

August 8, 2024

Jaime Barnes, Owner
Pet Passages
Pet Passages – Billings Facility
2223 1st Avenue, North
Billings, MT 59101

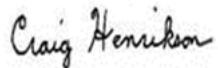
Sent via email: jaimebarnes71@gmail.com

RE: Final for MAQP #5306-00

Dear Mr. Barnes:

Montana Air Quality Permit (MAQP) #5306-00 is deemed final as of August 7, 2024, by DEQ. This permit is for Pet Passages. All conditions of the Decision remain the same. Enclosed is a copy of your permit with the final date indicated.

For DEQ,



Craig Henrikson
Permitting Services Section Supervisor
Air Quality Bureau
(406) 444-6711



John P. Proulx
Air Quality Engineer
Air Quality Bureau
(406) 444-5391

**Montana Department of Environmental Quality
Air, Energy & Mining Division
Air Quality Bureau**

Montana Air Quality Permit #5306-00

Pet Passages
Pet Passages – Billings Facility
Section 33, Township 1 North, Range 26 East
2223 1st Avenue North
Billings, MT 59101

August 7, 2024



MONTANA AIR QUALITY PERMIT

Issued To: Pet Passages
2223 1st Avenue North
Billings, MT 59101

MAQP: #5306-00
Application Complete: 05/20/2024
Preliminary Determination Issued: 06/17/2024
DEQ's Decision Issued: 07/22/2024
Permit Final: 08/07/2024

A Montana Air Quality Permit (MAQP), with conditions, is hereby granted to Pet Passages – Pet Passages Billings Facility (PPBF), pursuant to Sections 75-2-204 and 211 of the Montana Code Annotated (MCA), as amended, and Administrative Rules of Montana (ARM) 17.8.740, *et seq.*, as amended, for the following:

Section I: Permitted Facilities

A. Permitted Equipment

On May 1, 2024, the Department of Environmental Quality (DEQ) received an application from PPBF to install and operate a new pet cremation unit at their Billings location. Additional information was received on May 20, 2024.

B. Plant Location

The PPBF facility is located at 2223 1st Avenue North in Billings, MT. The legal description of the site is Section 33, Township 1 North, Range 26 East, in Yellowstone County, Montana. Coordinates for the site are Latitude 45.785494 degrees and Longitude -108.499449 degrees.

Section II: Conditions and Limitations

A. Emission Limitations

1. The design capacity of the PPBF facility shall not exceed 125 pounds per hour (lb/hr) (ARM 17.8.749).
2. PPBF shall not incinerate/cremate any material other than animal remains and/or any corresponding container unless otherwise approved, in writing, by DEQ (ARM 17.8.749).
3. The secondary chamber shall be maintained above 1,500 °F (Fahrenheit) during incineration for any one-hour averaging period with no single reading less than 1,450 °F. The operating temperatures shall be maintained during operation and for one half hour after the feed has stopped (ARM 17.8.752).
4. PPBF shall use pipeline quality natural gas as a supplemental fuel and maintain good combustion practices to minimize emissions (ARM 17.8.752).

5. PPBF shall develop incinerator operation procedures, print those procedures in an incinerator operation procedures manual, and require all personnel who operate the incinerator to familiarize themselves with the operating procedures. A copy of this manual shall be supplied to DEQ upon request (ARM 17.8.749 and ARM 17.8.752).
6. PPBF shall not cause or authorize to be discharged to the atmosphere from each incinerator/crematorium:
 - a. Any visible emissions that exhibit an opacity of 10% or greater (ARM 17.8.749 and ARM 17.8.752).
 - b. Any particulate emissions in excess of 0.10 grains per dry standard cubic foot (gr/dscf), corrected to 12% CO₂ (ARM 17.8.749).

B. Testing Requirements

1. All compliance source tests shall conform to the requirements of the Montana Source Test Protocol and Procedures Manual (ARM 17.8.106).
2. DEQ may require further testing (ARM 17.8.105).

C. Monitoring Requirements

1. PPBF shall install, calibrate, maintain, and operate continuous monitoring and recording equipment to measure the secondary chamber temperature (ARM 17.8.752).
2. PPBF shall record the daily quantity of material incinerated/cremated, the temperature of the secondary chamber, and the daily hours of operation for the incinerator (ARM 17.8.749).

D. Operational Reporting Requirements

1. PPBF shall supply the DEQ with annual production information for all emission points, as required by the DEQ in the annual emission inventory request. The request will include, but is not limited to, all sources of emissions identified in the emission inventory contained in the permit analysis.

Production information shall be gathered on a calendar-year basis and submitted to the DEQ by the date required in the emission inventory request. Information shall be in the units required by the DEQ. This information may be used to calculate operating fees, based on actual emissions from the facility, and/or to verify compliance with permit limitations (ARM 17.8.505).

PPBF shall submit the following information annually to the DEQ by March 1 of each year; the information may be submitted along with the annual emission inventory (ARM 17.8.505).

- a. Daily quantities of material incinerated/cremated
 - b. Daily hours of operation for the incinerator
 - c. Secondary chamber temperature of the incinerator while in operation
2. PPBF shall notify the DEQ of any construction or improvement project conducted, pursuant to ARM 17.8.745, that would include the addition of a new emissions unit, change in control equipment, stack height, stack diameter, stack flow, stack gas temperature, source location, or fuel specifications, or would result in an increase in source capacity above its permitted operation. The notice must be submitted to the DEQ, in writing, 10 days prior to startup or use of the proposed de minimis change, or as soon as reasonably practicable in the event of an unanticipated circumstance causing the de minimis change and must include the information requested in ARM 17.8.745(l)(d) (ARM 17.8.745).
3. All records compiled in accordance with this permit must be maintained by PPBF as a permanent business record for at least 5 years following the date of the measurement and must be available at the site for inspection by the DEQ and must be submitted to the DEQ upon request. These records may be stored at a location other than the site upon approval by the DEQ (ARM 17.8.749).

E. Notification

1. PPBF shall provide DEQ with written notification of commencement of construction of the new incinerator within 30 days after commencement of construction.
2. PPBF shall provide DEQ with written notification of the actual start-up date of the new incinerator within 15 days of actual startup.

SECTION III: General Conditions

- A. Inspection – PPBF shall allow the DEQ's representatives access to the source at all reasonable times for the purpose of making inspections or surveys, collecting samples, obtaining data, auditing any monitoring equipment such as Continuous Emission Monitoring Systems (CEMS) or Continuous Emission Rate Monitoring Systems (CERMS), or observing any monitoring or testing, and otherwise conducting all necessary functions related to this permit.
- B. Waiver – The permit and the terms, conditions, and matters stated herein shall be deemed accepted if PPBF fails to appeal as indicated below.
- C. Compliance with Statutes and Regulations – Nothing in this permit shall be construed as relieving PPBF of the responsibility for complying with any applicable federal or Montana statute, rule, or standard, except as specifically provided in ARM 17.8.740, et seq. (ARM 17.8.756).
- D. Enforcement – Violations of limitations, conditions and requirements contained herein may constitute grounds for permit revocation, penalties, or other enforcement action as specified in Section 75-2-401, et seq., MCA.

- E. Appeals – Any person or persons jointly or severally adversely affected by the DEQ’s decision may request, within 15 days after the DEQ renders its decision, upon affidavit setting forth the grounds therefor, a hearing before the Board of Environmental Review (Board). A hearing shall be held under the provisions of the Montana Administrative Procedures Act. The filing of a request for a hearing does not stay the DEQ’s decision, unless the Board issues a stay upon receipt of a petition and a finding that a stay is appropriate under Section 75-2-211(11)(b), MCA. The issuance of a stay on a permit by the Board postpones the effective date of the DEQ’s decision until conclusion of the hearing and issuance of a final decision by the Board. If a stay is not issued by the Board, the DEQ’s decision on the application is final 16 days after the DEQ’s decision is made.
- F. Permit Inspection – As required by ARM 17.8.755, Inspection of Permit, a copy of the air quality permit shall be made available for inspection by the DEQ at the location of the source.
- G. Permit Fee – Pursuant to Section 75-2-220, MCA, failure to pay the annual operation fee by PPBF may be grounds for revocation of this permit, as required by that section and rules adopted thereunder by the Board.
- H. Duration of Permit – Construction or installation must begin or contractual obligations entered into that would constitute substantial loss within 3 years of permit issuance and proceed with due diligence until the project is complete or the permit shall expire (ARM 17.8.762).

Montana Air Quality Permit Analysis
Pet Passages
MAQP #5306-00

I. Introduction/Process Description

Pet Passages – Pet Passages Billings Facility (PPBF) owns and operates a pet crematorium capable of incinerating up to 125 pounds per hour (lb/hr). The facility is located in Section 33, Township 1 North, Range 22 East, in Yellowstone County, Montana. Coordinates for the site are Latitude 45.785494 degrees and Longitude -108.499449 degrees.

A. Permitted Equipment

PPBF is proposing to install and operate a new 1.5 million British thermal unit per hour (MMBtu/hr) Keller Manufacturing Inc. multiple chamber cremation unit with a maximum design capacity of 125 lb/hr. The primary chamber would be fitted with a 0.5 MMBtu/hr burner and the secondary chamber with a 1.0 MMBtu/hr burner.

B. Source Description

The cremation unit uses natural gas as a fuel source and is capable of incinerating up to 125 lb/hr of animal remains.

C. Public Comments

Person/Group Commenting	Permit Reference	Comment	DEQ Response
No Public Comments Received			

D. Additional information, such as applicable rules and regulations, Best Available Control Technology (BACT)/Reasonably Available Control Technology (RACT) determinations, air quality impacts, and environmental assessments, is included in the analysis associated with each change to the permit.

II. Applicable Rules and Regulations

The following are partial explanations of some applicable rules and regulations that apply to the facility. The complete rules are stated in the Administrative Rules of Montana (ARM) and are available, upon request, from the DEQ. Upon request, the DEQ will provide references for location of complete copies of all applicable rules and regulations or copies where appropriate.

