Montana Department of
ENVIRONMENTAL QUALITY
Brian Schweitzer, Governor
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August 1, 2012

Major Kenton Hickethier
Montana Highway Patrol
812 14th Street North
Great Falls, Montana 59401

Dear Major Hickethier:

Montana Air Quality Permit #4742-00 is deemed final as of August 1, 2012, by the Department of Environmental Quality (Department). This permit is for a portable incinerator. All conditions of the Department's Decision remain the same. Enclosed is a copy of your permit with the final date indicated.

For the Department,

Charles Homer
Manager, Air Permitting, Compliance and Registration
Air Resources Management Bureau
(406) 444-5279

Ed Warner
Environmental Engineer
Air Resources Management Bureau
(406) 444-2467

CH:EW
Enclosure

Montana Department of Environmental Quality
Permitting and Compliance Division

Montana Air Quality Permit #4742-00

Montana Highway Patrol
812 14th Street North
Great Falls, Montana 59401

August 1, 2012

MONTANA AIR QUALITY PERMIT

Issued To: Montana Highway Patrol
812 14th Street North
Great Falls, MT 59401-1257

MAQP: #4742-00
Application Complete: 5/29/12
Preliminary Determination Issued: 6/13/12
Department's Decision Issued: 7/16/12
Permit Final: 8/01/12
AFS: #777-4742

A Montana Air Quality Permit (MAQP), with conditions, is hereby granted to Montana Highway Patrol (MHP), pursuant to Sections 75-2-204, 211, and 215 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

MHP proposes to operate a portable liquid propane-fired incinerator with a capacity per batch load rating of 50 kilograms (kg) and an approximate incineration time per load of 2.5 hours. This unit is used to incinerate unwanted or expired prescription drugs, illegal substances, and materials that law enforcement deems necessary to burn. A complete description of the permitted equipment is contained in the permit analysis.

B. Plant Location

MHP proposes to operate a portable incinerator, which will initially be located at 812 14th Street North, Great Falls, Montana. The legal description of this location is NW¼ SW¼ Section 6, Township 20 North, Range 6 East, in Cascade County. However, MAQP #4742-00 applies while operating at any location in Montana, except those areas having a Department of Environmental Quality (Department)-approved permitting program, areas considered tribal lands, or areas in or within 10 kilometers (km) of certain particulate matter with an aerodynamic diameter of 10 microns or less (PM_{10}) nonattainment areas. *A Missoula County air quality permit will be required for locations within Missoula County, Montana*. An addendum will be required for locations in or within 10 km of certain PM_{10} nonattainment areas.

SECTION II: Conditions and Limitations

A. Operational Requirements

1. MHP shall not incinerate any material other than unwanted or expired prescription drugs, illegal substances, and materials that law enforcement deems necessary to burn unless otherwise approved by the Department in writing (ARM 17.8.749).

2. MHP shall use only propane as fuel for the incinerator (ARM 17.8.752).

3. The incinerator shall be equipped with auxiliary fuel burners. The auxiliary fuel burners shall be used to preheat the secondary chamber of the incinerator to the minimum required operating temperature prior to igniting the primary chamber burner. The secondary chamber operating temperature of the incinerator shall be maintained above 850 degrees Celsius (˚C) (1,562 degrees Fahrenheit (˚F)) with no single reading less than 812 ˚C (1,462 ˚F). The operating temperatures shall be maintained during operation and for one-half hour after waste feed has stopped (ARM 17.8.752).

4. MHP shall develop incinerator operation procedures for the incinerator, print those procedures in an incinerator operation procedures manual, and require all personnel who operate the unit to familiarize themselves with the operating procedures. The operating procedures manual shall be readily available to all personnel who operate the unit. A copy of this manual shall be supplied to the Department upon request (ARM 17.8.752).

5. MHP shall operate the incinerator for no more than 8 hours per day of burn time. This daily limit on hours applies only to the amount of time that materials are being actively incinerated with the primary burner on and does not include any time that the fans remain in operation after the burn time is completed (ARM 17.8.749).

B. Emission Limitations

MHP shall not cause or authorize to be discharged into the atmosphere from the incinerator:

1. Visible emissions that exhibit an opacity of 10% or greater averaged over 6 consecutive minutes (ARM 17.8.752); and

2. Any particulate emissions in excess of 0.10 grains per dry standard cubic foot (gr/dscf) corrected to 12% carbon dioxide (CO_2) (ARM 17.8.752).

C. 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. The Department may require further testing (ARM 17.8.105).

D. Monitoring Requirements

MHP shall install, calibrate, maintain, and operate continuous monitoring and recording equipment on the incinerator to measure the secondary chamber exit gas temperature. MHP shall also record the daily quantity of material incinerated and the daily hours of operation of the incinerator (ARM 17.8.749).

E. Operational Reporting Requirements

1. If this incinerator is moved to another location, an Intent to Transfer form must be sent to the Department and a Public Notice Form for Change of Location must be published in a newspaper of general circulation in the area to which the transfer is to be made, at least 15 days prior to the move. The proof of publication (affidavit) of the Public Notice Form for Change of Location must be submitted to the Department prior to the move. These forms are available from the Department (ARM 17.8.749 and ARM 17.8.765).

2. MHP shall supply the Department with annual production information for all emission points, as required by the Department 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 Department by the date required in the emission inventory request. Information shall be in the units required by the Department. 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).

3. MHP shall notify the Department 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 Department, 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).

4. MHP shall maintain on-site records showing daily hours of burn time for the last 12 months. Burn time does not include any time that the fans remain in operation after the burn time is completed. The records compiled in accordance with this permit shall be maintained by MHP as a permanent record for at least 5 years following the date of recording, must be available with the incinerator for inspection by the Department, and must be submitted to the Department upon request (ARM 17.8.749).

5. All records compiled in accordance with this permit must be maintained by MHP as a permanent business record for at least 5 years following the date of the measurement, must be available at the plant site for inspection by the Department, and must be submitted to the Department upon request (ARM 17.8.749).

F. Notification

MHP shall provide the Department with written notification of the actual start-up date of the incinerator within 15 days after the actual start-up date (ARM 17.8.749).

SECTION III: General Conditions

A. Inspection – MHP shall allow the Department'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 (Continuous Emission Monitoring Systems (CEMS), 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 MHP fails to appeal as indicated below.

C. Compliance with Statutes and Regulations – Nothing in this permit shall be construed as relieving MHP 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 Department's decision may request, within 15 days after the Department renders its decision, upon affidavit setting forth the grounds therefore, 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 Department'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 Department'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 Department's decision on the application is final 16 days after the Department'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 Department at the location of the source.

