Air Resources Management Bureau • P.O. Box 200901 • Helena MT 59620-0901 • (406) 444-3490

AIR QUALITY PERMIT APPLICATION FOR STATIONARY SOURCES

Montana Department of Environmental Quality
Air Resources Management Bureau
Permitting Section Supervisor
1520 E. Sixth Avenue
P.O. Box 200901
Helena, MT 59620-0901
Phone: (406) 444-3490 FAX (406) 444-1499
Email: DEQ-ARMB-Admin@mt.gov

For State of Montana Use Only
Permit Application #: _____ AFS #: _____ Application Fee Paid with Application? ☐ Yes ☐ No Amount Paid: _____ Check #: _____

Three complete copies of this application, any associated fees, and the affidavit of publication of the attached public notice must be delivered to the address above. The application may be submitted electronically to the email address provided above; however, the application will not be considered complete until the appropriate permit application fee, affidavit of publication, and certification of truth, accuracy, and completeness are submitted to the Department. Any checks, affidavits, and certifications submitted separately from the application should be clearly identified. The applicant is encouraged to contact the Department with any questions related to this application form.

*Note: This application form should **not** be used for portable sources or oil and gas registrations. Permit application forms for portable sources and oil and gas registrations are available on the Department's website. Applications for Acid Rain permits must be made on nationally standardized forms available from the U.S. Environmental Protection Agency as well as through the Department's application for a Title V Operating Permit.*

§1.0 General Facility Information and Site Description

§1.1 FACILITY NAME AND ADDRESS (As registered with the Montana Secretary of State)

Company Name City of Bozeman

Facility Name Bozeman Sanitary Landfill

Mailing Address	Physical Address (if different from mailing address)
PO Box 1230 Address	_____ Address
Bozeman / MT / 59771 City / State / Zip	_____ / _____ / _____ City / State / Zip

§1.2 Contact Information				
	Name	Title	Telephone	Email
Owner	City of Bozeman			
Facility Manager	Kevin Handelin	Superintendent	582-2332	khandelin@bozeman.net
Responsible Official	Craig Woolard, Ph.D., P.E.	Public Works Director	582-2273	cwoolard@bozeman.net
Alternate Responsible Official	Rick Hixson, P.E.	City Engineer	582-2280	rhixson@bozeman.net
Contact Person	Kevin Handelin	Superintendent	582-2232	khandelin@bozeman.net
Alternate Contact Person	Rick Hixson, P.E.	City Engineer	582-2280	rhixson@bozeman.net
[Note: If email address is provided, the Department will send all permit notices (i.e. Preliminary Determination, Department Decision, and Final Permit) electronically.				

§1.3 PERMIT TYPE (Check all that apply)

☒ **Montana Air Quality Permit (MAQP)**

MAQP Permit Action: ☐ New Facility ☒ Modification to Existing Permit # 2951 - 04

☐ Synthetic Minor (major source using federally enforceable permit conditions to avoid MACT, NSR, or Title V Operating Permit requirements)

☐ New Source Review

☐ Prevention of Significant Deterioration

☐ Nonattainment Area

☐ **Air Quality Operating Permit (Title V)**

Title V Permit Action: ☐ Initial Air Quality Operating Permit

☐ Renewal of Air Quality Operating Permit #OP_____ - _____

☐ Modification of Air Quality Operating Permit #OP_____ - _____

☐ Minor Modification

☐ Significant Modification

Note: The applicant must also send one copy of the Title V Operating Permit application to the EPA at the following address:

Office of Partnerships and Regulatory Assistance
Air and Radiation Program
US EPA Region VIII 8P-AR
1595 Wynkoop St.
Denver, Colorado 80202-1129

A statement certifying that a copy of the Title V Operating Permit application has been mailed to EPA must accompany the Title V Operating Permit application.