A. ARM 17.8, Subchapter 1 – General Provisions, including but not limited to:

1. ARM 17.8.101 Definitions. This rule includes a list of applicable definitions used in this chapter, unless indicated otherwise in a specific subchapter.

2. ARM 17.8.105 Testing Requirements. Any person or persons responsible for the emission of any air contaminant into the outdoor atmosphere shall, upon written request of the DEQ, provide the facilities and necessary equipment (including instruments and sensing devices) and shall conduct tests, emission or ambient, for such periods of time as may be necessary using methods approved by the DEQ.
3. ARM 17.8.106 Source Testing Protocol. The requirements of this rule apply to any emission source testing conducted by the DEQ, any source or other entity as required by any rule in this chapter, or any permit or order issued pursuant to this chapter, or the provisions of the Clean Air Act of Montana, 75-2-101, *et seq.*, Montana Code Annotated (MCA).

PPBF shall comply with the requirements contained in the Montana Source Test Protocol and Procedures Manual, including, but not limited to, using the proper test methods and supplying the required reports. A copy of the Montana Source Test Protocol and Procedures Manual is available from the DEQ upon request.

4. ARM 17.8.110 Malfunctions. (2) The DEQ must be notified promptly by telephone whenever a malfunction occurs that can be expected to create emissions in excess of any applicable emission limitation or to continue for a period greater than 4 hours.
5. ARM 17.8.111 Circumvention. (1) No person shall cause or permit the installation or use of any device or any means that, without resulting in reduction of the total amount of air contaminant emitted, conceals or dilutes an emission of air contaminant that would otherwise violate an air pollution control regulation. (2) No equipment that may produce emissions shall be operated or maintained in such a manner as to create a public nuisance.

B. ARM 17.8, Subchapter 2 – Ambient Air Quality, including, but not limited to the following:

1. ARM 17.8.204 Ambient Air Monitoring
2. ARM 17.8.210 Ambient Air Quality Standards for Sulfur Dioxide
3. ARM 17.8.211 Ambient Air Quality Standards for Nitrogen Dioxide
4. ARM 17.8.212 Ambient Air Quality Standards for Carbon Monoxide
5. ARM 17.8.213 Ambient Air Quality Standard for Ozone
6. ARM 17.8.214 Ambient Air Quality Standard for Hydrogen Sulfide
7. ARM 17.8.220 Ambient Air Quality Standard for Settled Particulate Matter
8. ARM 17.8.221 Ambient Air Quality Standard for Visibility
9. ARM 17.8.222 Ambient Air Quality Standard for Lead
10. ARM 17.8.223 Ambient Air Quality Standard for PM₁₀
11. ARM 17.8.230 Fluoride in Forage

PPBF must maintain compliance with the applicable ambient air quality standards.

C. ARM 17.8, Subchapter 3 – Emission Standards, including, but not limited to:

1. ARM 17.8.304 Visible Air Contaminants. This rule requires that no person may cause or authorize emissions to be discharged into the outdoor atmosphere from any source installed after November 23, 1968, that exhibit an opacity of 20% or greater averaged over 6 consecutive minutes.
2. ARM 17.8.308 Particulate Matter, Airborne. (1) This rule requires an opacity limitation of less than 20% for all fugitive emission sources and that reasonable precautions be taken to control emissions of airborne particulate matter. (2) Under this rule, PPBF shall not cause or authorize the use of any street, road, or parking lot without taking reasonable precautions to control emissions of airborne particulate matter.
3. ARM 17.8.309 Particulate Matter, Fuel Burning Equipment. This rule requires that no person shall cause, allow, or permit to be discharged into the atmosphere particulate matter caused by the combustion of fuel in excess of the amount determined by this rule.
4. ARM 17.8.310 Particulate Matter, Industrial Process. This rule requires that no person shall cause, allow, or permit to be discharged into the atmosphere particulate matter in excess of the amount set forth in this rule.
5. ARM 17.8.316 Incinerators. This rule requires that no person may cause or authorize emissions to be discharged into the outdoor atmosphere from any incinerator, particulate matter in excess of 0.10 grains per standard cubic foot of dry flue gas, adjusted to 12% carbon dioxide and calculated as if no auxiliary fuel had been used. Further, no person shall cause or authorize to be discharged into the outdoor atmosphere from any incinerator emissions that exhibit an opacity of 10% or greater averaged over 6 consecutive minutes.
6. ARM 17.8.322 Sulfur Oxide Emissions--Sulfur in Fuel. This rule requires that no person shall burn liquid, solid, or gaseous fuel in excess of the amount set forth in this rule.
7. ARM 17.8.324 Hydrocarbon Emissions--Petroleum Products. (3) No person shall load or permit the loading of gasoline into any stationary tank with a capacity of 250 gallons or more from any tank truck or trailer, except through a permanent submerged fill pipe, unless such tank is equipped with a vapor loss control device as described in (1) of this rule.
8. ARM 17.8.340 Standard of Performance for New Stationary Sources and Emission Guidelines for Existing Sources. This rule incorporates, by reference, 40 CFR Part 60, Standards of Performance for New Stationary Sources (NSPS). This facility is not an NSPS affected source because it does not meet the definition of any NSPS subpart defined in 40 CFR Part 60.

D. ARM 17.8, Subchapter 5 – Air Quality Permit Application, Operation, and Open Burning Fees, including, but not limited to:

1. ARM 17.8.504 Air Quality Permit Application Fees. This rule requires that an applicant submit an air quality permit application fee concurrent with the submittal of an air quality permit application. A permit application is incomplete until the proper application fee is paid to the DEQ. PPBF submitted the appropriate permit application fee for the current permit action.
2. ARM 17.8.505 Air Quality Operation Fees. An annual air quality operation fee must, as a condition of continued operation, be submitted to the DEQ by each source of air contaminants holding an air quality permit (excluding an open burning permit) issued by the DEQ. The air quality operation fee is based on the actual or estimated actual amount of air pollutants emitted during the previous calendar year.

An air quality operation fee is separate and distinct from an air quality permit application fee. The annual assessment and collection of the air quality operation fee, described above, shall take place on a calendar-year basis. The DEQ may insert into any final permit issued after the effective date of these rules, such conditions as may be necessary to require the payment of an air quality operation fee on a calendar-year basis, including provisions that prorate the required fee amount.

E. ARM 17.8, Subchapter 7 – Permit, Construction, and Operation of Air Contaminant Sources, including, but not limited to:

1. ARM 17.8.740 Definitions. This rule is a list of applicable definitions used in this chapter, unless indicated otherwise in a specific subchapter.
2. ARM 17.8.743 Montana Air Quality Permits--When Required. This rule requires a person to obtain an air quality permit or permit modification to construct, modify, or use any air contaminant sources that have the potential to emit (PTE) greater than 25 tons per year of any pollutant. PPBF does not have a PTE greater than 25 tons per year of any pollutant; however, in accordance with MCA 75-2-215, an air quality permit must be obtained prior to the construction and operation of any incinerator, regardless of potential incinerator emissions. Because PPBF must obtain an air quality permit, all normally applicable requirements apply in this case.
3. ARM 17.8.744 Montana Air Quality Permits--General Exclusions. This rule identifies the activities that are not subject to the Montana Air Quality Permit program.
4. ARM 17.8.745 Montana Air Quality Permits--Exclusion for De Minimis Changes. This rule identifies the de minimis changes at permitted facilities that do not require a permit under the Montana Air Quality Permit Program.
5. ARM 17.8.748 New or Modified Emitting Units--Permit Application Requirements.
(1) This rule requires that a permit application be submitted prior to installation, modification, or use of a source. PPBF submitted the required permit application for the current permit action.

(7) This rule requires that the applicant notify the public by means of legal publication in a newspaper of general circulation in the area affected by the application for a permit. PPBF submitted an affidavit of publication of public notice for the *May 10, May 17, and May 24, 2024*, issue of the *Yellowstone County News*, a newspaper of general circulation in the city of Billings, in Yellowstone County, as proof of compliance with the public notice requirements.

6. ARM 17.8.749 Conditions for Issuance or Denial of Permit. This rule requires that the permits issued by the DEQ must authorize the construction and operation of the facility or emitting unit subject to the conditions in the permit and the requirements of this subchapter. This rule also requires that the permit must contain any conditions necessary to assure compliance with the Federal Clean Air Act (FCAA), the Clean Air Act of Montana, and rules adopted under those acts.
7. ARM 17.8.752 Emission Control Requirements. This rule requires a source to install the maximum air pollution control capability that is technically practicable and economically feasible, except that BACT shall be utilized. The required BACT analysis is included in Section III of this permit analysis.
8. ARM 17.8.755 Inspection of Permit. This rule requires that air quality permits shall be made available for inspection by the DEQ at the location of the source.
9. ARM 17.8.756 Compliance with Other Requirements. This rule states that nothing in the permit shall be construed as relieving PPBF of the responsibility for complying with any applicable federal or Montana statute, rule, or standard, except as specifically provided in ARM 17.8.740, *et seq.*
10. ARM 17.8.759 Review of Permit Applications. This rule describes the DEQ's responsibilities for processing permit applications and making permit decisions on those permit applications that do not require the preparation of an environmental impact statement.
11. ARM 17.8.762 Duration of Permit. An air quality permit shall be valid until revoked or modified, as provided in this subchapter, except that a permit issued prior to construction of a new or modified source may contain a condition providing that the permit will expire unless construction is commenced within the time specified in the permit, which in no event may be less than 1 year after the permit is issued.
12. ARM 17.8.763 Revocation of Permit. An air quality permit may be revoked upon written request of the permittee, or for violations of any requirement of the Clean Air Act of Montana, rules adopted under the Clean Air Act of Montana, the FCAA, rules adopted under the FCAA, or any applicable requirement contained in the Montana State Implementation Plan (SIP).