G. Permit Fee – Pursuant to Section 75-2-220, MCA, failure to pay the annual operation fee by MHP 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).

I. The Department may modify the conditions of this permit based on local conditions of any future site. These factors may include, but are not limited to, local terrain, meteorological conditions, proximity to residences, etc.

J. MHP shall comply with the conditions contained in this permit while operating in any location in Montana, except within those areas that have a Department-approved permitting program or areas considered tribal lands.

Montana Air Quality Permit (MAQP) Analysis
Montana Highway Patrol
MAQP #4742-00

I. Introduction/Process Description

Montana Highway Patrol (MHP) proposes to operate a portable liquid propane-fired Inciner8 Model M-60 incinerator with capacity per batch load rating of 50 kilograms (kg) and an approximate incineration time per load of 2.5 hours. This unit is used to incinerate unwanted and expired prescription drugs, illegal substances, and materials that law enforcement deems necessary to burn.

The initial location of this incinerator is at 812 14th Street North, Great Falls, Montana. The legal description of this location is NW¼ SW¼ Section 6, Township 20 North, Range 6 East, in Cascade County. However, MAQP #4742-00 applies while operating at any location in Montana, except those areas having a Department of Environmental Quality (Department)-approved permitting program, areas considered tribal lands, or areas in or within 10 kilometers (km) of certain particulate matter with an aerodynamic diameter of 10 microns or less (PM_{10}) nonattainment areas. *A Missoula County air quality permit will be required for locations within Missoula County, Montana*. An addendum will be required for locations in or within 10 km of certain PM_{10} nonattainment areas.

A. Permitted Equipment

MHP proposes to operate a portable liquid propane-fired incinerator with a maximum rated incineration capacity to not exceed 50 kg per batch load. The total amount of incinerated materials shall not exceed 64.37 tons per year. The combined maximum rated burner heat input capacity shall not exceed 0.46 million British thermal units per hour (MMBtu/hr).

B. Source Description

The incinerator is fired on liquid propane and is capable of incinerating up to 50 kg of material per load with an approximate burn time of 2.5 hours. The incinerator utilizes a secondary combustion chamber with an auxiliary afterburner to facilitate complete combustion of volatile emissions. The secondary chamber shall maintain a temperature of 850 degrees Celsius (˚C) (1,562 degrees Fahrenheit (˚F)), with no single reading less than 812 ˚C (1,462 ˚F) and is managed by a combined temperature and timer controller that controls the exit temperature of the incinerator and the burn time. After the secondary chamber has been heated sufficiently, the main burner may be ignited and the incineration process can begin.

Initial and supplementary combustion is provided by two burners, one in the primary chamber and one in the secondary chamber, with a maximum rated heat input design capacity of 60,000 kilocalories per hour (0.23 MMBtu/hr) each for a total heat input capacity of 0.46 MMBtu/hr. The exhaust flow rate has been estimated based on the rated residency time of exhaust gas in the secondary chamber and the assumed volume of the secondary chamber. The M-60 incinerator has a 0.5-second residency time rating for the secondary chamber and the volume of the secondary chamber has been assumed to be the same as the primary chamber which is 0.13 cubic meters. This results in a predicted exhaust flow rating of 550 cubic feet per minute.

For these types of incinerators, waste is typically manually fed into the primary combustion chamber. The charging door is then closed and the burner for the secondary chamber is ignited to bring the secondary chamber to the target temperature. When the target temperature is reached, the primary chamber burner is ignited. The waste is dried, ignited, and combusted by heat provided by the primary chamber burner, as well as by radiant heat from the chamber

walls. Moisture and volatile components in the waste are vaporized, and pass (along with combustion gases) out of the primary chamber and into the secondary chamber. The secondary chamber burner maintains adequate temperatures for combustion of volatile gases released during the primary combustion. Gases exiting the secondary chamber are directed to the incinerator stack. When the waste is consumed, the primary burner can be shut off. The secondary burner continues to fire for a set amount of time before it is shut off to ensure complete combustion of the volatile gases. Once the chamber cools, ash is manually removed from the primary chamber floor and a new charge of waste can be added.

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 Department. Upon request, the Department 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 Department, 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 Department.

3. ARM 17.8.106 Source Testing Protocol. The requirements of this rule apply to any emission source testing conducted by the Department, 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).

   MHP 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 Department upon request.

4. ARM 17.8.110 Malfunctions. (2) The Department 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 PM_{10}
11. ARM 17.8.230 Fluoride in Forage

MHP must maintain compliance with the applicable ambient air quality standards. As part of the risk assessment required for this project, the Department conducted SCREEN3 modeling, an Environmental Protection Agency (EPA)-approved air dispersion model. The screening analysis demonstrated that the proposed project would comply with all applicable ambient air quality standards and demonstrated negligible risk to human health as required for permit issuance.

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.

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.

   While MHP is required to comply with the Emission Limitations specified in Section II.B of MAQP #4742-00, this particular rule does not apply to the incinerator because MHP has applied for and will operate under an MAQP in accordance with ARM 17.8.770 and MCA 75-2-215 for this unit.

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 17.8.340 Standard of Performance for New Stationary Sources and Emission Guidelines for Existing Sources. This rule incorporates, by reference, 40 Code of Federal Regulations (CFR) Part 60, Standards of Performance for New Stationary Sources (NSPS). This unit potentially meets the definition of an affected source for some NSPS; however, it is exempt from regulation under these regulations for the reasons mentioned below.

a. 40 CFR 60, Subpart A – General Provisions apply to all equipment or facilities subject to an NSPS Subpart as listed below. This subpart does not apply to this facility because it is not subject to NSPS Subparts as indicated below.

b. 40 CFR 60, Subpart Ec – Standards of Performance for Hospital/Medical/Infectious Waste Incinerators for Which Construction is Commenced After June 20, 1996. Medical/infectious waste, as defined in this regulation, broadly encompasses "…any waste generated in the diagnosis, treatment, or immunization of human beings or animals…" Prescription drugs are part of the treatment of human beings or animals; however, they are not a generated waste product but rather a component of the treatment itself. MHP collects unwanted or expired prescription drugs that are voluntarily provided by the public. Therefore, unwanted and expired prescription drugs collected by MHP are not medical waste in this application and their incineration is not subject to 40 CFR 60, Subpart Ec.

c. 40 CFR 60, Subpart EEEE – Standards of Performance for Other Solid Waste Incineration Units for Which Construction is Commenced After December 9, 2004, or for Which Modification or Reconstruction is Commenced on or After June 16, 2006. This regulation is applicable to the proposed incinerator because it is an institutional waste incineration unit as defined in the regulation. Other solid waste incineration (OSWI) units are very small municipal waste combustion units and institutional waste incineration units. However, this regulation has an exemption for incineration units that are owned or operated by a government agency to destroy illegal or prohibited goods. MHP is a government agency and this incinerator would be used to destroy illegal drugs. Prescription drugs are considered to be illegal drugs for anyone not prescribed the drug. Therefore, this unit is exempted from the requirements of 40 CFR 60, Subpart EEEE.

