Montana Department of
ENVIRONMENTAL QUALITY
Brian Schweitzer, Governor
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July 27, 2010

Ross Holter
Flathead Electric LFGE Facility
4098 Highway 93 North
Kalispell, MT 59901

Dear Mr. Holter:

Air Quality Permit #4245-01 is deemed final as of July 27, 2010, by the Department of Environmental Quality (Department). This permit is for landfill gas to energy facility. 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,

Vickie Walsh
Air Permitting Program Supervisor
Air Resources Management Bureau
(406) 444-3490

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VW:JM
Enclosures

Montana Department of Environmental Quality
Permitting and Compliance Division

Montana Air Quality Permit #4245-01

Flathead Electric LFGE Facility
4098 Highway 93 North
Kalispell, MT 59901

July 27, 2010

MONTANA AIR QUALITY PERMIT

Issued To: Flathead Electric LFGE Facility
4098 Highway 93 North
Kalispell, MT 59901

Montana Air Quality Permit: #4245-01
Administrative Amendment (AA)
Request Received: 9/23/09
Department's Decision on AA: 07/09/10
Permit Final: 07/27/10
AFS #: 029-0033

A Montana Air Quality Permit (MAQP), with conditions, is hereby granted to the Flathead Electric Landfill Gas to Energy (Flathead LFGE) facility, 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. Plant Location

The Flathead LFGE operates a landfill gas to energy facility at the Flathead County Solid Waste District's (District) Landfill. The facility is located 9 miles north of Kalispell on Highway 93. The legal description of the facility is the NE¼ of the NW¼ of Section 1, Township 29 North, Range 22 West, in Flathead County. A complete list of equipment is included in the permit analysis of this permit.

B. Current Permit Action

On September 23, 2009, the District, the owner of the Flathead County Landfill (FCLF), requested the transfer of equipment associated with the LFG collection and control system (GCCS) (MAQP #2850-06) to the LFGE facility located at District's existing landfill (MAQP#4245-00). The transferred equipment includes a LFG GCCS consisting of a network of LFG wells, connecting piping, and an enclosed LFG flare.

SECTION II: Conditions and Limitations

A. Emission Limitations

1. Emissions from the LFG-fired engine/generator shall not exceed the following limits, on a grams per brake-horsepower hour (g/bhp-hr) basis. All limits are based on a 3-hour rolling average (ARM 17.8.752):

Oxides of Nitrogen (NO_x):	0.5 g/bhp-hr
Carbon Monoxide (CO) (100 percent (%) output)	2.75 g/bhp-hr
CO (50% output)	3.0 g/bhp-hr
Volatile Organic Compounds (VOC) (100% output):	0.7 g/bhp-hr
VOC (50% output)	0.9 g/bhp-hr
Particulate matter with an aerodynamic diameter of 10 microns or less (PM_{10}):	0.1 g/bhp-hr

2. Flathead LFGE shall operate the landfill flare system as specified in Flathead County application for MAQP #2850-03 and all supporting documentation (ARM 17.8.749).

3. Flathead LFGE shall operate a flame sensor system and an associated recorder, or any other equivalent device, to detect the presence of a flame (ARM 17.8.749).

4. Flathead LFGE shall continuously operate a flowmeter and associated recorder on the flare to determine the total flow of landfill gas to the flare (ARM 17.8.749).

5. Flathead LFGE shall operate and maintain a flare capable of meeting the requirements contained in 40 CFR 60.18 (ARM 17.8.752 and ARM 17.8.340).

6. The total volume of landfill gas sent to the flare may not exceed 8.64×10^5 standard cubic feet per day. Note: Standard conditions are 77 degrees Fahrenheit (^{o} F) and 1 atmosphere (atm) pressure (ARM 17.8.749).

7. Flathead LFGE may not cause or authorize to be discharged into the atmosphere from the incinerator/landfill flare system:

    - Any visible emissions, except for periods not to exceed a total of 5 minutes during any 2 consecutive hours (ARM 17.8.752 and 40 CFR 60.18).

    - Any particulate emissions in excess of 0.1 gr/dscf corrected to 12% carbon dioxide (CO_2) (ARM 17.8.752).