13. ARM 17.8.764 Administrative Amendment to Permit. An air quality permit may be amended for changes in any applicable rules and standards adopted by the Board of Environmental Review (Board) or changed conditions of operation at a source or stack that do not result in an increase of emissions as a result of those changed conditions.

The owner or operator of a facility may not increase the facility's emissions beyond permit limits unless the increase meets the criteria in ARM 17.8.745 for a de minimis change not requiring a permit, or unless the owner or operator applies for and receives another permit in accordance with ARM 17.8.748, ARM 17.8.749, ARM 17.8.752, ARM 17.8.755, and ARM 17.8.756, and with all applicable requirements in ARM Title 17, Chapter 8, Subchapters 8, 9, and 10.

14. ARM 17.8.765 Transfer of Permit. This rule states that an air quality permit may be transferred from one person to another if written notice of intent to transfer, including the names of the transferor and the transferee, is sent to the DEQ.
15. ARM 17.8.770 Additional Requirements for Incinerators. This rule specifies the additional information that must be submitted to the DEQ for incineration facilities subject to 75-2-215, Montana Code Annotated (MCA).
16. ARM 17.8.771 Mercury Emission Standards for Mercury-Emitting Generating Units. This rule identifies mercury emission limitation requirements, mercury control strategy requirements, and application requirements for mercury-emitting generating units.

F. ARM 17.8, Subchapter 8 – Prevention of Significant Deterioration of Air Quality, including, but not limited to:

1. ARM 17.8.801 Definitions. This rule is a list of applicable definitions used in this subchapter.
2. ARM 17.8.818 Review of Major Stationary Sources and Major Modifications--Source Applicability and Exemptions. The requirements contained in ARM 17.8.819 through ARM 17.8.827 shall apply to any major stationary source and any major modification, with respect to each pollutant subject to regulation under the FCAA that it would emit, except as this subchapter would otherwise allow.

This facility is not a major stationary source because this facility is not a listed source and the facility's PTE is below 250 tons per year of any pollutant (excluding fugitive emissions).

G. ARM 17.8, Subchapter 12 – Operating Permit Program Applicability, including, but not limited to:

1. ARM 17.8.1201 Definitions. (23) Major Source under Section 7412 of the FCAA is defined as any source having:
 - a. PTE > 100 tons/year of any pollutant;

- b. PTE > 10 tons/year of any one hazardous air pollutant (HAP), PTE > 25 tons/year of a combination of all HAPs, or lesser quantity as the DEQ may establish by rule; or
- c. PTE > 70 tons/year of particulate matter with an aerodynamic diameter of 10 microns or less (PM₁₀) in a serious PM₁₀ nonattainment area.

2. ARM 17.8.1204 Air Quality Operating Permit Program. (1) Title V of the FCAA amendments of 1990 requires that all sources, as defined in ARM 17.8.1204(1), obtain a Title V Operating Permit. In reviewing and issuing MAQP #5306-00 for PPBF, the following conclusions were made:

- a. The facility's PTE is less than 100 tons/year for any pollutant.
- b. The facility's PTE is less than 10 tons/year for any one HAP and less than 25 tons/year for all HAPs.
- c. This source is not located in a serious PM₁₀ nonattainment area.
- d. This facility is not subject to any current NSPS.
- e. This facility is not subject to any current NESHAP standards.
- f. This source is not a Title IV affected source, or a solid waste combustion unit.
- g. This source is not an EPA designated Title V source.

Based on these facts, the DEQ determined that PPBF will be a minor source of emissions as defined under Title V.

H. MCA 75-2-103, Definitions provided, in part, as follows:

- 1. "Incinerator" means any single or multiple-chambered combustion device that burns combustible material, alone or with a supplemental fuel or catalytic combustion assistance, primarily for the purpose of removal, destruction, disposal, or volume reduction of all or any portion of the input material.
- 2. "Solid waste" means all putrescible and nonputrescible solid, semisolid, liquid, or gaseous wastes, including, but not limited to air pollution control facilities.

I. MCA 75-2-215, Solid or hazardous waste incineration – additional permit requirements:

- 1. MCA 75-2-215 requires air quality permits for all new commercial solid waste incinerators; therefore, PPBF must obtain an air quality permit.
- 2. MCA 75-2-215 requires the applicant to provide, to DEQ's satisfaction, a characterization and estimate of emissions and ambient concentrations of air pollutants, including hazardous air pollutants from the incineration of solid waste.

DEQ determined that the information submitted in the MAQP application was sufficient to fulfill this requirement.

3. MCA 75-2-215 requires that DEQ reach a determination that the projected emissions and ambient concentrations constitute a negligible risk to public health, safety, and welfare. DEQ completed a health risk assessment based on an emissions inventory and ambient air quality modeling for this MAQP application. Based on the results of the emission inventory, modeling, and the health risk assessment, DEQ determined that PPBF complies with this requirement.
4. MCA 75-2-215 requires the application of pollution control equipment or procedures that meet or exceed BACT. DEQ determined that the design of the incinerator and operating the incinerator according to the manufacturer-recommended operation procedures constitutes BACT.

III. BACT Determination

A BACT determination is required for each new or modified source. PPBF shall install on the new or modified source the maximum air pollution control capability which is technically practicable and economically feasible, except that BACT shall be utilized.

PPBF proposes to install and operate a crematorium equipped with a secondary chamber designed to reduce the amount of pollutants, including HAPs, emitted from the incinerator. Previous research conducted by DEQ indicates crematoriums of this size have not been required to install additional air pollution control equipment beyond that provided by the controlled air design of the incinerator, which maintains an appropriate and stable unit temperature and retention of combustion gases within the secondary chamber to maximize pollutant destruction.

With the estimated particulate matter emissions being less than 1 ton/year, the incremental cost per ton of additional control would be very high and not in line with control costs of other similar sources. In addition, the incinerator is limited by this permit to 0.10 grains per dry standard cubic foot for particulate matter and to 10% opacity (visible emissions). Furthermore, the health risk assessment shows negligible risks from the small amount of HAP emissions from this incinerator as proposed.

BACT for products of combustion/incineration (carbon monoxide (CO), oxides of nitrogen (NO_x), volatile organic compounds (VOC), and sulfur dioxide (SO₂) and HAPs) resulting from crematorium operations is proper crematorium design and operation.

Proper design includes relying on good turbulence, high temperature and the residence time within the secondary chamber. Turbulence is achieved with proper introduction of air into the combustion chambers. Temperature is achieved by including the requirement that the secondary chamber must be maintained at an operating temperature of 1500 °F with no single reading less than 1450 °F. Residence time is achieved by sizing the secondary chamber large enough to support final combustion within the secondary combustion chamber.

This design incorporates no heat recovery from the secondary combustion chamber and therefore, the stack volume operates effectively as an extension of the secondary combustion chamber volume. When the volume of the secondary combustion chamber and stack are combined the average residence time is over 1 second. Furthermore, natural gas combustion inherently results in low emissions of air pollutants due to characteristics of the fuel fired.

Potential PM₁₀, PM_{2.5}, NO_x, CO, VOC, and SO₂ emissions from the combustion of natural gas to operate the crematorium are less than 1 ton/year. Because potential emissions of all regulated pollutants resulting from natural gas combustion are low, incorporation of available pollutant-specific control technologies would result in high cost per ton removed values thereby making pollutant-specific add-on controls for PM₁₀, PM_{2.5}, NO_x, CO, VOC, and SO₂ economically infeasible in this case.

Based on these conclusions, DEQ determined that proper unit design, along with the combustion of pipeline quality natural gas, and proper operation and maintenance of the crematorium with no additional control constitutes BACT.

IV. Emission Inventory

Assumptions – 125 pounds per hour incineration rate (lb/hr)
 3,120 hours per year (hr/yr)
 9.8039E-4 standard cubic feet per British thermal unit (scf/Btu)
 1,500,000 British thermal units per hour (mmbtu/hr)

PTE from Natural Gas Combustion			
Pollutant	Emission Factor (lb/MMft ³)	Annual (lb/yr)	Annual (Ton/yr)
PM ₁₀ & PM _{2.5} (including condensable)	7.6	34.87	0.02
NO _x	100	458.82	0.23
CO	84	385.41	0.19
SO ₂	0.6	2.75	0.00
VOC	5.5	25.24	0.01

$$\text{Calculation: } \frac{\text{mmbtu}}{\text{hr}} \times \frac{\text{scf}}{\text{btu}} \times \frac{\text{lb}}{\text{mmscf}} \times \frac{\text{hr}}{\text{yr}} \times \frac{\text{ton}}{\text{lb}} = \frac{\text{ton}}{\text{yr}}$$

PTE from Cremation of Body (including case wrappings)			
Pollutant	Emission Factor (lb/150 lb body)	Annual (lb/yr)	Annual (Tons/yr)
PM ₁₀ & PM _{2.5} (including condensable)	8.50E-02	744.60	0.37
NO _x	2.57E-01	2251.32	1.13
CO	2.21E-01	1935.96	0.97
SO ₂	1.63E-01	1427.88	0.71
VOC	2.24E-01	1962.24	0.98

$$\text{Calculation: } \frac{\text{mmbtu}}{\text{hr}} \times \frac{\text{scf}}{\text{btu}} \times \frac{\text{lb}}{\text{mmscf}} \times \frac{\text{hr}}{\text{yr}} \times \frac{\text{ton}}{\text{lb}} = \frac{\text{ton}}{\text{yr}}$$

Total Criteria Pollutant Emissions			
Pollutant	Nat. Gas (Tons/yr)	Cremation (Tons/yr)	Annual (Tons/yr)
PM ₁₀ & PM _{2.5}	0.02	0.37	0.39
NO _x	0.23	1.13	1.36
CO	0.19	0.97	1.16
SO ₂	0.00	0.71	0.72
VOC	0.01	0.98	0.99

V. Existing Air Quality

The PPBF facility is located in Section 33, Township 1 North, Range 22 East, in Yellowstone County, Montana. Coordinates for the site are Latitude 44.785494 degrees and Longitude -108.499449 degrees. The immediate area in which the proposed facility is planned is designated as maintenance for carbon monoxide (CO). Along with CO, the Billings sulfur dioxide (SO₂) maintenance area is located approximately 0.82 miles to the east. The area is considered attainment for all other regulated pollutants. PPBF's maximum potential emissions of any pollutant, including PM₁₀, are not expected to have an impact on existing air quality based on the limited amounts of emissions generated.