§1.4 Physical Location and Facility Information

Qtr/Qtr Section SE Section 30 Township 1S Range 6E

Latitude (in decimal degrees) _____ Longitude (in decimal degrees) _____ County Gallatin

Will the facility be operating in (or impacting) a nonattainment area? ☐ Yes ☒ No

(*Note: Maps of the state's nonattainment areas can be found at the following website:* http://deq.mt.gov/AirQuality/Planning/AirNonattainment.asp.)

If yes, which pollutant(s) is the area nonattainment for?

_____

Total Property Area (acres) 2901 Year Facility Began Operation at Site: 1969

General Nature of Business: Municipal Landfill

Standard Industrial Classification (SIC) Codes(s): 4953

SIC Description(s): Refuse Systems

(*Note: SIC Codes can be found at the following website:* http://www.osha.gov/pls/imis/sicsearch.html.)

For MAQP only, **a drawing, sketch, or topographic map of appropriate scale must be submitted** (maximum scale 1"=500', measurement to the nearest 20'), showing at least the following:

a. The property boundaries on which the source is located;

b. The outlines and dimensions of all existing and proposed buildings and stacks;

c. The locations of existing and proposed emitting units, including lat/long coordinates (in NAD83) and elevation (in feet above mean sea level) for each emitting unit. The emissions units and points should be identified as existing or proposed;

d. Any nearby streets, highways, and waterbodies;

e. Any nearby sensitive areas, such as schools, hospitals, parks, residential areas, etc.;

f. A true north arrow; and

g. A graphically displayed scale.

§1.5 **Project Summary** (*Not Required for Title V Operating Permit applications*)

Overview of project, including any new or modified equipment (*attach additional information as necessary*):
See the section 1.5 document(s) section

Include a process flow diagram showing material balances.

Construction/Installation Schedule:

Expected Construction Start Date: 10/2015 Expected Operation Start Date: 2/2016

Duration (if a temporary source): _____

Optional Information:

Estimate of Capital Expenditure for Proposed Project: $_____

Estimate of Cost of Air Pollution Control Equipment: $_____

§2.0 Emitting Unit Listing

List all existing and proposed emitting units.
For Title V Operating Permits only, note all insignificant emission units.

Note: An **insignificant emissions unit** includes any activity or emissions unit that has the potential to emit less than 5 tons per year of any regulated pollutant, less than 500 pounds per year of lead, less than 500 pounds per year of a hazardous air pollutant, and is not regulated by an applicable requirement, such as a New Source Performance Standard (NSPS) or Maximum Achievable Control Technology (MACT) standard.

EMITTING UNIT		Pollution Control Device	New Source	Existing Source	Insignificant	
ID	Name				Yes	No
	PEI Enclosed Landfill Gas Flare	Flare	☐	☒	☐	☒
			☐	☐	☐	☐
			☐	☐	☐	☐
			☐	☐	☐	☐
			☐	☐	☐	☐
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			☐	☐	☐	☐
			☐	☐	☐	☐

§3.0 Emissions Inventory

A separate Section 3.0 must be completed for each emitting unit listed in Section 2.0.

Emitting Unit ID: _____ Emitting Unit Name: PEI Enclosed Landfill Gas Flare

Attach calculations.
The source(s) of all emissions estimates must be indicated (e.g. manufacturer's data, AP-42, source tests, etc.)
If possible, calculations should be submitted electronically using an Excel spreadsheet.