    - Any nitrogen oxide (NO_x) emissions in excess of 5.74 lb/hr (ARM 17.8.752).

    - Any carbon monoxide (CO) emissions in excess of 18.40 lb/hr (ARM 17.8.752).

    - Any flare inlet concentrations in excess of the amounts contained in Table I (ARM 17.8.752 and MCA 75-2-215).

Table I. Flare Inlet Concentration Limitations

POLLUTANTS	**FLARE INLET CONCENTRATION (mg/m^3)**
Annual Testing	
Acetonitrile	137
Benzene	61
Carbon Disulfide	18
Carbon Tetrachloride	0.25
Carbonyl Sulfide	15
Chlorobenzene	12
Chloroethane	33
Chloroform	1.5
Chloromethane	25
1,1-Dichloroethane	95
1,2-Dichlorethane	17
Dichloromethane	494
1,2-Dichloropropane	8
Ethylbenzene	200
Hexane	232
Methyl Ethyl Ketone	209

POLLUTANTS (con't)	FLARE INLET CONCENTRATION (mg/m^3)
Methyl Isobutyl Ketone	77
Perchloroethene	253
1,1,2,2-Tetrachloroethane	76
Toluene	1481
1,1,1-Trichloroethane	26
Trichloroethene	152
Vinyl Chloride	188
Xylenes	525
5-Year Testing	
Mercury	0.004

- Allowable emissions represent a worst case scenario based on a 10-fold increase in reported potential emissions.

8. Flathead LFGE shall not cause or authorize emissions to be discharged into the outdoor atmosphere from any sources installed after November 23, 1968, that exhibit an opacity of 20% or greater averaged over 6 consecutive minutes (ARM 17.8.304).

9. Flathead LFGE 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 (ARM 17.8.308).

10. Flathead LFGE shall treat all unpaved portions of the haul roads, access roads, parking lots, or general plant area with water and/or chemical dust suppressant as necessary to maintain compliance with the reasonable precautions limitation in Section II.A.9 (ARM 17.8.749).

11. Flathead LFGE shall comply with all applicable standards and limitations, and the reporting, recordkeeping and notification requirements contained in 40 CFR 60, Subpart JJJJ, *Standards of Performance for Stationary Spark Ignition Internal Combustion Engines*, and 40 CFR 63, Subpart ZZZZ, *National Emissions Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines*, for any applicable engine (ARM 17.8.340 and 40 CFR 60, Subpart JJJJ, 40 CFR 63, Subpart ZZZZ).

B. Testing Requirements

1. Flathead LFGE shall conduct a test on the flare inlet concentration for the pollutants identified in Table I and demonstrate compliance with the limits contained in Table I annually, except once every five years for Mercury, or according to another testing/monitoring schedule as may be approved by the Department of Environmental Quality (Department) in writing. Flathead LFGE shall also test the liquid condensate once every five years for the pollutants listed in Table I (ARM 17.8.105 and ARM 17.8.749).

2. All compliance source tests shall conform to the requirements of the Montana Source Test Protocol and Procedures Manual (ARM 17.8.106).

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

C. Operational Reporting Requirements

1. Flathead LFGE shall maintain on-site daily records identifying the total volume (SCF) of landfill gas sent to the flare. Note: Standard conditions are 77ºF and 1 atm pressure (ARM 17.8.749).

2. Flathead LFGE 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. Flathead LFGE 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. All records compiled in accordance with this permit must be maintained by Flathead LFGE 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).

D. Notification

Flathead LFGE shall provide the Department with written notification of the following dates within the specified time periods (ARM 17.8.749):

1. Commencement of construction of any future gas extraction wells within 30 days after commencement of construction.

2. Anticipated connection date of future gas extraction wells to the flare system, between 30 and 60 days prior to the actual connection date; and

3. Actual connection date of future gas extraction wells to the flare system within 15 days after the actual connection date.

SECTION III: General Conditions

A. Inspection – Flathead LFGE 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 (CEMS, 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 Flathead LFGE fails to appeal as indicated below.