VI. Air Quality Impacts

This permit contains conditions and limitations that would protect air quality for the site and surrounding area.

VII. Ambient Air Impact Analysis

DEQ determined, based on amount of allowable emission, that the impacts from this permitting action will be minor. DEQ believes it will not cause or contribute to a violation of any ambient air quality standard.

VIII. Human Health Risk Assessment

A health risk assessment was conducted to determine if the proposed crematorium complies with the negligible risk requirement of MCA 75-2-215. The environmental effects unrelated to human health were not considered in determining compliance with the negligible risk standard but were evaluated as required by the Montana Environmental Policy Act, in determining compliance with all applicable rules or other requirements requiring protection of public health, safety, welfare, and the environment.

DEQ conducted SCREEN3 Modeling, an EPA-approved screening model, using the indicated inputs obtained from the emission inventory and a HAP emission rate of 3.19E-05 grams per second (g/s), which is the sum of all toxic pollutant and/or HAP emissions from the proposed crematorium. The maximum 1-hour modeled concentration was then converted to an annual average and used in the risk assessment. The individual one-hour results for each pollutant were calculated by multiplying the maximum modeled annual concentration of toxic and/or HAPs in micrograms per cubic meter ($\mu\text{g}/\text{m}^3$), by the percentage of each individual pollutant identified within the emission inventory.

The emission factors employed in development of the emission inventory were obtained from AP-42; as such include pollutant contributions of fuel utilized in firing the crematory.

Pursuant to ARM 17.8.770(1)(c), pollutants may be excluded from the human health risk assessment if DEQ determines that exposure from inhalation is the only appropriate pathway to consider in the human health risk assessment and if the ambient concentrations of the pollutants (calculated using the potential to emit; enforceable limits or controls) are less than the levels specified in Table 1 or Table 2 of ARM 17.8.770.

The proposed PPBF incinerator has a stack height of 12 feet (ft), with vertical discharge, a stack exit temperature of ~ 900 °F, and an exit velocity of 22.6 feet/second with a 24-inch diameter stack. Ambient air modeling was accomplished using SCREEN3 software; an EPA approved ambient air dispersion. The SCREEN3 Modeling results are provided below:

Screen3 Modeling			
Calculation Procedure	Max Concentration ($\mu\text{g}/\text{m}^3$)	Distance to Max (m)	Terrain Height (m)
Simple Terrain	0.001182	73	0
Distance to nearest structure (m)		~ 6.2	

Although not all pollutants exceeded the levels specified in Table 1 or Table 2 of ARM 17.8.770, DEQ conducted a full risk assessment. DEQ included those pollutants for which emissions factors are available for crematory operations.

Although additional species of pollutants have been identified in documented emission factors for the combustion of natural gas, prior analyses indicate those pollutants would pass the human health risk assessment. Therefore, emission factors based on stack test data specific to crematory emissions were used. For those pollutants reviewed, the calculated cancer risks demonstrate there is not more than a negligible health, safety, and welfare risk to the public and to the environment, as defined in ARM 17.8.740(16).

As documented in the Negligible Risk Assessment table and in accordance with DEQ's negligible risk requirement, as defined in ARM 17.8.740(16), no individual pollutant concentration exceeds the Cancer Risk threshold of 1.00E-06, the sum of all the Cancer Risk concentrations (1.020E-11) do not exceed 1.00E-05. Further, the sum of the Chronic Non-cancer Reference Exposure Level (CNCREL) hazard quotient of 2.741E-07 is less than 1.0 as required to demonstrate compliance with the negligible risk requirement.

HAP Category / Pollutant Name	Exceed ARM 17.8.770 Table 1?	Exceed ARM 17.8.770 Table 2 Chronic?	Exceed ARM 17.8.770 Table 2 Acute?	Cancer URF (2)	Cancer Risk (3)	CNCREL (4) (ug/m ³)	CNCREL Quotient (5)
Heavy Metals	--	--	--	--	--	--	--
Antimony (less than)	No	No	No	N/A	N/A	N/A	N/A
Arsenic (less than)	No	No	No	0.0043	2.58E-12	0.015	0.000000044
Beryllium	No	No	No	0.0024	1.3152E-13	0.02	2.74E-09
Cadmium	No	No	No	0.0018	7.92E-13	0.01	0.000000044
Chromium	No	No	No	N/A	N/A	N/A	N/A
Chromium, hx	No	No	No	0.012	6.48E-12	0.1	5.4E-09
Cobalt (less than)	No	No	No	N/A	N/A	0.1	3.5E-10
Lead	No	No	No	N/A	N/A	0.15	1.76533E-08
Nickel	No	No	No	N/A	N/A	0.09	1.69778E-08
Selenium	No	No	No	N/A	N/A	20	8.72E-11
Zinc	No	No	No	N/A	N/A	N/A	N/A
Polycyclic Organic Matter (POM)	--	--	--	--	--	--	--
2-methylnaphthalene	No	No	No	N/A	N/A	N/A	N/A
3-methylchloranthrene (less than)	No	No	No	0.0063	3.33529E-16	N/A	N/A
7,12 Dibenz(a)anthracene (less than)	No	No	No	0.071	3.34118E-14	N/A	N/A
Anthracene (less than)	No	No	No	N/A	N/A	N/A	N/A
Benzene	No	No	No	0.0000078	9.63529E-16	30	4.11765E-12
Dichlorobenzene	No	No	No	0.000011	7.76471E-16	800	8.82353E-14
Hexane	No	No	No	N/A	N/A	700	1.51261E-10
Naphthalene	No	No	No	0.000034	N/A	3	1.19608E-11
Phenanathrene	No	No	No	N/A	N/A	N/A	N/A
Toluene	No	No	No	N/A	N/A	5000	4E-14
Acenaphthene	No	No	No	N/A	N/A	N/A	N/A
Acenaphthylene	No	No	No	N/A	N/A	N/A	N/A
Benzo(a)anthracene (less than)	No	No	No	N/A	N/A	N/A	N/A
Benzo(a)pyrene (less than)	No	No	No	0.0011	6.402E-16	N/A	N/A
Benzo(b)fluoranthene (less than)	No	No	No	0.00011	3.498E-17	N/A	N/A
Benzo(g,h,i)perylene (less than)	No	No	No	N/A	N/A	N/A	N/A
Benzo(k)fluoranthene (less than)	No	No	No	0.00011	3.124E-17	N/A	N/A
Chrysene (less than)	No	No	No	0.000011	1.188E-17	N/A	N/A
Dibenzo(a,h)anthracene (less than)	No	No	No	0.00011	2.794E-17	N/A	N/A
Fluorene	No	No	No	N/A	N/A	N/A	N/A
Fluoranthene	No	No	No	N/A	N/A	N/A	N/A
Indeno(1,2,3-cd)pyrene (less than)	No	No	No	0.00011	3.388E-17	N/A	N/A

Phenanthrene	No	No	No	N/A	N/A	N/A	N/A
Pyrene	No	No	No	N/A	N/A	N/A	N/A
	--	--	--	--	--	--	--
Dibenzofurans	No	No	No	0	0	0	0
1,2,3,4,6,7,8-Heptachlorodibenzofuran (less than)	--	--	--	--	--	--	--
1,2,3,4,7,8,9-Heptachlorodibenzofuran (less than)	--	--	--	--	--	--	--
1,2,3,4,7,8-Hexachlorodibenzofuran	--	--	--	--	--	--	--
1,2,3,6,7,8-Hexachlorodibenzofuran	--	--	--	--	--	--	--
1,2,3,7,8,9-Hexachlorodibenzofuran	--	--	--	--	--	--	--
2,3,4,6,7,8-Hexachlorodibenzofuran	--	--	--	--	--	--	--
1,2,3,7,8-Pentachlorodibenzofuran (less than)	--	--	--	--	--	--	--
2,3,4,7,8-Pentachlorodibenzofuran (less than)	--	--	--	--	--	--	--
2,3,7,8-Tetrachlorodibenzofuran	--	--	--	--	--	--	--
	--	--	--	--	--	--	--
Listed Non-POM Organic HAPs	--	--	--	--	--	--	--
Acetaldehyde	No	No	No	N/A	N/A	9	5.77778E-10
Formaldehyde	No	No	No	0.000013	1.768E-14	9.8	1.38776E-10
	--	--	--	--	--	--	--
Listed Acids	--	--	--	--	--	--	--
Hydrogen chloride (hydrochloric acid)	No	No	No	N/A	N/A	20	0.000000144
Hydrogen fluoride	No	No	No	N/A	N/A	14	1.88571E-09
	--	--	--	--	--	--	--
	--	--	--	--	--	--	--
2,3,7,8-tetrachlorodibenzo-p-dioxin	No	No	No	33	1.04808E-13	0.00004	7.94E-11
	--	--	--	--	--	--	--
1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin	No	No	No	--	--	--	--
	--	--	--	--	--	--	--
SUM of Hexachlorodibenzo-p-dioxin	No	No	No	1.3	6.0528E-14	N/A	N/A
	--	--	--	--	--	--	--
1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin	No	No	No	--	--	--	--
1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin	No	No	No	--	--	--	--
1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin	No	No	No	--	--	--	--
	--	--	--	--	--	--	--
1,2,3,7,8-Pentachlorodibenzo-p-dioxin	No	No	No	--	--	--	--
				SUM --->	1.02028E-11		2.74057E-07

IX. Taking or Damaging Implication Analysis

As required by 2-10-101 through 105, MCA, DEQ conducted a private property taking and damaging assessment and determined there are no taking or damaging implications and is located in the attached Environmental Assessment.