Regulated Air Pollutant	**Allowable Emission Rate(s)[1]**		**Actual Emission Rate(s)** ***(if applicable)[2]***	
	(Lb/Hour)	(Tons/Year)	(Lb/Hour)	(Tons/Year)
PM	0.103	0.449	0.0667	0.292
PM_{10}	0.103	0.449	0.0667	0.292
$PM_{2.5}$	0	0	0	0
SO_2	0.0000448	0.000196	0.0000291	0.000128
NO_x	0.360	1.58	0.234	1.02
CO	1.20	5.26	0.780	3.42
VOC	0.00202	0.00883	0.00131	0.00574
Pb	0	0	0	0
Other (*specify*): HAP's	0.000250	0.00109	0.000162	0.000712
Other (*specify*):				
Other (*specify*):				
Other (*specify*):				
Other (*specify*):				
Other (*specify*):				

[1] Allowable emission rate(s) should equal the potential to emit, unless a federally enforceable permit limit is proposed. Potential emissions are to be calculated based on production at the maximum capacity for 8,760 hours per year. Only control practices or equipment which is proposed to be made federally enforceable may be used to limit the potential to emit of the unit.

[2] Actual emission rate(s) should equal the average rate at which the unit actually emitted the pollutant during a two-year period which precedes the particular date and which is representative of normal source operation. Actual emissions shall be calculated using the unit's actual operating hours, production rates, and types of materials processed, stored, or combusted during the selected time period.

§4.0 Emitting Unit and Control Equipment Information

A separate Section 4.0 must be completed for each emitting unit listed in Section 2.0. Applications for Title V Operating Permits must address significant emission units individually. Insignificant emission units may be addressed as a group. For information that has been previously submitted, the applicant may instead reference the previously submitted information, including the date the material was submitted and the source (i.e. permit application number, etc.)

Emitting Unit ID: _____ Emitting Unit Name: PEI Enclosed Landfill Gas Flare

§4.1 Emitting Unit Overview:

Narrative Process Equipment/Process Description (*attach additional sheets as necessary*) _____

Landfill gas from Bozeman Landfill is going to be sent to an enclosed flare to be combusted.

Proposed Operational Limitations (*if any*) The flare capacity 6 MMBtu/hr

Source Classification Code (SCC)/ Description: 50100410 Waste Gas Destruction: Waste Gas Flares

(*Note: SCC Codes can be found at the following website*:
http://cfpub.epa.gov/oarweb/download/WebFIRESCCs.csv)

Regulatory Programs: Indicate all air pollution control programs applicable to this emitting unit:

☒ NSPS: 40 CFR 60, Subpart(s): CC AND WWW

☐ NESHAPS: 40 CFR 61, Subpart(s): _____

☐ MACT: 40 CFR 63, Subpart(s): _____

☐ Title V Operating Permit – Significant Emitting Unit

☐ Acid Rain (Title IV)

☐ Risk Management Plan

☐ CAM Plan

☒ Other: 40 CFR 258

§4.2 Process Information (*include units***)**:

Type of Material Processed Landfill Gas

Average Process Rate (tons/hr, gal/hr, etc.) 3.9 MMBtu/hr

Maximum Rated Design Process Rate (tons/hr, gal/hr, etc.) 6 MMBtu/hr

§4.3 Process Identification

Make Perennial Energy Model Enclosed Landfill Gas Flare

Type Landfill Gas Flare Size 4.5' Dia x 24' High

Year of Manufacture/Reconstruction 2015 Year of Installation 2015 or 2016

Power Source Utility

If applicable, provide the following generator information:

Rated Outp Not Applicable

Rated Size of Engine powering the generator (hp) _____

§4.4 Fuel/Combustion Information:

(For variable parameters, indicate the maximum value or a range)

Fuel Type(s) Landfill Gas and Propane (Pilot Fuel)

Average Fuel Combustion Rate: 3.9 MMBtu/hr

Maximum Rated Combustion Rate: 6 MMBtu/hr

Heat Content (Btu rating) 390 BTU/CuFt Sulfur Content (%) <1 Ash Content (%) <1

§4.5 Emitting Unit Location

Latitude (in decimal degrees): 45.718 Longitude (in decimal degrees): -111.025

Datum (NAD27, NAD83, etc.): _____

§4.6 Stack Information (*if applicable*)**:**

Height (feet) 24 Inside Diameter (feet) 4.5

Exit Gas Temperature (˚F) 1400 Exit Gas Flow Rate (ACFM) 14,300

Exit Gas Velocity (ft/sec) 15 Exit Gas Moisture Content (%) <5

Stack Type (check one):