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 Department. MHP 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 Department by each source of air contaminants holding an air quality permit (excluding an open burning permit) issued by the Department. 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 Department 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. MHP does not have a PTE greater than 25 tons per year of any pollutant; however, in accordance with the 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 MHP 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. MHP 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. MHP submitted an affidavit of publication of public notice for the April 20, 2012, issue of *The Great Falls Tribune*, a newspaper of general circulation in the Town of Great Falls in Cascade 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 Department 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 Department 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 MHP 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 Department'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 Department.

15. ARM 17.8.770 Additional Requirements for Incinerators. This rule specifies the additional information that must be submitted to the Department for incineration facilities subject to 75-2-215, MCA.

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.

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 Department may establish by rule; or

c. PTE > 70 tons/year of particulate matter with an aerodynamic diameter of 10 microns or less (PM_{10}) in a serious PM_{10} 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 #4742-00 for MHP, 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 PM_{10} nonattainment area.

d. This facility is not subject to any current NSPS. 40 CFR 60, Subpart EEEE – Standards of Performance for Other Solid Waste Incineration Units for Which Construction is Commenced After December 9, 2004, or for Which Modification or Reconstruction is Commenced on or After June 16, 2006 is applicable; however, this unit meets the exemption criteria contained within the subpart and is therefore not subject to its regulations.

e. This facility is not subject to any current National Emission Standards for Hazardous Air Pollutants (NESHAP) standards.

f. This source is not a Title IV affected source.

g. This source is a solid waste combustion unit as defined in FCAA section 129(g). Solid waste combustion units that are not specifically exempted within FCAA section 129 are required to obtain a Title V Operating Permit due to having an applicable NSPS; however, this unit meets the exemption criteria contained in the applicable standard 40 CFR 60, Subpart EEEE – Standards of Performance for Other Solid Waste Incineration Units for Which Construction is Commenced After December 9, 2004, or for Which Modification or Reconstruction is Commenced on or After June 16, 2006. Therefore, this unit does not meet the criteria for requiring a Title V Operating Permit under FCAA section 129 because it is not subject to solid waste incineration regulations.

h. This source is not an EPA designated Title V source.

Based on these facts, the Department determined that MHP will be a minor source of emissions as defined under the Title V operating permit program and does not require a Title V Operating Permit.

H. MCA 75-2-103, Definitions provides, 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 solid waste incinerators; therefore, MHP must obtain an air quality permit.

2. MCA 75-2-215 requires the applicant to provide, to the Department's satisfaction, a characterization and estimate of emissions and ambient concentrations of air pollutants, including hazardous air pollutants, from the incineration of solid waste. The information in the initial permit application fulfilled this requirement.

3. MCA 75-2-215 requires that the Department reach a determination that the projected emissions and ambient concentrations constitute a negligible risk to public health, safety, and welfare. The Department 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, the Department determined that MHP complies with this requirement.

4. MCA 75-2-215 requires the application of pollution control equipment or procedures that meet or exceed BACT. The Department determined that the operating the proposed incinerator (incinerator) according to the manufacturer-recommended operation procedures constitutes BACT.

III. BACT Determination

A BACT determination is required for each new or modified source. MHP 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. In addition, MCA 75-2-215 requires a BACT determination for all pollutants resulting from the incinerator operations, not only criteria pollutants.

MHP proposes to control the emissions from the incinerator with a secondary chamber designed specifically to reduce the amount of pollutants, including HAPs, emitted from the incinerator. Previous research conducted by the Department indicates incinerators 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. With the estimated particulate matter emissions being less than 0.2 ton per year (TPY), 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 its MAQP 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 is. Therefore, the Department determined that proper operation of the controlled air incinerator with auxiliary fuel burners for the primary and secondary combustion chambers, and compliance with the operational conditions of MAQP #4742-00, constitutes BACT in this case.

BACT for products of combustion/incineration (carbon monoxide [CO], oxides of nitrogen [NO_x], volatile organic compounds [VOC], and sulfur dioxide [SO_2]) and HAPs resulting from incinerator operations is good combustion, including the requirement that the secondary chamber must be maintained at an operating temperature of 850 ˚C (1562 ˚F) with no single reading less than 812 ˚C (1462 ˚F). 850 ˚C is the minimum operating temperature of the incinerator based on the manufacturer's operator and installation manual. The operating procedures and minimum operating temperature requirement contained in MAQP #4742-00 will ensure good combustion and constitutes BACT for this source.

Propane combustion inherently results in low emissions of air pollutants due to characteristics of the fuel fired. Potential $PM_{10}/PM_{2.5}$, NO_x, CO, VOC, and SO_2 emissions from the combustion of propane to operate the incinerator are 0.02 TPY, 0.29 TPY, 0.16 TPY, 0.02 TPY, and 0.03 TPY, respectively. Because potential emissions of all regulated pollutants resulting from propane combustion are low, incorporation of available pollutant-specific control technologies would result in high cost-effective (cost per ton removed) values thereby making pollutant-specific add-on controls for PM_{10}, $PM_{2.5}$, NO_x, CO, VOC, and SO_2 economically infeasible in this case. Therefore, the Department determined that combustion of propane only and proper operation and maintenance of the incinerator with no additional control constitutes BACT for all regulated pollutants resulting from propane combustion.

MHP shall develop incinerator operation procedures, print those procedures in an incinerator operation procedures manual, and require all personnel who operate the unit to familiarize themselves with the operating procedures. The operating procedures manual shall be readily available to all personnel who operate the unit.

The control options selected have controls and control costs comparable to other recently permitted similar sources and are capable of achieving the appropriate emission standards.