X. Environmental Assessment

An environmental assessment, required by the Montana Environmental Policy Act, was completed for this project. A copy is attached.



FINAL ENVIRONMENTAL ASSESSMENT

Pet Passages – Pet Passages Billings Facility

Air Quality Bureau

Air, Energy, and Mining Division

Table of Contents

Project Overview	3
Location.....	3
Compliance with the Montana Environmental Policy Act	3
Proposed Action.....	3
Purpose and Need.....	3
EVALUATION OF AFFECTED ENVIRONMENT AND IMPACT BY RESOURCE:	7
1. Geology and Soil Quality, Stability, and Moisture.....	8
2. Water Quality, Quantity, and Distribution	8
3. Air Quality.....	8
4. Vegetation Cover, Quantity, and Quality	9
5. Terrestrial, Avian, and Aquatic Life and Habitats.....	9
6. Unique, Endangered, Fragile, or Limited Environmental Resources.....	10
7. Historical and Archaeological Sites.....	11
8. Aesthetics	11
9. Demands on Environmental Resources of Land, Water, Air, or Energy	11
10. Impacts on Other Environmental Resources	12
11. Human Health and Safety.....	12
12. Industrial, Commercial, and Agricultural Activities and Production	13
13. Quantity and Distribution of Employment	13
14. Local and State Tax Base and Tax Revenues.....	13
15. Demand for Government Services	14
16. Locally Adopted Environmental Plans and Goals.....	14
17. Access to and Quality of Recreational and Wilderness Activities.....	14
18. Density and Distribution of Population and Housing	15
19. Social Structures and Mores.....	15
20. Cultural Uniqueness and Diversity	15
21. Private Property Impacts.....	16
22. Other Appropriate Social and Economic Circumstances.....	17
23. Greenhouse Gas Assessment.....	17
PROPOSED ACTION ALTERNATIVES.....	19
CONSULTATION	19
PUBLIC INVOLVEMENT	20
OTHER GOVERNMENTAL AGENCIES WITH JURISDICTION.....	20
NEED FOR FURTHER ANALYSIS AND SIGNIFICANCE OF POTENTIAL IMPACTS	20
CONCLUSIONS AND FINDINGS	20

Project Overview

COMPANY NAME:	Pet Passages
EA DATE:	June 17, 2024
SITE NAME:	Pet Passages Billings Facility (PPBF)
MAQP#:	5306-00
Application Received Date:	May 1, 2024
Additional Information Received Date:	May 20, 2024

Location

Township Section 33, Township 1 North, Range 26 East

County: Yellowstone

PROPERTY OWNERSHIP: FEDERAL STATE PRIVATE

Compliance with the Montana Environmental Policy Act

Under the Montana Environmental Policy Act (MEPA), Montana agencies are required to prepare an environmental review for state actions that may have an impact on the human environment. The proposed action is considered to be a state action that may have an impact on the human environment and, therefore, the Department of Environmental Quality (DEQ) must prepare an environmental review. This Environmental Assessment (EA) will examine the proposed action and alternatives to the proposed action and disclose potential impacts that may result from the proposed and alternative actions. DEQ will determine the need for additional environmental review based on consideration of the criteria set forth in Administrative Rules of Montana (ARM) 17.4.608. DEQ may not withhold, deny, or impose conditions on the Permit based on the information contained in this EA (§ 75-1- 201(4), MCA).

Proposed Action

PPBF proposes to install and operate one (1) natural gas fired incinerator.

Purpose and Need

Under MEPA, Montana agencies are required to prepare an environmental review for state actions that may have an impact on the human environment. The Proposed Action is considered to be a state action that may have an impact on the human environment and, therefore, DEQ must prepare an environmental review. This EA will examine the proposed action and alternatives to the proposed action and disclose potential impacts that may result from the proposed and alternative actions. DEQ will determine the need for additional environmental review based on consideration of the criteria set forth in ARM 17.4.608.

TABLE 1: SUMMARY OF ACTIVITIES PROPOSED IN APPLICATION

Table 1. Summary of Proposed Activities in Application	
General Overview	Install and operate one (1) natural gas fired animal remains incinerator.
Duration and Timing	Construction: Installation and set-up of the new equipment would be completed in less than 1 month as the unit would arrive on-site fully assembled. Operation: This unit is expected to operate 10 hours a day, 6 days a week, 52 weeks a year or 3,120 hours per calendar year for the life of the facility. Demobilization would be limited to removing and disconnecting fuel lines, and removal of the incinerator unit.
Estimated Disturbance	There would be no disturbance to existing land as the incinerator would occupy an already existing facility. The site is already paved so ground disturbance would not be expected to be necessary.
Equipment	One natural gas fired animal remains incinerator.
Location	Location: Section 33, Township 1 North, Range 26 East. See Figure 1.
Personnel on-site	Construction: Installation of the incinerator unit to include fuel lines and exhaust vents. Operation: No additional personnel are expected to be needed to operate the unit.
Location and Analysis Area	The site is currently used as a commercial building.
Air Quality	The Applicant is required to comply with the applicable local, county, state, and federal requirements pertaining to air quality.
Water Quality	This project would not affect water quality because water is not part of the daily operation of the engines.
Erosion Control and Sediment Transport	This project is on property currently in use for commercial purposes and it would not contribute to additional erosion or sediment transport. The Applicant is required to comply with all applicable local, county, state, and federal requirements pertaining to erosion control and sediment transport.
Solid Waste	This project would have no effect on solid waste in the area. The Applicant is required to comply with the applicable local, county, state, and federal requirements pertaining to solid waste.

Cultural resources	The property is already in use as commercial property and there would be no effects on cultural resources. The Applicant is required to comply with the applicable local, county, state, and federal requirements pertaining to cultural resources.
Aesthetics	The property is already in use as commercial property, and there would be minor effects on aesthetics with the installation of one (1) natural gas fired incinerator. The Applicant is required to comply with the applicable local, county, state, and federal requirements pertaining to aesthetics.
Hazardous Substances	This project does not contribute any hazardous substances to the facility. The Applicant is required to comply with the applicable local, county, state, and federal requirements pertaining to hazardous substances.
Weed Control	The Applicant is required to comply with the applicable local, county, state, and federal requirements pertaining to weed control.
Reclamation Plans	The property is already in use as commercial property and would not require reclamation at the end of the project's lifespan.

Cumulative Impact Considerations	
Past Actions	This is an existing site used for commercial purposes.
Present Actions	Install and operate one (1) natural gas fired animal remains incinerator.
Related Future Actions	No future actions are foreseen at this site.

Figure 1. Location for the incinerator.

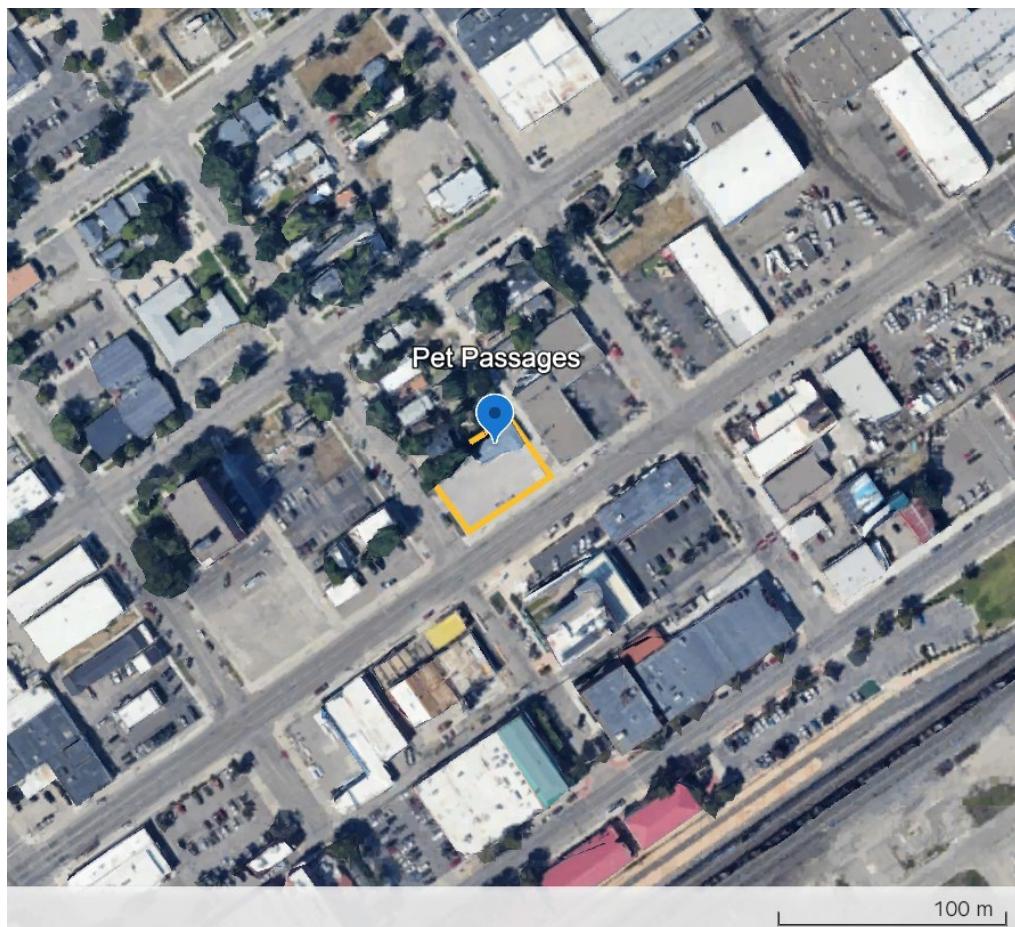
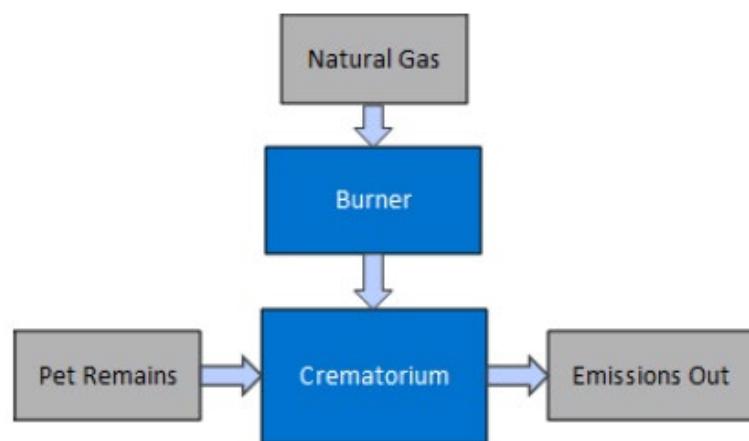


Figure 2. Process flow diagram.