C. Compliance with Statutes and Regulations – Nothing in this permit shall be construed as relieving Flathead LFGE 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 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 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 Flathead LFGE 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 (MAQP) Analysis
Flathead Electric LFGE Facility
MAQP #4245-01

I. Introduction/Process Description

Flathead Electric owns and operates a landfill gas to energy (Flathead LFGE) facility. The facility is located in Section 1, Township 29 North, Range 22 West, in Flathead County, at Flathead County Solid Waste District's existing landfill.

A. Permitted Equipment

The facility incorporates the following major components:

- A landfill gas (LFG) pressurization and cooling skid. The purposes of the skid are to raise the pressure of the LFG to a pressure acceptable for use in the engine/generator and to remove moisture from the LFG. The skid will produce about 610 square cubic foot per minute (scfm) of LFG at about 2.5 pounds per standard inch guage (psig);

- A Caterpillar G3520C, 2,233 brake horsepower, reciprocating engine/generator.

- An LFG collection extraction system routed to a 2001 Perennial Energy, Inc. (PEI) enclosed ground flare with a capacity of 18 million British thermal units per hour (MMBtu/hr). The flare is capable of combusting 600 scfm of LFG containing approximately 50% methane and 50% nonmethane organic compounds (NMOC) and has the ability to be upgraded to accommodate 1200 scfm of LFG as more wells are installed. The system includes the following additional components:

    - Natural gas fired pilot assembly
    - One flare station blower capable of providing 600 scfm of LFG to the flare
    - Condensate knock-out vessel with particulate filter for LFG particulate removal prior to flaring
    - Flow meter used to monitor and help control the flare's operation
    - Miscellaneous piping and associated equipment used in support of the LFG extraction system; and

- Conveyors, and associated equipment.

B. Process Description

The LFG collection system is comprised of approximately 25 vertical extraction wells, which actively collect gas from the waste prism, and headers and lateral piping to convey extracted LFG to the flare system. The LFG collection system will be expanded as the landfill expands. This permit may need to be altered if any of the proposed extraction wells will result in an increase in the permitted amount of landfill gas that will be combusted by the flare or if these wells result in new pollutants being emitted.

This system results in a variety of pollutants being emitted from the flare. The primary emissions consist of carbon monoxide (CO), oxides of nitrogen (NO_x), and volatile organic compounds (VOC). There will be only minimal particulate emissions (<3 tpy), since knockout drums and demisters will be used to remove the particulate from the landfill gas prior to flaring. In addition, a health risk assessment has been completed on the emission of VOCs and Hazardous Air Pollutants (HAP) that will result from this proposal. A description of the health risk assessment is contained in Section VI of the analysis.

The facility incorporates a single Caterpillar G3520C engine/generator. The engine/generator is fueled on LFG produced by, and collected at, the Flathead County Solid Waste District's Landfill. If the LFG is not used as a fuel for the engine/generator, it will be destroyed by the existing enclosed flare.

D. Permit History

On September 23, 2008, the Department issued **MAQP #4245-00** to Flathead LFGE for the operation of landfill gas to energy facility. The facility consisted of single engine/generator to be fueled on landfill gas produced by and collected at the Flathead County Solid Waste District's landfill. Any LFG not used as a fuel for the engine/generator, would be destroyed in an existing enclosed flare owned and permitted by the Flathead County Solid Waste District.

E. Current Permit Action

On September 17, 2009, the Department received a request from the Flathead County Solid Waste District (District), the owner of the Flathead County Landfill (FCLF) to transfer equipment associated with the LFG gas collection and control system (GCCS) to the LFGE facility located at Flathead County Solid Waste District's existing landfill. **MAQP #4245-01** replaces MAQP #4245-00.

F. Additional Information

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 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).

Flathead LFGE 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}

Flathead LFGE 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.

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 17.8.322 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.

6. 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.

7. 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.

   a. 40 CFR 60, Subpart A – General Provisions apply to all equipment or facilities subject to an NSPS Subpart as listed below:

   b. 40 CFR 60, Subpart JJJJ – Standard of Performance for Stationary Spark Ignition Internal Combustion Engines. The Flathead LFGE engine is an affected source under this subpart because it is larger than 25 hp and was manufactured after January 1, 2008.