IV. Emission Inventory

	ton/yr						
Source	**PM**	**PM_{10}**	**$PM_{2.5}$**	**NO_x**	**VOC**	**CO**	**SO_2**
Incineration	0.15	0.10	0.07	0.11	0.01	0.09	0.07
Fuel Gas Combustion	0.02	0.02	0.02	0.29	0.02	0.16	0.03
Total	**0.47**	**0.31**	**0.21**	**0.63**	**0.03**	**0.45**	**0.24**

HAP Emission Inventory

Hazardous Air Pollutant	**tons/yr**
Lead	2.34E-03
HCl	1.08E+00
Total PCBs (polychlorinated biphenyls)	4.48E-06
Antimony	4.12E-04
Arsenic	7.79E-06
Beryllium	2.01E-07
Cadmium	1.76E-04
Chromium	2.49E-05
Manganese	5.46E-05
Mercury	3.44E-03
Nickel	1.90E-05
Hydrogen Fluoride	1.44E-02
Chlorine	3.38E-03
2,3,7,8-Tetrachloorodibenzo-p-dioxin	5.27E-09

Hazardous Air Pollutant	tons/yr
Total CDF (chlorinated dibenzofurans)	6.89E-06
Total	**1.09E+00**

Propane-Fired External Combustion Emissions

Conversions and Assumptions
1 Btu = 262 cal (unit conversion)
1 kcal = 1000 cal (unit conversion)
1 MMBtu = 1,000,000 Btu (unit conversion)
Propane heat content = 91.5 MMBtu/10^3 gal (AP-42, Table 1.5-1, footnote a, 07/08)
Propane heating value = 2,522 Btu/ft^3

Maximum Process Rate = 60,000 kcal/hr (Inciner8 AZUR 60 MC manual, per burner)
Maximum Process Rate = 0.23 MMBtu/hr (rate conversion, per burner)
Maximum Process Rate = 0.0025 10^3 gal/hr (rate conversion, per burner)
Maximum Process Rate = 0.0001 MMscf/hr (rate conversion, per burner)
Number of burners = 2 burners (primary and secondary burner)
Total Max Process Rate = (0.0025 10^3 gal/hr per burner) * (2 burners) = 0.0050 10^3 gal/hr
Maximum Hours of Operation = 8,760 hrs/yr

Filterable PM Emissions:
Emission Factor = 0.2 lb/10^3 gal (AP 42, Table 1.5-1, assume all PM<2.5um, 7/08)
Calculation: (0.0050 10^3 gal/hr) * (8760 hrs/yr) * (0.2 lb/10^3 gal) * (ton/2000 lb) = 0.0044 ton/yr

Filterable PM_{10} Emissions:
Emission Factor = 0.2 lb/10^3 gal (AP 42, Table 1.5-1, assume all PM<2.5um, 7/08)
Calculation: (0.0050 10^3 gal/hr) * (8760 hrs/yr) * (0.2 lb/10^3 gal) * (ton/2000 lb) = 0.00438 ton/yr

Filterable $PM_{2.5}$ Emissions:
Emission Factor = 0.2 lb/10^3 gal (AP 42, Table 1.5-1, assume all PM<2.5um, 7/08)
Calculation: (0.0050 10^3 gal/hr) * (8760 hrs/yr) * (0.2 lb/10^3 gal) * (ton/2000 lb) = 0.00438 ton/yr

Condensable $PM_{2.5}$ Emissions:
Emission Factor = 0.5 lb/10^3 gal (AP 42, Table 1.5-1, 7/08)
Calculation: (0.0050 10^3 gal/hr) * (8760 hrs/yr) * (0.5 lb/10^3 gal) * (ton/2000 lb) = 0.01096 ton/yr

CO Emissions:
Emission Factor = 7.5 lb/10^3 gal (AP 42, Table 1.5-1, 7/08)
Calculation: (0.0050 10^3 gal/hr) * (8760 hrs/yr) * (7.5 lb/10^3 gal) * (ton/2000 lb) = 0.16443 ton/yr

NO_x Emissions:
Emission Factor = 13 lb/10^3 gal (AP 42, Table 1.5-1, 7/08)
Calculation: (0.0050 10^3 gal/hr) * (8760 hrs/yr) * (13 lb/10^3 gal) * (ton/2000 lb) = 0.28502 ton/yr

SO_2 Emissions:
Emission Factor = 0.10S lb/10^3 gal (AP 42, Table 1.5-1, S = Sulfur content of fuel in gr/100 ft3, 07/08)
S = 15 gr/100 ft3 (Assumed for commercial propane)
Emission Factor = 1.5 lb/10^3 gal
Calculation: (0.0050 10^3 gal/hr) * (8760 hrs/yr) * (1.5 lb/10^3 gal) * (ton/2000 lb) = 0.03289 ton/yr

VOC Emissions:
Emission Factor = 0.8 lb/10^3 gal (AP 42, Table 1.5-1, 07/08, VOC = TOC - CH_4)
Calculation: (0.0050 10^3 gal/hr) * (8760 hrs/yr) * (0.8 lb/10^3 gal) * (ton/2000 lb) = 0.01754 ton/yr

Incineration Emissions

50 kg in 2.5 hours (50 kg = 110 lbs). Limited to 8 hours/day, 365 days per year.

$$\left(50\frac{kg}{batch}\right) \div \left(2.5\frac{hrs}{batch}\right) \times \left(8\frac{hrs}{day}\right) \times \left(365\frac{days}{yr}\right) = 58{,}400\frac{kg}{yr}$$

$$\left(58{,}400\frac{kg}{yr}\right) \times \left(1.10 \times 10^{-3}\frac{ton}{kg}\right) = 64.37\frac{ton}{yr}$$

Maximum Capacity: 64.37 tons/yr

PM Emissions

Emission Factor: 4.67 lbs/ton (AP-42 Table 2.3-2, 07/93)
Calculations: 4.67 lbs/ton * 64.37 tons/yr * 0.0005 tons/lb = 0.15 tons/yr

PM_{10} Emissions

Emission Factor: 3.04 lbs/ton (AP-42 Table 2.3-15, PM10=65%*PM, 07/93)
Calculations: 3.0355 lbs/ton * 64.37 tons/yr * 0.0005 tons/lb = 0.10 tons/yr

$PM_{2.5}$ Emissions

Emission Factor: 2.022 lbs/ton (AP-42 Table 2.3-15, PM2.5=43.3%*PM, 07/93)
Calculations: 2.02211 lbs/ton * 64.37 tons/yr * 0.0005 tons/lb = 0.07 tons/yr

NO_x Emissions

Emission Factor: 3.56 lbs/ton (AP-42 Table 2.3-1, 07/93)
Calculations: 3.56 lbs/ton * 64.37 tons/yr * 0.0005 tons/lb = 0.11 tons/yr

VOC Emissions

Emission Factor: 0.299 lbs/ton (AP-42, Table 2.3-2, 7/93)
Calculations: 0.299 lbs/ton * 64.37 tons/yr * 0.0005 tons/lb = 0. 01 tons/yr