EVALUATION OF AFFECTED ENVIRONMENT AND IMPACT BY RESOURCE:

The impact analysis will identify and evaluate whether the impacts are direct or secondary impacts to the physical environment and human population in the area to be affected by the proposed project. Direct impacts occur at the same time and place as the action that causes the impact. Secondary impacts are a further impact to the human environment that may be stimulated, or induced by, or otherwise result from a direct impact of the action (ARM 17.4.603(18)). Where impacts would occur, the impacts will be described.

Cumulative impacts are the collective impacts on the human environment within the borders of Montana that could result from the Proposed Action when considered in conjunction with other past and present actions related to the Proposed Action by location and generic type. Related future impacts must also be considered when these actions are under concurrent consideration by any state agency through pre-impact statement studies, separate impact statement evaluation, or permit processing procedures. The activities identified in Table 1 were analyzed as part of the cumulative impacts assessment for each resource.

The duration is quantified as follows:

- Construction Impacts (short-term): These are impacts to the environment during the construction period. When analyzing duration, please include a specific range of time.
- Operation Impacts (long-term): These are impacts to the environment during the operational period. When analyzing duration, please include a specific range of time.

The intensity of the impacts is measured using the following:

- No impact: There would be no change from current conditions.
- Negligible: An adverse or beneficial effect would occur but would be at the lowest levels of detection.
- Minor: The effect would be noticeable but would be relatively small and would not affect the function or integrity of the resource.
- Moderate: The effect would be easily identifiable and would change the function or integrity of the resource.
- Major: The effect would alter the resource

1. Geology and Soil Quality, Stability, and Moisture

The proposed project is for the installation of one (1) animal remains incinerator. The area where the proposed permit action is located in is an already developed, commercial area located within the city limits of Billings, MT.

Direct Impacts:

No impacts to topography, geology, stability, and moisture would be expected because the Billings Facility site is an already developed site.

Secondary Impacts:

No secondary impacts to topography, geology, stability, and moisture are anticipated with the proposed action.

Cumulative Impacts:

Since there are no direct and no secondary impacts, there are also no cumulative impacts anticipated from this project.

2. Water Quality, Quantity, and Distribution

The proposed project is for the installation of one (1) animal remains incinerator. The area where the proposed permit action is located in is an already developed, commercial area located within the city limits of Billings, MT.

The proposed action does not use water in any processes.

Direct Impacts:

There are no direct impacts expected to water quality, quantity, and distribution from this project.

Secondary Impacts:

There are no secondary impacts to water quality, quantity, and distribution expected from this project.

Cumulative Impacts:

There are no cumulative impacts to water quality, quantity, and distribution expected from this project.

3. Air Quality

The proposed project is for the installation of one (1) natural gas fired animal remains incinerator.

The area where the proposed permit action is located in is an already developed, commercial area located within the city limits of Billings, MT. The area where the project is proposed is located within the Billings CO Maintenance Plan area. An Emissions Inventory is located in Section IV of the MAQP Analysis.

The highest calculated pollutant for this source is 1.16 ton/yr of carbon monoxide (CO). The proposed facilities Potential to Emit based on 3,120 hr/yr can be found in Section IV of the MAQP Analysis.

Direct Impacts:

DEQ determined, based on the amount of allowable emissions, that the impacts from this permitting action will be minor. The amounts for emissions calculated from this source does not exceed the minimum permitting threshold of 25 ton/yr of any major pollutant. Because the unit is considered an incinerator per Montana Code Annotated 75-2-103(12a), an air quality permit is required. DEQ believes it will not cause or contribute to a violation of any ambient air quality standard based on the amount of potential emissions and air dispersion characteristics of the area.

Secondary Impacts:

Negligible impacts to air quality could be expected with the proposed action in the event of equipment malfunction.

Cumulative Impacts:

Cumulative impacts to air quality would be negligible based on the hours of operation, Best Available Control Technology for this project, and air dispersion characteristics of the area.

4. Vegetation Cover, Quantity, and Quality

The proposed project is for the installation of one (1) animal remains incinerator. The area where the proposed permit action is located in is an already developed, commercial area located within the city limits of Billings, MT and does not require the removal of any vegetative cover.

Direct Impacts:

There are no direct impacts expected to vegetation cover, quantity, and quality from this project.

Secondary Impacts:

No secondary impacts to vegetation are expected as a result of this project.

Cumulative Impacts:

Cumulative impacts are minor due to the size and scope of the project.

5. Terrestrial, Avian, and Aquatic Life and Habitats

The proposed project is for the installation of one (1) animal remains incinerator. The area where the proposed permit action is located in is an already developed, commercial area located within the city limits of Billings, MT.

Direct Impacts:

No impacts to terrestrial, aquatic, and avian habitats are expected with the proposed project. The area where the proposed permit action is located in is an already developed, urban area located within the city limits of Billings, MT.

Secondary Impacts:

No secondary impacts to terrestrial, avian and aquatic life and habitats would be expected.

Cumulative Impacts:

There are no cumulative impacts to terrestrial, avian and aquatic life and habitats expected from this project.

6. Unique, Endangered, Fragile, or Limited Environmental Resources

The proposed project is for the installation of one (1) animal remains incinerator. The area where the proposed permit action is located in is an already developed, commercial area located within the city limits of Billings, MT.

A survey of endangered or fragile species was conducted for the area where the proposed project would occur.

Twenty-four (24) species of concern were identified;

Bird – Lewis’s Woodpecker, Black-billed Cuckoo, White-faced Ibis, Barrow’s Goldeneye, Cassin’s Finch, Dickcissel, Long-billed Curlew, Plumbeous Vireo, and the Sage Thrasher.

Invertebrates – Monarch, Suckley Cuckoo Bumble Bee, and the Berry’s Mountain snail.

Mammals – Merriam’s Shrew, Dwarf Shrew, Long-legged Myotis, Western Spotted Skunk, Pallid Bat, Hayden’s Shrew, North American Porcupine, Easter Red Bat, and the Hoary Bat.

Reptiles – Spiny Softshell

Vascular Plants – Platte Cinquefoil and the Spotted Joepye-weed.

Additionally, the proposed project is not in core, general or connectivity sage grouse habitat, as designated by the Sage Grouse Habitat Conservation Program (Program) at: <http://sagegrouse.mt.gov>. Impacts to sage grouse would not be expected.

Direct Impacts:

Negligible impacts to unique, endangered, fragile, or limited environmental resources could be caused by the proposed action. The site is an already developed commercial site with no new construction.

The Sage Grouse Habitat Conservation Program has stated that the proposed project would not occur in core, general or connectivity sage grouse habitat. Therefore, impacts to sage grouse would not occur.

Secondary Impacts:

No secondary impacts to unique, endangered, fragile, or limited environmental resources that could be stimulated or induced by the direct impacts analyzed above would be expected.

Cumulative Impacts:

No cumulative impacts to unique, endangered, fragile, or limited environmental resources, or sage grouse would be expected.

7. Historical and Archaeological Sites

The proposed project is for the installation of one (1) animal remains incinerator. The area where the proposed permit action is located in is an already developed, commercial area located within the city limits of Billings, MT.

The State Historic Preservation Office (SHPO) was consulted on the proposed project and identified one (1) site within the Section, Township, and Range of the project. The site is listed as Type 1 Site, #24YL1866 which is a historic courthouse, historical architecture. The site is eligible for National Register Status.

Direct Impacts:

No direct impacts to historical and archaeological are expected from this project.

Secondary Impacts:

No secondary impacts to historical and archaeological sites are anticipated.

Cumulative Impacts:

No cumulative impacts to historical and archeological sites would be expected.

8. Aesthetics

The proposed project is for the installation of one (1) animal remains incinerator. The area where the proposed permit action is located in is an already developed, commercial area located within the city limits of Billings, MT.

Direct Impacts:

Minor impacts would occur with the installation of the incinerator. The main unit would not be visible to the general public because it would be installed in an already existing structure. The 12-foot vertical stack would potentially be visible to the general public, depending on where it is installed in the structure. The nearest residential home is approximately 20 feet from the existing property line and is separated from the project area by a fence and trees. Any noise created from the operation of the unit would be muffled by the existing structure.

Secondary Impacts:

No secondary impacts to aesthetics are anticipated.

Cumulative Impacts:

No cumulative impacts to aesthetics would be expected from this project.

9. Demands on Environmental Resources of Land, Water, Air, or Energy

The proposed project is for the installation of one (1) animal remains incinerator. The area where the proposed permit action is located in is an already developed, commercial area located within the city limits of Billings, MT.

Direct Impacts:

Negligible impacts to air and energy resources associated with the operational needs of the proposed equipment are anticipated. No direct impacts to land and water are expected with the proposed permitting action.

Secondary Impacts:

No secondary impacts to demands on environmental resources of land, water, air, or energy would be anticipated.

Cumulative Impacts:

Negligible cumulative impacts to demands on environmental resources of land, water, air, or energy would be expected.

10. Impacts on Other Environmental Resources

The proposed project is for the installation of one (1) animal remains incinerator. The area where the proposed permit action is located in is an already developed, commercial area located within the city limits of Billings, MT.