☐ Downward Exit	☐ Multiple Actual Stacks	☐ Fugitive Source
☐ Horizontal Exit	☐ Building Roof Vent	☐ Process Vent
☒ Vertical Exit	☐ Vertical Exit with Cap	

§4.7 Approximate Operating Schedule:

Hours/Day 24 Days/Week 7

Hours/Year 8736 Weeks/Year 52

§4.8 Air Pollution Control Equipment and Practices

Primary and Secondary Air Pollution Control Equipment and/or Procedure Description:

Landfill gas from Bozeman Landfill is going to be sent to an enclosed flare to be combusted.

Primary Air Pollution Control Equipment Description:

Make Perennial Energy Model Enclosed Landfill Gas Flare

Type Landfill Gas Flare Size 4.5' Dia x 24' High

Year of Manufacture 2015 Year of Installation 2015 or 2016

Fuel Type(s) Landfill Gas and Propane (Pilot Fuel) Estimated Control Efficiency 99%

Estimated Capital Equipment Cost (*not required for Title V Operating Permit applications*) _____

Secondary Air Pollution Control Equipment Description:

Make _____ Model _____

Type Not Applicable

Year of Manufacture _____ Year of Installation _____

Fuel Type(s) _____ Estimated Control Efficiency _____

Estimated Capital Equipment Cost (*not required for Title V Operating Permit applications*) _____

§4.9 Shakedown Procedures (*not required for Title V Operating Permit applications*)

Describe any shakedown procedures that are expected to affect emissions, including the duration of the shakedown period:

None

§4.10 Continuous Emission Monitoring System (CEMS) – *check all that apply:*

☐ Opacity – Make _____ Model _____ Year _____

Automatic Calibration Valve: Zero _____ Span _____

☐ TRS – Make _____ Model _____ Year _____

Automatic Calibration Valve: Zero _____ Span _____

☐ NO_x - Make _____ Model _____ Year _____

Automatic Calibration Valve: Zero _____ Span _____

☐ CO – Make _____ Model _____ Year _____

Automatic Calibration Valve: Zero _____ Span _____

☐ O_2 – Make _____ Model _____ Year _____

Automatic Calibration Valve: Zero _____ Span _____

☐ CO_2 – Make _____ Model _____ Year _____

Automatic Calibration Valve: Zero _____ Span _____

☒ Other (*specify*): Temperature Sensor

Make Omega Model NB2-CXSS-14U-4 Year _____

Automatic Calibration Valve: Zero _____ Span _____

§4.11 Emissions Control Analysis (*not required for Title V Operating permit applications*)

Best Available Control Technology (BACT) is required for all sources obtaining a MAQP. The BACT analysis should be conducted separately for each pollutant emitted from each emitting unit. Control costs (cost per ton of air pollutant controlled) should be calculated for each option. Options may then be eliminated for economic, energy or environmental reasons. The control option that is selected should have controls or control costs similar to other recently permitted similar sources and should be capable of achieving appropriate emission standards. If necessary, a separate start-up/shut-down BACT analyses should be conducted.

Lowest Achievable Emission Rate (LAER) is required for major stationary sources and major modifications located in a nonattainment area. LAER is also required for major stationary sources or major modifications located in an area designated as attainment or unclassified under 40 CFR 81.327, but would cause or contribute to a violation of the National Ambient Air Quality Standards (NAAQS) in a nearby nonattainment area. The LAER analysis shall demonstrate that the emission rate proposed is equivalent to the most stringent emission rate achievable or contained in any state implementation plan for a similar source.

Attach BACT/LAER Analysis Results, as applicable.