CO Emissions

Emission Factor: 2.95 lbs/ton (AP-42 Table 2.3-1, 07/93)
Calculations: 2.95 lbs/ton * 64.37 tons/yr * 0.0005 tons/lb = 0.09 tons/yr

SO_2 Emissions

Emission Factor: 2.17 lbs/ton (AP-42 Table 2.3-1, 07/93)
Calculations: 2.17 lbs/ton * 64.37 tons/yr * 0.0005 tons/lb = 0.07 tons/yr

Lead

Emission Factor: 7.28E-02 lbs/ton (AP-42, Table 2.3-2, 7/93)
Calculations: 0.0728 lbs/ton * 64.37 tons/yr * 0.0005 tons/lb = 2.34E-03 tons/yr

HCl

Emission Factor: 3.35E+01 lbs/ton (AP-42, Table 2.3-3, 7/93)
Calculations: 33.5 lbs/ton * 64.37 tons/yr * 0.0005 tons/lb = 1.08E+00 tons/yr

Total PCBs (polychlorinated biphenyls)

Emission Factor:	4.65E-05	lbs/ton	(AP-42, Table 2.3-3, 7/93)	
Calculations:	0.0000465 lbs/ton * 64.37 tons/yr * 0.0005 tons/lb =		1.50E-06	tons/yr

Aluminum

Emission Factor:	4.65E-05	lbs/ton	(AP-42, Table 2.3-4, 7/93)	
Calculations:	0.0000465 lbs/ton * 64.37 tons/yr * 0.0005 tons/lb =		1.50E-06	tons/yr

Antimony

Emission Factor:	1.28E-02	lbs/ton	(AP-42, Table 2.3-4, 7/93)	
Calculations:	0.0128 lbs/ton * 64.37 tons/yr * 0.0005 tons/lb =		4.12E-04	tons/yr

Arsenic

Emission Factor:	2.42E-04	lbs/ton	(AP-42, Table 2.3-4, 7/93)	
Calculations:	0.000242 lbs/ton * 64.37 tons/yr * 0.0005 tons/lb =		7.79E-06	tons/yr

Barium

Emission Factor:	3.24E-03	lbs/ton	(AP-42, Table 2.3-5, 7/93)	
Calculations:	0.00324 lbs/ton * 64.37 tons/yr * 0.0005 tons/lb =		1.04E-04	tons/yr

Beryllium

Emission Factor:	6.25E-06	lbs/ton	(AP-42, Table 2.3-5, 7/93)	
Calculations:	0.00000625 lbs/ton * 64.37 tons/yr * 0.0005 tons/lb =		2.01E-07	tons/yr

Cadmium

Emission Factor:	5.48E-03	lbs/ton	(AP-42, Table 2.3-5, 7/93)	
Calculations:	0.00548 lbs/ton * 64.37 tons/yr * 0.0005 tons/lb =		1.76E-04	tons/yr

Chromium

Emission Factor:	7.75E-04	lbs/ton	(AP-42, Table 2.3-6, 7/93)	
Calculations:	0.000775 lbs/ton * 64.37 tons/yr * 0.0005 tons/lb =		2.49E-05	tons/yr

Copper

Emission Factor:	1.25E-02	lbs/ton	(AP-42, Table 2.3-6, 7/93)	
Calculations:	0.0125 lbs/ton * 64.37 tons/yr * 0.0005 tons/lb =		4.02E-04	tons/yr

Iron

Emission Factor:	1.44E-02	lbs/ton	(AP-42, Table 2.3-6, 7/93)	
Calculations:	0.0144 lbs/ton * 64.37 tons/yr * 0.0005 tons/lb =		4.63E-04	tons/yr

Manganese

Emission Factor:	5.67E-04	lbs/ton	(AP-42, Table 2.3-7, 7/93)	
Calculations:	0.000567 lbs/ton * 64.37 tons/yr * 0.0005 tons/lb =		1.83E-05	tons/yr

Mercury

Emission Factor:	1.07E-01	lbs/ton	(AP-42, Table 2.3-7, 7/93)	
Calculations:	0.107 lbs/ton * 64.37 tons/yr * 0.0005 tons/lb =		3.44E-03	tons/yr

Nickel

Emission Factor:	5.90E-04	lbs/ton	(AP-42, Table 2.3-7, 7/93)	
Calculations:	0.00059 lbs/ton * 64.37 tons/yr * 0.0005 tons/lb =		1.90E-05	tons/yr

Silver
Emission Factor: 2.26E-04 lbs/ton (AP-42, Table 2.3-8, 7/93)
Calculations: 0.000226 lbs/ton * 64.37 tons/yr * 0.0005 tons/lb = 7.27E-06 tons/yr

Thallium
Emission Factor: 1.10E-03 lbs/ton (AP-42, Table 2.3-8, 7/93)
Calculations: 0.0011 lbs/ton * 64.37 tons/yr * 0.0005 tons/lb = 3.54E-05 tons/yr

HBr
Emission Factor: 4.33E-02 lbs/ton (AP-42, Table 2.3-9, 7/93)
Calculations: 0.0433 lbs/ton * 64.37 tons/yr * 0.0005 tons/lb = 1.39E-03 tons/yr

Hydrogen Fluoride
Emission Factor: 1.49E-01 lbs/ton (AP-42, Table 2.3-10, 7/93)
Calculations: 0.149 lbs/ton * 64.37 tons/yr * 0.0005 tons/lb = 4.80E-03 tons/yr

Chlorine
Emission Factor: 1.05E-01 lbs/ton (AP-42, Table 2.3-10, 7/93)
Calculations: 0.105 lbs/ton * 64.37 tons/yr * 0.0005 tons/lb = 3.38E-03 tons/yr

2,3,7,8-Tetrachlorodibenzo-p-dioxin
Emission Factor: 5.47E-08 lbs/ton (AP-42, Table 2.3-11, 7/93)
Calculations: 0.0000000547 lbs/ton * 64.37 tons/yr * 0.0005 tons/lb = 1.76E-09 tons/yr

Total CDF (chlorinated dibenzofurans)
Emission Factor: 7.15E-05 lbs/ton (AP-42, Table 2.3-13, 7/93)
Calculations: 0.0000715 lbs/ton * 64.37 tons/yr * 0.0005 tons/lb = 2.30E-06 tons/yr

V. Existing Air Quality

The initial location of the portable incinerator is at MHP offices located at 812 14th Street North, Great Falls, Cascade County, Montana. The Federal Register (September 9, 1980, 45 FR 59315) designated a corridor along 10th Avenue South as nonattainment for CO based upon air quality data gathered at the intersection of 10th Avenue South and 9th Street. The 1990 Clean Air Act Amendments listed Great Falls as an unclassified nonattainment area for CO. This was based on the 1988 and 1989 data in which no violations of either the one-hour or eight-hour standards were recorded.

