposed project the Department determined that any impacts to air quality would be minor.

G. Unique Endangered, Fragile, or Limited Environmental Resources

During the permit action for Permit #4195-00, the Department contacted the Montana Natural Heritage Program (MNHP) in an effort to identify any species of special concern that may be located within or near the YVV site (Section 5, Township 1 South, Range 26 East, in Yellowstone County, Montana). Search results concluded that there are five such species of

special concern on file for the area. The species of special concern located within the defined area include the *Euderma maculatum* (spotted bat), *Phyrnosoma hernandesi* (Greater Short-horned Lizard), *Heterodon nasicus* (Western Hog-nosed Snake), *Sceloporus graciosus* (Common Sagebrush Lizard), and *Lampropeltis triangulum* (Milksnake).

While these species of special concern may be found in specific habitats within or near the defined area, the MNHP search did not indicate that these species of special concern would locate directly on or relatively near the existing industrial site. Given the existing industrial nature of the project area, it is unlikely that these species of special concern would locate on or near the project site and thus unlikely that these species of special concern would realize any impact from the wastewater treatment plant operations beyond minor air emission impacts discussed in greater detail below.

Emissions from the proposed project could impact the previously highlighted unique, endangered, fragile, or limited environmental resources located in the proposed project area. However, as detailed in Section VI of the permit analysis, any emissions and resulting impacts from the project would be minor due to the low concentration of those pollutants emitted and typical due to the existing industrial nature of the area. Overall, any impact to unique endangered, fragile, or limited environmental resources of the proposed project area would be minor.

H. Demands on Environmental Resource of Water, Air and Energy

The proposed project would result in minor demands on environmental resources of water and air as discussed in Section 7.B and 7.F, respectively, of this EA. Further, as detailed in Section V and Section VI of the permit analysis, project impacts on air resources in the proposed project area would be minor due to dispersion characteristics and the low concentration of those pollutants emitted. Finally, because the project is small by industrial standards, little energy would be required for operation and the resulting impact on energy resources would be minor.

I. Historical and Archaeological Sites

The proposed project would not result in any impacts to historical and archaeological sites in the proposed project area because the crematorium would require only a limited amount of construction and would operate within a building located in an area zoned as commercial and currently used for such purposes. According to previous correspondence from the Montana State Historic Preservation Office, there is low likelihood of adverse disturbance to any known archaeological or historic site, given previous industrial disturbance within a given area. Therefore, the operation would have no effect on any known historic or archaeological site.

J. Cumulative and Secondary Impacts

Overall, the cumulative and secondary impacts from this project on the physical and biological environment in the immediate area would be minor due to the relatively small size and potential environmental impact of the proposed operation. The Department believes that this facility could be expected to operate in compliance with all applicable rules and regulations as outlined in Permit #4195-00.

8. The following table summarizes the potential economic and social effects of the proposed project on the human environment. The "no-action" alternative was discussed previously.

		Major	Moderate	Minor	None	Unknown	Comments Included
A	Social Structures and Mores			X			Yes
B	Cultural Uniqueness and Diversity			X			Yes
C	Local and State Tax Base and Tax Revenue			X			Yes
D	Agricultural or Industrial Production				X		Yes
E	Human Health			X			Yes
F	Access to and Quality of Recreational and Wilderness Activities				X		Yes
G	Quantity and Distribution of Employment			X			Yes
H	Distribution of Population			X			Yes
I	Demands for Government Services			X			Yes
J	Industrial and Commercial Activity			X			Yes
K	Locally Adopted Environmental Plans and Goals				X		Yes
L	Cumulative and Secondary Impacts			X			Yes

SUMMARY OF COMMENTS ON POTENTIAL ECONOMIC AND SOCIAL EFFECTS: The following comments have been prepared by the Department.

A. Social Structures and Mores
B. Cultural Uniqueness and Diversity

The proposed project would have only a minor impact on the social structures or mores and cultural uniqueness and diversity of the proposed area of operation because the crematorium would require only a limited amount of construction and would operate within a building located in an area zoned as commercial and currently used for such purposes. The predominant use of the surrounding area would not change as a result of the proposed project.

C. Local and State Tax Base and Tax Revenue

The proposed project would have a minor impact on the local and state tax base and tax revenue. The project is small by industrial standards thus any economic impact to the commercially zoned area would be minor. Further, the project would require only a minor amount of new construction and a limited amount of employees/operators for normal operations.

D. Agricultural or Industrial Production

Because the crematorium would require only a limited amount of construction and would operate within a building located in an area zoned as commercial and currently used for such purposes, the project would not affect or displace any land used for agricultural production. Further, the nature of the project would dictate that no additional industrial production would result from the proposed project.