Applicable Requirement (*check all that apply*): ☒ BACT ☐ LAER

§4.12 Stack Height and Dispersion Technique Analysis (*not required for Title V Operating Permit applications*)

If applicable, supply a stack height and dispersion technique analysis demonstrating compliance with the requirements of the Stack Heights and Dispersion Technique Rule (ARM 17.8, Subchapter 4)

§ 5.0 Project and Site Information

Note: This section is not required to be completed for Title V Operating Permit applications.

Identify the landowner of the proposed project site and the current land use (industrial, agricultural, residential, etc.):
City of Bozeman

Indicate the approximate distance to the nearest home and/or structure not associated with the proposed project site:
The landfill is located approximately 2 miles north of Bozeman.

Summarize the aesthetic character of the proposed project site and the surrounding community or neighborhood. Include a description of recreational opportunities and any unique cultures in the area that may be affected by the proposed project:
Rural

Describe the noise levels created by the proposed project:
None

Summarize other industrial activities at or near the site:
There is a green waste processing facility near the landfill.

List other permits and/or approvals which have been obtained or will be obtained for this project (including MPDES permits, open cut permit, hazardous waste permit, etc.):
Solid waste facility permit

Indicate the number of employees currently employed and the increase or decrease in the number of people employed at this site as a result of the proposed project:
Not Applicable

Describe any upgrades of utilities that may be necessary to meet the power demands for this proposed project:
Utility power is being upgraded from single phase to three phase.

Identify the amount of land that will be disturbed, in acres, as a result of this proposed project: 0

Identify any fish or wildlife habitat, animal or bird species, or any known migration or movement of animals at the project site:
None

Identify any plant species (including types of trees, shrubs, grasses, crops, and aquatic plants) at the proposed project site:
None

Describe any proposed discharges into surface water or onto the proposed project site:

None

Identify any potential impacts to wetlands and/or changes in the drainage patterns at the proposed project site:

None

Summarize the soils and geology of the project site. Include a description of any disruption, displacement, erosion, compaction, moisture loss, or over-covering of soil that would reduce the productivity or fertility of the soil at the site:

None

Summarize any access to recreational activities or wilderness areas near the proposed project site:

Just to the north of the landfill, the City maintains an open space with a path for dog walking

A thin strip of property with a walking path is also located just south of the property.

Describe any state, county, city, United States Forest Service (USFS), Bureau of Land Management (BLM), or tribal zoning or management plans and/or goals that might affect the site:

The property is located within the Bozeman City Limits and is zoned for use as a municipal landfill.

§ 6.0 Instructions on Public Notice For Montana Air Quality Permit

Note: This section is not required to be completed for Title V Operating Permit applications.

The applicant shall publish the following notification no earlier than 10 days prior to the date the applicant's MAQP application will be submitted to the Department, and no later than 10 days following the date of submittal. The notice shall be published **once** in the legal notice section of a newspaper of general circulation in the area affected. (*Note: MAQP applications for solid waste incinerators, subject to 75-10-221, Montana Code Annotated (MCA), or hazardous waste incinerators or boilers or industrial furnaces, subject to 75-10-406, MCA, must publish **three** public notices, each on separate days, in the legal notice section of a newspaper in the county in which the source is proposed be located.*) Any fees associated with publication of this notice are the responsibility of the permit applicant. Questions regarding an appropriate newspaper should be addressed to the Department.

An Affidavit of Publication of Public Notice must be submitted with the application or the permit application will be deemed incomplete. This notice is required by the air quality rules. **The notice to be published must contain all text, excluding the text in italics, within the box below.**

Public Notice

Notice of Application for a Montana Air Quality Permit (MAQP), pursuant to Sections 75-2-211 and 75-2-215, MCA, and the Air Quality Rules). City of Bozeman,

Name of Applicant(s)

will file on or about May 20, 2015 an application for a MAQP or a modification to an

has filed / will file *Date*

existing MAQP from the Montana Department of Environmental Quality. Applicant(s) seeks approval of its application for:

Replacing an existing landfill gas candlestick flare with a new ground mounted landfill gas flare

(Brief description of source for which permit is being applied, and a narrative description of the site location such as nearby towns, roads, landmarks, etc.)