Montana previously submitted to EPA a CO control strategy for Great Falls that relied upon significant emission reductions at the Montana Refining Company refinery (formerly Phillips Petroleum and Simmons Refinery) and federal automobile emission standards. On May 9, 2002, Great Falls was redesignated to attainment for CO under a Limited Maintenance Plan.

The air quality classification of the project area is Unclassifiable/Attainment for all air quality criteria pollutants (40 CFR 81.327).

MAQP #4742-00 will cover the incinerator while operating at any location within Montana, excluding those counties that have a Department-approved permitting program, areas considered tribal lands, or areas in or within 10 km of certain PM_{10} nonattainment areas. The screening analysis performed during the MAQP process demonstrated that the facility complies with all applicable ambient air quality standards and poses a negligible risk to human health as required for permit issuance. Additionally, MAQP #4742-00 contains operating and monitoring requirements to ensure that proper operation of the facility would not result in air emissions that violate any ambient air quality standards.

VI. Air Quality Impacts

Knowing that the incinerator will periodically incinerate pharmaceuticals that would be characterized as medical waste, and that this incinerator is marketed as a small medical waste incinerator, the Department used emission factors for controlled medical waste incinerators from AP-42 to represent potential worse-case emissions. As discussed in ARM 17.8.770(1)(f), these potential emissions may reflect enforceable limits on the hours of operation for the incinerator. MHP has agreed to limit the incineration time to no more than 8 hours per day; therefore, the maximum amount of material that can be incinerated in a year is:

$$\left(50\,\frac{kg}{batch}\right) \div \left(2.5\,\frac{hrs}{batch}\right) \times \left(8\,\frac{hrs}{day}\right) \times \left(365\,\frac{days}{yr}\right) = 58{,}400\,\frac{kg}{yr}$$

Emission factors for calculating the potential HAP emissions are in units of pounds of HAP per ton of incinerated material (lbs/ton). Therefore:

$$\left(58{,}400\,\frac{kg}{yr}\right) \times \left(1.10 \times 10^{-3}\,\frac{ton}{kg}\right) = 64.37\,\frac{ton}{yr}$$

The Department conducted SCREEN3 Modeling, an EPA-approved screening model, using the indicated inputs obtained from the permit application and a HAP emission rate of 3.14E-02 gram per second (g/s), which is the sum of all the HAP emissions from the proposed incinerator. This HAP emission rate is based on incinerating 64.37 tons per year of material. The Department used this HAP emission rate in the SCREEN3 model to determine a maximum 1-hour impact from the combined HAPs of 45.3 micrograms per cubic meter ($\mu g/m^3$). This maximum 1-hour concentration was converted to an annual maximum concentration based on Department guidelines for risk assessments. The annual maximum concentrations from each individual HAP were then calculated by multiplying the maximum combined impact by the percentage of each individual HAP making up the total of the HAP emissions.

As shown by the Health Risk Assessment of the following Section VII, the Department determined that there is a negligible human health risk associated with the proposed project. With consideration of the modeling accomplished for the Health Risk Assessment, and the small potential to emit of criteria pollutants, the Department determined that the impacts from this permitting action will be minor. The Department believes it will not cause or contribute to a violation of any ambient air quality standard.

VII. Health Risk Assessment

A health risk assessment was conducted to determine if the proposed incinerator 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, and welfare and the environment.

Pursuant to ARM 17.8.770(1)(c), pollutants may be excluded from the human health risk assessment if the Department 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 may be considered) are less than the levels specified in Table 1 or Table 2 of ARM 17.8.770. Ambient air impacts were modeled using SCREEN3 software; an EPA approved ambient air modeling software used for conservative

modeling, for the hazardous air pollutants identified in the potential to emit calculations of Section IV. 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 was the only necessary pathway to consider. As discussed in Section VI. Air Quality Impacts, the annual maximum concentration for the combined HAPs emissions was 3.62 ug/m^3. When the combined HAP concentration was speciated into individual HAP components, four of the HAPs exceeded the levels specified in Table 1 or Table 2 of ARM 17.8.770. A summary of the speciated HAP concentrations is shown below:

Incinerator HAPs Emissions Modeling

ANNUAL MAXIMUM CONCENTRATION: (45.26 ug/m^3) * (0.08) = 3.62 ug/m^3

Speciated HAP Concentrations							
	Annual Maximum	%	Speciated HAP	SubCh. 7 de minimis levels			
HAP	Concentration **X**	of Total =	Concentration	Cancer annual	Non-cancer chronic	Non-cancer acute	Can exclude ?
Lead	3.6208 ug/m^3	0.2144%	7.76E-03 ug/m^3		1.50E-02		YES
HCl	3.6208 ug/m^3	98.6618 %	3.57E+00 ug/m^3		2.00E-01	3.00E+01	NO
Total PCBs (polychlorinated biphenyls)	3.6208 ug/m^3	0.0001%	4.96E-06 ug/m^3	7.14E-05	1.20E-02		YES
Antimony	3.6208 ug/m^3	0.0377%	1.36E-03 ug/m^3		2.00E-03		YES
Arsenic	3.6208 ug/m^3	0.0007%	2.58E-05 ug/m^3		5.00E-03		YES
Beryllium	3.6208 ug/m^3	0.0000%	6.66E-07 ug/m^3		4.80E-05		YES
Cadmium	3.6208 ug/m^3	0.0161%	5.84E-04 ug/m^3		3.50E-02		YES
Chromium	3.6208 ug/m^3	0.0023%	8.26E-05 ug/m^3		2.00E-05		NO
Manganese	3.6208 ug/m^3	0.0017%	6.05E-05 ug/m^3		5.00E-04		YES
Mercury	3.6208 ug/m^3	0.3151%	1.14E-02 ug/m^3		3.00E-03	3.00E-01	NO
Nickel	3.6208 ug/m^3	0.0017%	6.29E-05 ug/m^3		2.40E-03	1.00E-02	YES
Hydrogen Fluoride	3.6208 ug/m^3	0.4388%	1.59E-02 ug/m^3		5.90E-02	5.80E+00	YES
Chlorine	3.6208 ug/m^3	0.3092%	1.12E-02 ug/m^3		7.10E-01	2.30E-01	YES
2,3,7,8-Tetrachlorodibenzo -p-dioxin	3.6208 ug/m^3	0.0000%	5.83E-09 ug/m^3	2.63E-09	3.50E-08		NO
Total CDF (chlorinated dibenzofurans)	3.6208 ug/m^3	0.0002%	7.62E-06 ug/m^3				YES
Total Combined Concentration			3.62E+00 ug/m^3				