8. ARM 17.8.342 Emission Standards for Hazardous Air Pollutants for Source Categories. The source, as defined and applied in 40 CFR Part 63, shall comply with the requirements of 40 CFR Part 63, as listed below:

   a. 40 CFR 63, Subpart A – General Provisions apply to all equipment or facilities subject to an NESHAP Subpart as listed below:

   b. 40 CFR 63, Subpart ZZZZ National Emission Standards for Hazardous Air Pollutants From Reciprocating Internal Combustion Engines (RICE). The Flathead LFGE facility contains a CI RICE engine at an area source of HAPs which is an affected source under 40 CFR 63 Subpart ZZZZ. However, because the LFG extraction and purification facility is an area source of HAPs and not a major source of HAPs, the engine may meet the requirements of 40 CFR 63, Subpart ZZZZ by meeting the requirements of 40 CFR 60, Subpart JJJJ for spark ignition engines. No further requirements apply for such engines under 40 CFR 63, Subpart ZZZZ.

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. Flathead LFGE was not required to submit a permit application fee for the current permit action because it is considered an administrative 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 alteration to construct, alter, or use any air contaminant sources that have the potential to emit (PTE) greater than 25 tons per year of any pollutant. Flathead LFGE has a PTE greater than 25 tons per year of carbon monoxide (CO); therefore, an air quality permit is required. In addition, this rule also requires any incinerator, as defined in 75-2-103(11), MCA and subject to the requirements of 75-2-215, MCA to obtain a permit. Flathead LFGE's flare is subject to the above requirements and therefore a permit is required.

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, alteration, or use of a source. Flathead LFGE was not required to submit an application for the current permit action because it is considered an administrative 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. Flathead LFGE was not required to submit a public notice for the current permit action because it is considered an administrative action.

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 current permit action does not require a BACT analysis because it is considered an administrative action and there will be no increase in emissions from the project.

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 Flathead LFGE 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 17.8.760 Additional Review of Permit Applications. This rule describes the Department's responsibilities for processing permit applications and making permit decisions on those applications that require 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 altered 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.

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). The LFGE facility is located at Flathead County Solid Waste District's existing landfill, which operates under Title V Operating Permit #OP2850-04. Flathead Electric Cooperative leases a parcel of about 1.5 acres in size from Flathead County Solid Waste District for the LFGE facility. The 1.5 acre LFGE parcel is located within the landfill; thus, the adjacent land us in all directions is landfill operations. Any LFG not burned in the Flathead LFGE facility would be routed to the flare.

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 #4245-01 for Flathead LFGE, 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 subject to a current NSPS. The LFG-fired RICE-driven generator is subject to NSPS Subpart JJJJ: Standards of Performance for Stationary Spark Ignition Internal Combustion Engines.

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

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

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

   Based on these facts, the Department determined that Flathead LFGE will be a minor source of emissions as defined under Title V. However, if minor sources subject to NSPS are required to obtain a Title V Operating Permit, Flathead LFGE will be required to obtain a Title V Operating Permit for the Flathead LFG extraction facility.

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 commercial solid waste incinerators. Flathead LFGE therefore had to 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 HAPs, from the incineration of solid waste. The Department determined that the information submitted in this request and the original application is sufficient to fulfill this requirement.

III. BACT Determination

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

A BACT analysis was not required for the current permit action because it is considered an administrative action.

IV. Emission Inventory

Source	**Tons/Year**				
	PM_{10}	**NO_x**	**CO**	**SO_2**	**VOC**
Caterpillar G3520C engine/generator (2,233 bhp)	2.16	10.78	59.30	5.33	15.09
Flare	1.58	4.73	11.83	0.026	0.077
Total	3.74	15.51	71.13	5.36	15.17

Caterpillar engine/generator

PM_{10} Emissions
2,233 bhp * 0.1 g/bhp-hr / 453.6 g/lb * 8,760 hours/year / 2,000 lb/ton = 2.16 tons/year

NO_x
2,233 bhp * 0.5 g/bhp-hr / 453.6 g/lb * 8,760 hours/year / 2,000 lb/ton = 10.78 tons/year

CO
2,233 bhp * 2.75 g/bhp-hr / 453.6 g/lb * 8,760 hours/year / 2,000 lb/ton = 59.30 tons/year