Direct Impacts:

No direct impacts to other environmental resources are anticipated as a result of the proposed project. Energy will be generated from the combustion of natural gas provided by local oil and gas wells.

Secondary Impacts:

No secondary impacts to other environmental resources are anticipated as a result of the proposed project.

Cumulative Impacts:

No cumulative impacts to other environmental resources would be expected.

11. Human Health and Safety

The proposed project is for the installation of one (1) animal remains incinerator. A Human Health Risk Assessment was completed for the project and is located in Section VIII of the MAQP Analysis. The proposed incinerator being installed must comply with the permit conditions included in MAQP #5306-00, which are protective of human health and safety.

Direct Impacts:

Direct impacts to human health and safety are expected to be negligible for this project. The area is considered rural with good air dispersion characteristics. MAQP #5306-00 has conditions that limit the amount of emissions from the facility.

Secondary Impacts:

Based on the Human Health Risk Assessment, no secondary impacts to human health and safety would be expected.

Cumulative Impacts:

Negligible cumulative impacts to human health and safety are expected from this project.

12. Industrial, Commercial, and Agricultural Activities and Production

The proposed project is for the installation of one (1) animal remains incinerator. The area where the proposed permit action is located in is an already developed, area located within the city limits of Billings, MT.

Direct Impacts:

No impacts to industrial, commercial, and agricultural activity and production are anticipated as a result of installation of the incinerator.

Secondary Impacts:

No secondary impacts to industrial, commercial, and agricultural activities and production would be expected.

Cumulative Impacts:

No cumulative impacts to industrial, commercial, and agricultural activities and production are expected as a result of this project.

13. Quantity and Distribution of Employment

The proposed project is for the installation of one (1) animal remains incinerator. The area where the proposed permit action is located in is an already developed, commercial area located within the city limits of Billings, MT.

Direct Impacts:

No new permanent employment would be expected with the proposed project.

Secondary Impacts:

No secondary impacts to quantity and distribution of employment are anticipated as a result this project.

Cumulative Impacts:

No cumulative impacts to the quantity and distribution of employment would be expected.

14. Local and State Tax Base and Tax Revenues

The proposed project is for the installation of one (1) animal remains incinerator. The area where the proposed permit action is located in is an already developed, commercial area located within the city limits of Billings, MT.

Direct Impacts:

No direct impacts to the tax base or revenues are anticipated as a result of this project.

Secondary Impacts:

No secondary impacts to local and state tax base and tax revenues would be expected.

Cumulative Impacts:

No cumulative impacts to local and state tax base and tax revenues would be expected.

15. Demand for Government Services

The proposed project is for the installation of one (1) animal remains incinerator. The area where the proposed permit action is located in is an already developed, commercial area located within the city limits of Billings, MT.

Direct Impacts:

Negligible direct impacts to demand for government services would be expected as a result of possible need for source testing and site inspection requirements.

Secondary Impacts:

No secondary impacts to the demand for government services are anticipated as a result of the proposed project.

Cumulative Impacts:

No cumulative impacts to the demand for government services are anticipated as a result of this project.

16. Locally Adopted Environmental Plans and Goals

The proposed project is for the installation of one (1) animal remains incinerator. The area where the proposed permit action is located in is an already developed, commercial area located within the city limits of Billings, MT.

DEQ is not aware of any additional policies and plans.

Direct Impacts:

No direct impacts to locally adopted environmental plans and goals are anticipated as a result of the proposed incinerator.

Secondary Impacts:

No secondary impacts to locally adopted environmental plans and goals are anticipated as a result of the proposed incinerator.

Cumulative Impacts:

No cumulative impacts to locally adopted environmental plans and goals would be expected.

17. Access to and Quality of Recreational and Wilderness Activities

The proposed project is for the installation of one (1) animal remains incinerator. The area where the proposed permit action is located in is an already developed, commercial area located within the city limits of Billings, MT.

No recreational areas of wilderness activities are within the project area.

Direct Impacts:

No direct impacts to wilderness or recreation areas are anticipated.

Secondary Impacts:

No secondary impacts to wilderness or recreational areas are anticipated.

Cumulative Impacts:

No cumulative impacts to access to, and quality of, recreational and wilderness activities would be expected.

18. Density and Distribution of Population and Housing

The proposed project is for the installation of one (1) animal remains incinerator. The area where the proposed permit action is located in is an already developed, commercial area located within the city limits of Billings, MT.

Direct Impacts:

It is unlikely this project would add to the population significantly. No direct impacts are anticipated.

Secondary Impacts:

No secondary impacts to density and distribution of population and housing are anticipated as a result of the proposed project.

Cumulative Impacts:

No cumulative impacts to density and distribution of population and housing are anticipated as a result of this project.

19. Social Structures and Mores

The proposed project is for the installation of one (1) animal remains incinerator. The area where the proposed permit action is located in is an already developed, commercial area located within the city limits of Billings, MT.

DEQ is not aware of any social structures and mores that would be affected by the proposed activity. Based on the information provided by the applicant, it is not anticipated that this project would disrupt traditional lifestyles or communities.

Direct Impacts:

No direct impacts to social structures and mores are anticipated as a result of the proposed project.

Secondary Impacts:

No secondary impacts to social structures and mores are anticipated as a result of the proposed project.

Cumulative Impacts:

No cumulative impacts to social structures and mores would be expected.

20. Cultural Uniqueness and Diversity

The proposed project is for the installation of one (1) animal remains incinerator. The area where the proposed permit action is located in is an already developed, commercial area located within the city limits of Billings, MT.

Based on the information provided by the Applicant, DEQ is not aware of any cultural uniqueness and diversity of the area that would be affected by the proposed activity.

Direct Impacts:

No impacts to cultural uniqueness and diversity are anticipated from this project.

Secondary Impacts:

No secondary impacts to cultural uniqueness and diversity are anticipated as a result of the proposed project.

Cumulative Impacts:

No cumulative impacts to cultural uniqueness and diversity would be expected.

21. Private Property Impacts

The proposed action would take place on privately-owned land. The analysis below in response to the Private Property Assessment Act indicates no impact. DEQ does not plan to deny the application or impose conditions that would restrict the regulated person's use of private property so as to constitute a taking. Further, if the application is complete, DEQ must take action on the permit pursuant to § 75-2-218(2), MCA. Therefore, DEQ does not have discretion to take the action in another way that would have less impact on private property—its action is bound by a statute.

YES	NO	
X		1. Does the action pertain to land or water management or environmental regulation affecting private real property or water rights?
	X	2. Does the action result in either a permanent or indefinite physical occupation of private property?
	X	3. Does the action deny a fundamental attribute of ownership? (ex.: right to exclude others, disposal of property)
	X	4. Does the action deprive the owner of all economically viable uses of the property?
	X	5. Does the action require a property owner to dedicate a portion of property or to grant an easement? [If no, go to (6)].
		5a. Is there a reasonable, specific connection between the government requirement and legitimate state interests?
		5b. Is the government requirement roughly proportional to the impact of the proposed use of the property?
	X	6. Does the action have a severe impact on the value of the property? (consider economic impact, investment-backed expectations, character of government action)
	X	7. Does the action damage the property by causing some physical disturbance with respect to the property in excess of that sustained by the public generally?
	X	7a. Is the impact of government action direct, peculiar, and significant?
	X	7b. Has government action resulted in the property becoming practically inaccessible, waterlogged or flooded?
	X	7c. Has government action lowered property values by more than 30% and necessitated the physical taking of adjacent property or property across a public way from the property in question?
	X	Takings or damaging implications? (Taking or damaging implications exist if YES is checked in response to question 1 and also to any one or more of the following questions: 2, 3, 4, 6, 7a, 7b, 7c; or if NO is checked in response to questions 5a or 5b; the shaded areas)

The proposed project would take place on private land. DEQ has determined that the permit conditions are reasonably necessary to ensure compliance with applicable requirements under the Montana Clean Air Act. Therefore, DEQ's approval of MAQP #5306-00 would not have private property-taking or damaging implications.

22. Other Appropriate Social and Economic Circumstances

Due to the nature and scope of the proposed project activities, no further direct or secondary impacts would be anticipated from this project.

23. Greenhouse Gas Assessment

The proposed project is for the installation of one (1) animal remains incinerator. The area where the proposed permit action is located is an already developed commercial area located within the city limits of Billings, MT. The analysis area for this resource is limited to the activities regulated by the issuance of MAQP #5306-00 which is the operation of one (1) animal remains incinerator.

For the purpose of this analysis, DEQ has defined greenhouse gas emissions as the following gas species: carbon dioxide (CO₂), methane (CH₄), nitrous oxide (N₂O), and many species of fluorinated compounds. The range of fluorinated compounds includes numerous chemicals which are used in many household and industrial products. Other pollutants can have some properties that also are similar to those mentioned above, but the EPA has clearly identified the species above as the primary Greenhouse Gases (GHGs). Water vapor is also technically a greenhouse gas, but its properties are controlled by the temperature and pressure within the atmosphere, and it is not considered an anthropogenic species.

Montana recently used the EPA State Inventory Tool (SIT) to develop a greenhouse gas inventory. This tool was developed by EPA to help states develop their own greenhouse gas inventories, and this relies upon data already collected by the federal government through various agencies. The inventory specifically deals with CO₂, CH₄, and N₂O and reports the total as CO₂e.

The SIT consists of eleven Excel based modules with pre-populated data that can be used as default settings or in some cases, allows states to input their own data when the state believes their own data provides a higher level of quality and accuracy.

Once each of the eleven modules is filled out, the data from each module is exported into a final "synthesis" module which summarizes all of the data into a single file. Within the synthesis file, several worksheets display the output data in a number of formats such as emissions by sector and emissions by type of greenhouse gas. The SIT data is currently updated through the year 2021, as it takes several years to validate and make new data available within revised modules.

The combustion of natural gas at the site would release GHGs primarily being CO₂, N₂O, and much smaller concentrations of incomplete combustion of fuel components including CH₄ and other volatile organic compounds (VOCs). Construction activities would be limited to delivery and installation of the unit. GHG emissions from the delivery vehicle would be minuscule and

have no impact on the total GHG emission for the project.