RISK ASESSMENT

As shown in the previous table, four HAPs for which emissions factors are established exceeded the levels specified in Table 1 or Table 2 of ARM 17.8.770. Therefore, the Department conducted a full risk assessment for those four pollutants. The Department determined that the calculated Cancer Risks demonstrate a negligible risk to human health and the environment. As documented in the table below and in accordance with the Department's negligible risk requirement, no single HAP concentration results in a Cancer Risk greater than 1.00E-06 and the sum of all Cancer Risks are less than 1.00E-05. Further, the sum of the Chronic Non-cancer Reference Exposure Level (CNCREL) hazard quotients is less than 1.0 as required to demonstrate compliance with the negligible risk requirement.

NEGLIGIBLE RISK ASSESSMENT[1]						
HAP	Modeled HAP Concentration	Cancer URF[2] $(\mu g/m^3)^{-1}$	Cancer Risk[3]	CNCREL[4] $\mu g/m^3$	CNCREL Quotient[5]	Notes
HCl	3.57E+00 ug/m^3	ND	ND	20	1.79E-01	(AP42, Table 2.3-3, 7/93)
Chromium	8.26E-05 ug/m^3	0.012	9.92E-07	0.1	8.26E-04	(AP42, Table 2.3-6, 7/93)
Mercury	1.14E-02 ug/m^3	ND	ND	0.3	3.08E-02	(AP42, Table 2.3-7, 7/93)
2,3,7,8-Tetrachlorodibenzo-p-dioxin	5.83E-09 ug/m^3	33	1.92E-07	0.00004	1.46E-04	(AP42, Table 2.3-11, 7/93)
TOTAL RISK			1.18E-06		2.18E-01	

(1) Source of chronic dose-response values is from Table 1: Prioritized Chronic Dose-Response Values for Screening Risk Assessments (5/21/2012), from www.epa.gov/ttn/atw/toxsource/table1.pdf.

(2) Cancer Chronic Inhalation Unit Risk Factor, units $1/\mu g/m^3$

(3) Cancer Risk is unitless and is calculated by multiplying the predicted concentration by the URF.

(4) Chronic Noncancer Reference Exposure Level

(5) CNCREL Quotient Value is calculated by dividing the modeled HAP concentration by the CNCREL.

VIII. Taking or Damaging Implication Analysis

As required by 2-10-105, MCA, the Department conducted the following private property taking and damaging assessment.

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)

Based on this analysis, the Department determined there are no taking or damaging implications associated with this permit action.

IX. Environmental Assessment

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

DEPARTMENT OF ENVIRONMENTAL QUALITY
Permitting and Compliance Division
Air Resources Management Bureau
P.O. Box 200901, Helena, Montana 59620
(406) 444-3490

FINAL ENVIRONMENTAL ASSESSMENT (EA)

Issued To: Montana Highway Patrol
14th Street North
Great Falls, MT 59401

Montana Air Quality Permit Number (MAQP): 4742-00

Preliminary Determination Issued: 6/13/12
Department Decision Issued: 7/16/12
Permit Final: 8/01/12

1. *Legal Description of Site*: The initial location of the Montana Highway Patrol (MHP) portable incinerator would be in the NW¼ SW¼ Section 6, Township 20 North, Range 6 East, in Cascade County, Montana. However, MAQP #4742-00 applies while operating at any location in Montana, except those areas having a Department of Environmental Quality (Department)-approved permitting program, areas considered tribal lands, or areas in or within 10 kilometers (km) of certain particulate matter with an aerodynamic diameter of 10 microns or less (PM_{10}) nonattainment areas.

2. *Description of Project:* MHP proposes to operate a portable liquid propane-fired Inciner8 Model M-60 incinerator with capacity per batch load rating of 50 kilograms (kg) and an approximate incineration time per load of 2.5 hours. This unit is used to incinerate unwanted and expired prescription drugs, illegal substances, and materials that law enforcement deems necessary to burn. The incinerator utilizes a secondary combustion chamber with an auxiliary afterburner to facilitate complete combustion of volatile emissions. Initial and supplementary combustion is provided by two burners fired by liquid propane, one in the primary chamber and one in the secondary chamber. The secondary chamber shall maintain a temperature of 850 degrees Celsius (˚C) (1,562 degrees Fahrenheit (˚F)), with no single reading less than 812 ˚C (1,462 ˚F). After the secondary chamber has been heated sufficiently, the primary burner may be ignited and the incineration process can begin.

3. *Objectives of Project*: The objective of the project is to provide a safe means of disposal of unwanted or expired prescription drugs and other illegal substances that law enforcement deems necessary to burn.

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 MHP 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 MAQP #4742-00.

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 initial project area. The incinerator is a source of air emissions and its operation would result in an increase in air pollutants. 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 incinerator would not require the construction of any facilities and would operate within the MHP facility grounds in a secure, gated space. 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 project would not be expected to affect water quantity or distribution in the project area. The incinerator does not discharge or use water during operation.

Emissions from the project may affect water quality in the project area due to air pollutant deposition. The Missouri River is approximately ½ mile north of the project site. However, any emissions and resulting deposition impacts from the project would be very minor due to the low concentration of those pollutants emitted.

C. Geology and Soil Quality, Stability and Moisture

The project would not be expected to affect the geology, stability, and moisture of the project area. The proposed incinerator would not require any facility construction and would operate on an existing concrete pad.

Proper incinerator operation would result in minor air pollution emissions to the ambient environment. These pollutants would deposit on the soils in the surrounding area. However, any impact from deposition of these pollutants would be very minor due to dispersion characteristics and the low concentration of those pollutants emitted.

D. Vegetation Cover, Quantity, and Quality

Air emissions from the project may affect vegetation cover, quantity, and quality in the project area. However, any emissions and resulting impacts from the project would be minor due to the dispersion characteristics and the low concentration of those pollutants emitted.

Further, the incinerator would operate within an existing secure, gated space on a concrete pad. Overall, any impact to the vegetation cover, quantity, and quality of the proposed project area would be minor.

E. Aesthetics

The project would result in a minor impact to the aesthetic nature of the project area. The incinerator would operate outside and would be visible. Any visible emissions from the source would be limited to 10% opacity. Therefore, the project would result in only a minor impact to aesthetics of the area.