VOC
2,233 bhp * 0.70 g/bhp-hr / 453.6 g/lb * 8,760 hours/year / 2,000 lb/ton = 15.09 tons/year

SO_2
200 ppmv * 34.08 * 64.07/34.08 / (385.1 * 10^6) * 610 scfm* 525,000 min/year / 2,000 lb/ton = 5.33 tons/year

Flare

PM Emissions

Emission Factor: 0.72 lb/hr (Company Information)
Hours of Operation: 8760 hr/yr
*Calculations: 0.72 lb/hr * 8760 hr/yr * 0.0005 ton/lb = 3.15 ton/yr*

PM_{10} Emissions

Emission Factor: 0.36 lb/hr (Company Information)
Hours of Operation: 8760 hr/yr
*Calculations: 0.36 lb/hr * 8760 hr/yr * 0.0005 ton/lb = 1.58 ton/yr*

NO_x Emissions

Emission Factor: 1.08 lb/hr (Company Information)
Hours of Operation: 8760 hr/yr
Calculations: *1.08 lb/hr * 8760 hr/yr * 0.0005 ton/lb = 4.73 ton/yr*

CO Emissions

Emission Factor: 2.70 lb/hr (Company Information)
Hours of Operation: 8760 hr/yr
Calculations: *2.70 lb/hr * 8760 hr/yr * 0.0005 ton/lb = 11.83 ton/yr*

VOC Emissions

Emission Factor: 0.018 lb/hr (Company Information)
Hours of Operation: 8760 hr/yr
Calculations: *0.018 lb/hr * 8760 hr/yr * 0.0005 ton/lb = 0.077 ton/yr*

SO_x Emissions

Emission Factor: 0.006 lb/hr (Company Information)
Hours of Operation: 8760 hr/yr
Calculations: 0.006 lb/hr * 8760 hr/yr * 0.0005 ton/lb = 0.026 ton/yr
**Emissions based on a maximum flowrate of 600 standard cubic feet per minute, 40% methane, and 595 ppm VOC.*

Table I. Potential Hazardous Air Pollutant - Risk Assessment Pollutants Emission Estimations

Pollutant	Inlet Uncontrolled Emission Rate (lb/hr)	Controlled Emission Rate* (lb/hr)	Exhaust Worst Case Emission Rate** (lb/hr) (Uncontrolled)	Worst Case Emission Rate** (ton/yr) (Uncontrolled)
Acetonitrile	3.09E-02	6.18E-04	3.09E-01	1.35
Benzene	1.37E-02	2.74E-04	1.37E-01	6.00E-01
Carbon Disulfide	4.06E-03	8.12E-05	4.06E-02	1.77E-01
Carbon Tetrachloride	5.66E-05	1.13E-06	5.66E-04	2.48E-03
Carbonyl Sulfide	3.43E-03	6.86E-05	3.43E-02	1.50E-01
Chlorobenzene	2.59E-03	5.18E-05	2.59E-02	1.13E-01
Chloroethane	7.42E-03	1.48E-04	7.42E-02	3.25E-01
Chloroform	3.29E-04	6.59E-06	3.29E-03	1.44E-02
Chloromethane	5.62E-03	1.12E-04	5.62E-02	2.46E-01
1,1-Dichloroethane	2.14E-02	4.28E-04	2.14E-01	9.37E-01
1,2-Dichloroethane	3.73E-03	7.46E-05	3.73E-02	1.63E-01
Dichloromethane	1.12E-01	2.23E-03	1.12	4.91
1,2-Dichloropropane	1.87E-03	3.74E-05	1.87E-02	8.19E-02
Ethylbenzene	4.50E-02	9.00E-04	4.50E-01	1.97
Hexane	5.21E-02	1.04E-03	5.21E-01	2.28
Mercury	8.08E-07	1.62E-08	8.08E-06	3.54E-05
Methyl Ethyl Ketone	4.70E-02	9.40E-04	4.70E-01	2.05
Methyl Isobutyl Ketone	1.72E-02	3.44E-04	1.72E-01	7.53E-01
Perchloroethene	5.69E-02	1.14E-03	5.69E-01	2.49
1,1,2,2-Tetrachloroethane	1.71E-02	3.43E-04	1.71E-01	7.49E-01
Toluene	3.33E-01	6.66E-03	3.33	14.6
1,1,1-Trichloroethane	5.89E-03	1.18E-04	5.89E-02	2.58E-01
Trichloroethene	3.41E-02	6.82E-04	3.41E-01	1.49
Vinyl Chloride	4.22E-02	8.44E-04	4.22E-01	1.85
Xylenes	1.18E-01	2.36E-03	1.18	5.17