E. Human Health

The peak annual ambient impact from the operation of the crematorium would be 0.2657E-01 μg/m3. The predicted annual ambient impact of each individual HAP was determined by multiplying the peak annual ambient concentration by the emission rate of the HAP. The impacts calculated for each HAP are compared to the cancer and non-cancer levels specified in Tables 1 and 2 of ARM 17.8.770. If the predicted ambient impact of a particular HAP is less than the level specified in the table and the inhalation pathway is the only appropriate pathway, that HAP can be excluded from the human health risk assessment. The table summarized in Section V of the permit analysis indicates the calculated ambient impacts of the HAPs, the cancer and non-cancer levels, and whether or not each HAP passes the screening criteria.

As detailed in Section VI of the permit analysis, a health risk assessment was conducted to determine if the proposed crematorium would comply with the negligible risk requirement of MCA 75-2-215 and ARM 17.8.770. The emission inventory did not contain sufficient quantities of any pollutant on the Department's list of pollutants for which non-inhalation impacts must be considered; therefore, the Department determined that inhalation risk would be the only necessary pathway to consider. As defined in ARM 17.8.740(10), negligible risk is "an increase in excess lifetime cancer risk of less than 1.0 x 10-6 for any individual pollutant, and 1.0 x 10-5 for the aggregate of all pollutants, and an increase in the sum of the non-cancer hazard quotients for all pollutants with similar toxic effects of less than 1.0 in order to determine negligible risk." For the purposes of determining the negligible risk of the crematorium, all pollutants were included in the human health risk assessment.

All of the individual pollutant concentrations for the ELCR meet the acceptable risk limit because they are less than 1.00E-06 for each pollutant and less than 1.00E-05 for the aggregate of all pollutants. Further, the sums of the chronic and acute non-cancer hazard quotients are less than 1.0. Therefore, the crematorium proposed for the YVV facility meets the criteria of ARM 17.8.770 and operation of the incinerator would be considered a negligible risk to public health, safety, welfare, and to the environment. Overall, any impacts to human health in the proposed project area would be minor.

F. Access to and Quality of Recreational and Wilderness Activities

Because the crematorium would require only a limited amount of construction and would operate within a building located in an area zoned as commercial and currently used for such purposes, the project would not affect any access to or quality of any recreation or wilderness activities in the area.

G. Quantity and Distribution of Employment
H. Distribution of Population

The crematorium would require only a limited amount of construction and would operate within a building located in an area zoned as commercial and currently used for such purposes; therefore, the proposed project would require a limited amount of new employment, if any, in the area. The proposed project would require only a single operator and possibly a support employee. Therefore, the proposed project would have only a minor impact on the quantity and distribution of population and employment in the area.

I. Demands for Government Services

Government services would be required for acquiring the appropriate permits from government agencies. In addition, the permitted source of emissions would be subject to periodic inspections by government personnel. Overall, demands for government services would be minor.

J. Industrial and Commercial Activity

The proposed project would result in only a minor impact on local industrial and commercial activity because the crematorium would require only a limited amount of new construction, would operate within a building located in an area zoned as commercial and currently used for such purposes, and would not result in additional industrial production. Overall, any impacts to industrial and commercial activity in the proposed area of operation would be minor.

K. Locally Adopted Environmental Plans and Goals

The Department is not aware of any locally adopted environmental plans or goals in the immediate area affected by the proposed project. The state standards would be protective of the proposed project area.

L. Cumulative and Secondary Impacts

Overall, cumulative and secondary impacts from this project would result in minor impacts to the economic and social environment in the immediate area due to the relatively small size of the operation. The Department believes that this facility could be expected to operate in compliance with all applicable rules and regulations as would be outlined in Permit #4195-00.

Recommendation: No Environmental Impact Statement (EIS) is required.

If an EIS is not required, explain why the EA is an appropriate level of analysis: The current permitting action is for the construction and operation of a crematorium. Permit #4195-00 includes conditions and limitations to ensure the facility will operate in compliance with all applicable rules and regulations. In addition, there are no significant impacts associated with this proposal.

Other groups or agencies contacted or which may have overlapping jurisdiction: Montana Historical Society – State Historic Preservation Office, Natural Resource Information System – Montana Natural Heritage Program

Individuals or groups contributing to this EA: Department of Environmental Quality – Air Resources Management Bureau, Montana Historical Society – State Historic Preservation Office, Natural Resource Information System – Montana Natural Heritage Program

EA prepared by: Trista Glazier
Date: February 26, 2008