Additionally, there are no compressed gases, fire suppressants or refrigerants/air conditioning associated with this project which would have been considered Scope 1 emissions.

Direct Impacts

Operation of natural gas fired animal remains incinerator for the proposed project would produce exhaust fumes containing GHGs. DEQ has calculated GHG emissions using the EPA Simplified GHG Calculator version May 2023, for the purpose of totaling GHG emissions. This tool totals CO₂, N₂O, and CH₄ and reports the total as CO₂ equivalent (CO₂e) in metric tons CO₂e. If there are also fluorinated compounds associated with the project those may also be input into the GHG calculator. The calculations in this tool are widely accepted to represent reliable calculation approaches for developing a GHG inventory.

Application information indicates that between approximately 4,588,235 standard cubic feet (scf) of natural gas would be utilized per year based on one (1) incinerator operating 10 hours a day, 6 days a week, 52 weeks a year, and fuel consumed per hour (scf/hr). DEQ has calculated the emissions using the maximum value of the Applicant's estimate, one (1) incinerator using 1,470 scf/hr each and a heat value of 1020 Btu per scf.

Using the EPA's simplified GHG Emissions Calculator for sources, a maximum of 248.3 metric tons of CO₂e would be produced per year of operation.

Secondary Impacts

GHG emissions contribute to changes in atmospheric radiative forcing, resulting in climate change impacts. GHGs act to contain solar energy loss by trapping longer wave radiation emitted from the Earth's surface and act as a positive radiative forcing component (BLM 2021).

Per EPA's website "Climate Change Indicators", the lifetime of carbon dioxide cannot be represented with a single value because the gas is not destroyed over time. The gas instead moves between air, ocean, and land mediums with atmospheric carbon dioxide remaining in the atmosphere for thousands of years, due in part to the very slow process by which carbon is transferred to ocean sediments. Methane remains in the atmosphere for approximately 12 years. Nitrous oxide has the potential to remain in the atmosphere for about 109 years.

The impacts of climate change throughout the Northern Great Plains of Montana include changes in flooding and drought, rising temperatures, and the spread of invasive species (BLM 2021).

Cumulative Impacts

DEQ has determined that the use of the default data provides a reasonable representation of the GHG inventory for all of the state sectors, and an estimated annual GHG inventory by year. At present, Montana accounts for 47.77 million metric tons of CO₂e based on the EPA State Inventory Tool for the year 2021. This project may contribute up to 0.0002483 million metric tons per year of CO₂e. The estimated emission of 0.0002483 million metric tons of

CO₂e from this project would contribute 0.00055% of Montana's annual CO₂e emissions.

GHG emissions that would be emitted as a result of the proposed activities would add to GHG emissions from other sources.

PROPOSED ACTION ALTERNATIVES

No Action Alternative: In addition to the proposed action, DEQ must also consider a "no action" alternative. The "no action" alternative would deny the approval of MAQP #5306-00. The applicant would lack the authority to conduct the proposed activity. Any potential impacts that would result from the proposed action would not occur. The no action alternative forms the baseline from which the impacts of the proposed action can be measured.

If the Applicant demonstrates compliance with all applicable rules and regulations required for approval, the "no action" alternative would not be appropriate.

Other Reasonable Alternative(s):

No Action – the no action alternative would have resulted in animal remains either being buried in the earth or sent to an alternate facility in the greater Billings area. Both alternatives would result in equal to or greater emissions of GHG either by incineration using natural gas as a fuel source or methane generation from decomposition of organic matter.

Alternatives considered but dismissed from further detailed review:

Alternative Fuel Source— the use of a fuel source that does not have any CO₂e properties does not exist for this type of emitting unit. The use of alternative fuel sources such as Liquid Petroleum Gas (LGP) or more commonly known as propane to power the site would result in increased carbon emissions from the source. Propane (C₃H₈) has a higher carbon content when compared to natural gas (CH₄). Along with the increase in CO₂ from the use of propane, the additional increase of GHGs would occur through the delivery of propane to the site via delivery trucks along with the continued operation of the incinerator.

Reduction in the Project Operation – the alternative of reduction of the amount of time the incinerator could run is a possibility that would require the source to accept legally enforceable conditions to remain within an agreed upon operational limitation. This alternative was not discussed with the permittee due to the small amounts of emission generated from the use of the incinerator as well as the already limited hours of operation listed in the permit application. The probability of the incinerator operating 6 days a week, 10 hours a day, 52 weeks a year or 3,120 hours a year is low and the emissions calculated based on 3,120 hours of operation represent a conservative estimate.

CONSULTATION

DEQ engaged in internal and external efforts to identify substantive issues and/or concerns related to the proposed project. Internal scoping consisted of internal review of the environmental assessment document by DEQ staff.

External scoping efforts also included queries to the following websites/databases/personnel:

MAQP #5306-00 Application, EPA State Inventory Tool, and the EPA GHG Calculator Tool, State Historical Preservation Office (SHPO), and Montana Natural Heritage Program - Natural Resource Information System (NRIS)

PUBLIC INVOLVEMENT

The public comment period for this permit action was from 6/17/2024 through 7/17/2024. No public comments were received during the public involvement period.

OTHER GOVERNMENTAL AGENCIES WITH JURISDICTION

The proposed project would be located on private land. All applicable state and federal rules must be adhered to, which, at some level, may also include other state, or federal agency jurisdiction.

This environmental review analyzes the proposed project submitted by the Applicant. The project would be negligible and would be fully reclaimed to the permitted postmining land uses at the conclusion of the project and thus would not contribute to the long-term cumulative effects of mining in the area.

NEED FOR FURTHER ANALYSIS AND SIGNIFICANCE OF POTENTIAL IMPACTS

When determining whether the preparation of an environmental impact statement is needed, DEQ is required to consider the seven significance criteria set forth in ARM 17.4.608, which are as follows:

- The severity, duration, geographic extent, and frequency of the occurrence of the impact;
- The probability that the impact will occur if the proposed action occurs; or conversely, reasonable assurance in keeping with the potential severity of an impact that the impact will not occur;
- Growth-inducing or growth-inhibiting aspects of the impact, including the relationship or contribution of the impact to cumulative impacts – identify the parameters of the proposed action;
- The quantity and quality of each environmental resource or value that would be affected, including the uniqueness and fragility of those resources and values;
- The importance to the state and to society of each environmental resource or value that would be affected.
- Any precedent that would be set as a result of an impact of the proposed action that would commit the department to future actions with significant impacts or a decision in principle about such future actions; and
- Potential conflict with local, state, or federal laws, requirements, or formal plans.

CONCLUSIONS AND FINDINGS

DEQ finds that this action results in negligible impacts to air quality and GHG emissions in Yellowstone County, Montana. The area where the proposed permit action is located is an already developed, commercial area located within the city limits of Billings, MT.

The severity, duration, geographic extent and frequency of the occurrence of the impacts associated with the proposed air quality project are insignificant. The proposed action would not result in any new disturbances.

The Applicant is proposing to install one (1) natural gas fired incinerator at the Billings Facility as explained in MAQP #5306-00. The site would be permitted to operate the incinerator year-round.

As discussed in this EA, DEQ has not identified any significant impacts associated with the proposed actions for any environmental resource. DEQ does not believe that the proposed activities by the Applicant would have any growth-inducing or growth-inhibiting aspects, or contribution to cumulative impacts. The proposed site does not appear to contain known unique or fragile resources.

There are unique and known endangered fragile resources in the project area. No new disturbances to are expected with the proposed project.

There would be minor impacts to aesthetics as the incinerator unit vent would be visible to residents in the immediate area and any road traffic that would be passing through.

Demands on the environmental resources of land, water, air, or energy would not be insignificant.

Impacts to human health and safety would not be significant due to the conditions listed in MAQP# 5306-00.

As discussed in this EA, DEQ has not identified any significant impacts associated with the proposed activities on any environmental resource.

Issuance of a Montana Air Quality Permit to the Applicant does not set any precedent that commits DEQ to future actions with significant impacts or a decision in principle about such future actions.

If the Applicant submits another modification or amendment, DEQ is not committed to issuing those revisions. DEQ would conduct an environmental review for any subsequent permit modifications sought by the Applicant that require environmental review. DEQ would make permitting decisions based on the criteria set forth in the Clean Air Act of Montana.

Issuance of the Permit to the Applicant does not set a precedent for DEQ's review of other applications for Permits, including the level of environmental review. The level of environmental review decision is made based on case-specific consideration of the criteria set forth in ARM 17.4.608.

Finally, DEQ does not believe that the proposed air quality permitting action by the Applicant would have any growth-inducing or growth inhibiting impacts that would conflict with any local, state, or federal laws, requirements, or formal plans.

Based on a consideration of the criteria set forth in ARM 17.4.608, the proposed operation is not predicted to significantly impact the quality of the human environment. Therefore, preparation of an EA is the appropriate level of environmental review for MEPA.

PREPARATION AND APPROVAL

EA prepared by:

John Proulx

Air Quality Engineering Engineer

Environmental Assessment Reviewed by: Craig Henrikson

Approved by: Craig Henrikson

REFERENCES

- 5306-00_2024_05_01_APP – Application received from Trinity Consultants on behalf of Pet Passages on May 1, 2024 and additional information provided on May 20, 2024.
- EPA GHG Calculator Tool <https://www.epa.gov/statelocalenergy/state-inventory-and-projection-tool>
- EPA State Inventory Tool, <https://www.epa.gov/statelocalenergy/state-inventory-and-projection-tool>
- 2021 BLM Specialist Report on Annual Greenhouse Gas Emissions and Climate Trends, <https://www.blm.gov/>
- 5306-00_2024_05_31_SHPO – State Historical Preservation Office Investigation
- 5306-00_NRIS – Natural Resource Information System Endangered Species Investigation, <https://mtnhp.org>