*Based on 98% flare destruction efficiency
**Based on a 10-fold increase in emissions

Table II. HCl Emission Estimation

Chlorinated Compounds	Molecular Weight	# of Cl Molecules	Cl Concentration* (mg/m^3)
Carbon Tetrachloride	153.84	4	0.23
Chlorobenzene	112.56	1	3.65
Chloroethane	64.52	1	18.07
Chloroform	119.39	3	1.34
Chloromethane	50.49	1	17.48
1,1-Dichloroethane	99	2	68.21
1,2-Dichloroethene	99	2	11.82
Dichloromethane	84.94	2	412.01
1,2-Dichloropropane	113	2	5.27
Perchloroethene	165.85	4	216.31
Chlorinated Compounds	Molecular Weight	# of Cl Molecules	Cl Concentration* (mg/m^3)
1,1,1,2-Tetrachloroethane	167.8	4	64.20
1,1,1-Trichloroethane	133.4	3	20.88
Trichloroethane	131.4	3	122.71
Vinyl Chloride	*62.5*	*1*	*106.46*

Total Potential HCl emissions → 1068.64

Example Calculation: Carbon Tetrachloride

Cl Concentration = Reported CCl_4 Inlet Concentration (Mg/m^3) * (# of Cl molecules * Molecular Wt. Cl / Molecular Wt. CCl_4)

Cl Concentration = 0.25 Mg CCl_4/m^3 * (4 * 35.45 / 153.84) = 0.23 Mg Cl/m^3

*Based on a 10-fold increase in emission.

V. Existing Air Quality

On July 1, 1987, the Environmental Protection Agency (EPA) promulgated new National Ambient Air Quality Standards (NAAQS) for PM_{10}. Due to exceedances of the national standards for PM_{10}, the cities of Kalispell (and the nearby Evergreen area), Columbia Falls, Butte, Whitefish, Libby, Missoula, and Thompson Falls were designated by EPA as nonattainment for PM_{10}. As a result of this designation, the EPA required the Department and the City-County Health Departments to submit PM_{10} State Implementation Plans (SIP). The SIPs consisted of emission control plans that controlled fugitive dust emissions from roads, parking lots, construction, and demolition, since technical studies determined these sources to be the major contributors to PM_{10} emissions.

The current permit action would not increase PM_{10} emissions, as it is a combination of previously permitted emitting units. Therefore, the Department believes the area will not be affected.

VI. Ambient Air Impact Analysis

In the view of the Department, the amount of controlled emissions generated by this project will not cause concentrations of any regulated pollutant in the ambient air that exceed any set ambient standard. Any potential impacts will be minimized by the conditions and limitations established in MAQP #4245-01.

VII. Health Risk Assessment

A health risk assessment was conducted by the Department to determine if the Flathead LFGE enclosed flare/incinerator (permitted under Permit Action #2850-03 and transferred to MAQP #4245-01) complied with the negligible risk requirement of MCA 75-2-215. Only those air toxic pollutants that were listed in the January 1992 CAPCOA Risk Assessment Guidelines that had established emission factors were considered.

Table III shows the pollutants that were identified for the risk assessment, the Chemical Abstract Service Number (CAS #) for each pollutant, the emission rate in grams/second that was used in the modeling, and the corresponding ambient concentration of the pollutants. Modeling was conducted for each pollutant identified. A copy of this modeling is contained with the original application (MAQP #2850).