F. Air Quality

The project would result in the emissions of various criteria pollutants and HAPs to the ambient air in the project area. However, it has been demonstrated by air dispersion modeling that any air quality impacts from the 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 incinerator. The SCREEN3 model was selected for the air dispersion modeling. The full meteorology option was selected to provide a conservative result. Receptors were placed from 5 to 50,000 meters in a simple terrain array.

Stack parameters and emission rates used in the SCREEN3 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 incinerator or assumed based on available information. MHP has accepted federally enforceable permit conditions limiting the amount of time per day that the incinerator can be used to combust materials in order to reduce potential air emissions. 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

The current permit action could result in minor impacts to any existing unique endangered, fragile, or limited environmental resource in the proposed area of operation because the it is a new source of air emissions in the area. However, the proposed incinerator would not require any facility construction and would operate within a secure, gated space on an existing concrete pad. The initial project area is within Great Falls city limits in a developed area with very little potential for impact to any unique endangered, fragile, or limited environmental resource in the proposed location. 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. Overall, any impact to this unique endangered, fragile, or limited environmental resource of the proposed project area would be minor.

In an effort to assess any potential impacts to any unique endangered, fragile, or limited environmental resources in the initial proposed area of operations, the Department contacted the Montana Natural Heritage Program (MNHP) to identify any species of concern associated with the proposed site location. Search results concluded there are 7 species occurrence reports for 5 species of concern within the vicinity of the proposed project area. These species include the amphibian species of Plains Spadefoot; the bird species of Bald Eagle; the nonvascular plant species of Entosthodon Moss; and vascular plant species of Little Indian Breadroot and Many-headed Sedge.

The species occurrence report for the amphibian species of Plains Spadefoot is located to the northeast of the proposed project location near the banks of the Missouri River. While the MNHP Montana Field Guide indicates that little is known about specific habitat information, this species is usually found in areas with soft sandy/gravelly soils near permanent or temporary bodies of water. These habitats are not found within the proposed project area.

The species occurrence report for the bird species of Bald Eagle is also located to the northeast of the proposed project location along the Missouri River. The preferred habitat for the Bald Eagle is among forested areas along rivers and lakes. These habitats are not found within the proposed project area.

The species occurrence report for the nonvascular plant species of Entosthodon Moss is along the north bank of the Missouri River to the northeast of the proposed project location. The MNHP Montana Field Guide does not provide any habitat information; however, the proposed project location is not along any river or water body shores and presumed to have little to no impact on the surrounding habitats for this species.

The species occurrence reports for the vascular plant species of Little Indian Breadroot and Many-headed Sedge encompass a large area that includes much of the city of Great Falls. Because the initial project area is within a developed area inside the city limits of Great Falls, it is presumed to have little to no impact on the surrounding habitats for these species.

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

The proposed project would result in no demands on the environmental resource of water and minor demands on the environmental resource of 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 Department contacted the Montana Historical Society – State Historical Preservation Office (SHPO) in an effort to identify any historical and/or archaeological sites that may be present in the proposed area of construction/operation. Search results concluded that there have been a few previously recorded sites and cultural resource inventories done within the vicinity of the area proposed for the project. According to correspondence from SHPO, there is a low likelihood that cultural properties will be impacted. Therefore, a recommendation for a cultural resource inventory is unwarranted at this time. However, should cultural materials be inadvertently discovered during this project the SHPO office must be contacted and the site investigated. The proposed project would not require any construction or land disturbance; therefore, there is no perceived impact to historical and archaeological sites.

J. Cumulative and Secondary Impacts

Overall, the cumulative and secondary impacts from this project on the environment in the immediate area would be minor. The Department believes that this facility could be expected to operate in compliance with all applicable rules and regulations as outlined in MAQP #4742-00.

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

The proposed project would not have any impact on social structures and mores because it would not require any construction or land disturbance to operate. In addition, the initial location is within a developed site inside the city limits of Great Falls.

B. Cultural Uniqueness and Diversity

The proposed project would not impact the cultural uniqueness and diversity of the area because the initial location of the incinerator is within an existing developed location.

C. Local and State Tax Base and Tax Revenue

The proposed project is not intended or expected to generate revenue for MHP. MHP has indicated that there is no need for additional employees as a result of this project. The operation of the equipment would require the use of liquid propane as fuel which the purchase of would contribute towards some tax revenue. Therefore, minimal, if any impacts to the local and state tax base and tax revenue are anticipated from this project.

D. Agricultural or Industrial Production

The proposed project would not impact any agricultural land because its initial location is within a developed location inside the city of Great Falls. There is no industrial production associated with the operation of the incinerator. Furthermore, the potential-to-emit of the proposed project is extremely small. Based on the small amount of emissions and the dispersion of those emissions, no discernible amount of impact would be expected to agricultural or industrial production in the area.

E. Human Health

As described in Section VI of the Permit Analysis, modeling and analysis of hazardous air pollutants showed negligible risk to human health. Furthermore, the potential-to-emit of conventional pollutants would be extremely small. MAQP #4742-00 contains enforceable conditions limits designed to minimize the impacts of potential air pollutant emissions. Impacts to human health would be minor, if any discernible amount at all.

F. Access to and Quality of Recreational and Wilderness Activities

The proposed project is to initially operate the incinerator at an existing developed location inside the city limits of Great Falls. There is no current access to recreational or wilderness activities at the proposed initial location. No change to access of recreational and wilderness activities in the surrounding area would be expected. Permit conditions would require opacity of the emissions to be 10% or less while operating. The potential-to-emit of the proposed incinerator would be very small. Therefore, no discernible impacts to the access to quality of recreational and wilderness activities would be expected as a result of this project.

G. Quantity and Distribution of Employment

No need for a change in the number of employees would be expected as a result of this project. Therefore, no impacts to the quantity and distribution of employment would be expected.

H. Distribution of Population

No need for a change in the number of employees would be expected and no other factors affecting distribution of population would be expected to be present as a result of this project. The project proposes to initially operate the incinerator in an existing developed location and would not require any construction or land disturbance. Therefore, no impacts to the distribution of population would be expected.

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 not result in any impact to the local industrial and commercial activity because the incinerator would not require any new construction, would operate within existing developed location, and would not result in additional industrial production or commercial activity.

K. Locally Adopted Environmental Plans and Goals

The Department is not aware of any locally adopted environmental plans and goals this project may impact. 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 MAQP #4742-00.

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 an incinerator to dispose of unwanted and expired prescription drugs, illegal substances, and other materials that law enforcement deems necessary to burn. MAQP #4742-00 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

EA prepared by: Ed Warner
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