Table III. Calculation of Maximum Ambient Concentrations

Pollutant	CAS #	Flare Emissions* (g/sec)	Max. Conc. (ug/m^3)
Acetonitrile		0.039	6.69E-02
Benzene	71-43-2	0.017	3.12E-02
Carbon Disulfide	75-15-0	0.005	8.92E-03
Carbon Tetrachloride	56-23-5	0.000070	1.34E-04
Carbonyl Sulfide		0.004	6.69E-03
Chlorobenzene	108-90-7	0.003	6.69E-03
Chloroethane		0.009	1.78E-02
Chloroform	67-66-3	0.0004	8.92E-04
Chloromethane		0.007	1.34E-02
1,1-Dichloroethane	75-34-3	0.027	4.46E-02
1,2-Dichloroethane	75343	0.005	8.92E-03
Dichloromethane		0.141	2.68E-01
1,2-Dichloropropane		0.0024	4.46E-03
Ethylbenzene	100414	0.057	1.03E-01
Hexane	110-54-3	0.065	1.16E-01
Mercury	7439-97-6	0.00000102	1.85E-06
Methyl Ethyl Ketone	78-93-3	0.059	1.07E-01
Methyl Isobutyl Ketone		0.022	3.79E-02
Perchloroethene		0.072	1.32E-01
1,1,1,2-Tetrachloroethane	79-34-5	0.022	4.01E-02
Toluene	108-88-3	0.420	7.62E-01
1,1,1-Trichloroethane	79016	0.007	1.49E-02
Trichloroethene	79-01-6	0.043	7.81E-02
Vinyl chloride	75-01-4	0.053	9.59E-02
Xylenes	1330-20-7	0.149	2.70E-01

**Flare emissions = uncontrolled emissions with a 10-fold increase*

The predicted maximum ambient air concentrations of the constituents in Table III were then used in the risk assessment model. Table IV shows the results of the risk assessment modeling. It is important to note that the emission rate used in the model was the uncontrolled emission rate multiplied by 10. This yielded a conservative result because the emissions were overestimated.

Table IV. Risk Assessment Results

Chemical Compound	% of total concentration[1]	Annual Concentration[2] ($\mu g/m^3$)	Cancer ELCR[3] Chronic	Non – Cancer Hazard Quotient (NCHQ[4])	
				Chronic	Acute
Benzene	1.3	3.12E-02	2.60E-07	4.39E-04	0.0000
Carbon Disulfide	0.4	8.92E-03	ND	1.27E-05	0.0000
Carbon Tetrachloride	0.006	1.34E-04	2.01E-09	5.60E-05	0.0000
Chloroform	0.03	8.92E-04	2.00E-08	2.55E-05	0.0000
Ethyl Benzene	4.6	1.03E-01	ND	7.90E-05	0.0000
Hexane	5.2	1.60E-01	ND	5.80E-04	0.0000
Mercury	0.000083	1.85E-06	ND	6.17E-06	0.0000
Methyl Ethyl Ketone	4.8	1.07E-01	ND	1.07E-04	0.0000
1,1,2,2 Tetrachloroethane	1.8	4.01E-02	1.00E-08	ND	0.0000
Toluene	34.2	7.62E-01	ND	5.75E-06	0.0000
Vinyl Chloride	4.3	9.59E-02	7.48E-06	3.69E-03	0.0000
Xylene	12.1	2.70E-01	ND	5.67E-04	0.0000
Total Risks	N/A	N/A	7.77E-06	5.57E-03	0.0000

- Table IV includes only those chemicals reported by Flathead County for which risk data exists.
- ND = No Data Available

[1]% of total concentration = emission rate each pollutant/sum of all pollutants emission rates (2.00E-4)
[2]annual concentration = (max 1-hr conc. from model * 0.1 * % of total)/100-or-(0.2021E-1 * 0.1 * % of total)/100
[3]ELCR = excess lifetime cancer risks = Annual Concentration * Cancer Potency Factor
[4]NCHQ = annual concentration/Risk Factor Concentration

Based on the results of this risk assessment, the Department determined that emissions from Flathead LFGE's flare will constitute a negligible risk to public health, safety, and welfare.

VII. 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 pubic 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.

VIII. Environmental Assessment

An environmental assessment was not required for the current permit action because it is considered an administrative action.

Permit Analysis prepared by: Julie Merkel
Date: April 14, 2010