The legal description of the site is: Section 30, Township 1S, Range 6E in Gallatin County, Montana.

Within 40 days of the receipt of a completed application, the Department will make a preliminary determination whether the permit should be issued, issued with conditions, or denied. Any member of the public with questions or who wishes to receive notice of the preliminary determination, and the location where a copy of the application and the Department's analysis of it can be reviewed, or to submit comments on the preliminary determination, must contact the Department at Department of Environmental Quality, Air Resources Management Bureau, Air Permitting Section Supervisor at P.O. Box 200901, Helena, MT 59620-0901, telephone (406) 444-3490. Any comments on the preliminary determination must be submitted to the Department within the specified timeframe (within15 or 30 days after the preliminary determination is issued).

§ 7.0 Applicable Requirements

§7.1 Applicable Requirements

Attach a complete listing and description of all applicable air pollution control requirements, including rules and regulations which have been promulgated at the time of the submittal of the application, but which will become effective at a later date. Explain any proposed exemptions from otherwise applicable requirements. Describe or reference any applicable test methods for determining compliance with each applicable requirement.

§7.2 Additional Requirements

Additional requirements may apply. A description of the requirements listed below is included in the Section 7.2 Supplement included on page 18 of this application. **Note which of the following requirements apply to this permit application** (*check each that applies*):

☐ Ambient Air Quality Impact Analysis

☐ Alternative Siting Analysis

☐ Alternative Operating Scenario

☐ Compliance Schedule/Plan

☐ Compliance Certification

☐ Additional Requirements for solid or hazardous waste incinerators or BIFS subject to 75-10-406, MCA

☐ Additional Requirements for Commercial Medical and Commercial Hazardous Waste Incinerators, including BIFS Subject to 75-10-406, MCA

§ 8.0 Certification of Truth, Accuracy, and Completeness

I hereby certify that, to the best of my knowledge, information and belief, formed after reasonable inquiry, the information provided in this permit application is true, accurate, and complete.

(Name, title and signature of corporate officer, responsible official, authorized representative, or designated representative under Title IV 1990 FCAA.)

Name Craig Woolard, Ph.D., P.E.
(Print or Type)

Title Public Works Director Phone 582-2273 Email: cwoolard@bozeman.net

Signature _____ Date _____
(Original Signature Required)

APPLICATION CHECKLIST

The information contained in the checklist below must be submitted in order for the application to be considered complete. Additional information may be required by the Department. Please contact the Department if there are any questions or if the applicant would like a pre-application meeting with Department personnel.

_____ Completed Application Form
_____ Application Fee
_____ Site Map (Not required for Title V Operating Permit applications)
_____ Process Flow Diagram (Not required for Title V Operating Permit applications)
_____ Emission Inventory Calculations
_____ BACT/LAER Analysis (Not required for Title V Operating Permit applications)
_____ Stack Height and Dispersion Techniques Analysis (if applicable, not required for Title V Operating Permit applications)
_____ Modeling/Risk Assessment Analysis (if applicable, not required for Title V Operating Permit applications)
_____ List of Applicable Requirements
_____ Affidavit of Public Notice (Not required for Title V Operating permit applications)
_____ Certification of Truth, Accuracy, and Completeness – Original Signature (if application form is submitted electronically)

Supplement to Section 7.2 Additional Requirements

- **Ambient Air Quality Impact Analysis** (Not required for Title V Operating Permit applications)

  An ambient air quality impact analysis should include the following:

  1. Existing Air Quality Status – a narrative description of the existing air quality status and copies of any existing air monitoring data reports or dispersion modeling.
  2. Ambient Air Quality Monitoring Requirements – a listing and description of all applicable state or federal ambient air quality monitoring requirements and a detailed description of any proposed ambient air monitoring.
  3. Ambient Air Quality Dispersion Modeling – a description and results of all required ambient air quality dispersion modeling.
  4. Air Quality Related Values Analysis – an analysis of the impairment to visibility, soils, and vegetation that would occur as a result of the source or modification and general commercial, residential, industrial, and other growth associated with the source or modification. (Only required for PSD permit applications.)
  5. Visibility Analysis – a demonstration that emissions from the source will not cause or contribute to an adverse impact on visibility within a federal Class 1 area and that the source is in compliance with the requirements of the Visibility Impact Assessment rules. (Only required for PSD permit applications.)
  6. PSD Increment Analysis – a demonstration of compliance with PSD ambient air increments. (Only required for PSD permit applications.)

- **Alternative Siting Analysis** (Not required for Title V Operating Permit applications.)

  An analysis of alternative sites, sizes, production processes, and environmental control techniques for the proposed source which demonstrates that benefits of the proposed source significantly outweigh the environmental and social costs imposed as a result of its location, construction or modification. This analysis is only required for major stationary sources and major modifications located in a nonattainment area, or for major stationary sources or major modifications located in an area designated as attainment or unclassified under 40 CFR 81.327, but would cause or contribute to a violations of NAAQS in a nearby nonattainment area (i.e., for

those sources required to obtain an MAQP and comply with the requirements of subchapters 9 and 10 of the air quality rules).

- **Alternative Operating Scenarios** (Not required for MAQP applications)

  Sufficient information, as necessary, to define any reasonably anticipated alternative operating scenarios included in the Title V Operating Permit, including location, process, regulatory, and emission data.

- **Compliance Schedule/Plan** (Not required for MAQP applications. Only required for Title V Operating Permit applications for sources already operating.)

  The Compliance Schedule/Plan must include, at a minimum, a description of the compliance status of the source with respect to all applicable requirements, as follows:

  a. For applicable requirements that the source is currently in compliance with, a description of how compliance will be maintained, including a statement that the source will continue to comply with applicable requirements with which it is in compliance;

  b. For applicable requirements that will become effective during the permit term, a statement that the source will (in a timely manner) comply with all applicable requirements that become effective during the permit term, including rules and regulations which have been promulgated at the time of the submittal of the application, but which will become effective at a later date, and a schedule for complying with the applicable requirements; and

  c. For applicable requirements that the source is not currently in compliance with, a narrative description of how the source will (in a timely manner) achieve compliance with all applicable requirements with which the source is not currently in compliance. The compliance schedule shall also include a schedule of measures, including an enforceable sequence of actions with milestones, leading to compliance with all requirements. The compliance schedule shall resemble and be at least as stringent as that contained in any judicial consent decree or administrative order to which the source is subject. The schedule for submission of certified progress reports shall be no less frequent than once very six months.

The Compliance Schedule content requirements apply to Title IV (acid rain) sources, except as specifically superseded by 40 CFR Part 72 with regard to the schedule and the methods the source will use to achieve compliance with the acid rain emission limitations.

- **Compliance Certification**

  The following certifications must be submitted:

  1. Certification of compliance with all applicable requirements signed by a responsible official; except, in the case of an affected source under the acid rain program, the designated representative of the source shall make this certification. (Not required for MAQP applications.)
  2. A statement of methods used for determining compliance, including a description of the monitoring, recordkeeping, reporting requirements, and test methods. (Not required for MAQP applications. Only required for Title V Operating Permit applications for sources already operating).
  3. A proposed schedule for submitting compliance certifications that is no less than annually during the permit term. (Not required for MAQP applications. Only required for Title V Operating Permit applications for sources already operating).
  4. Certification that all sources owned by the applicant are in compliance with all applicable rules and regulations. (Not required for Title V Operating Permit applications. Only required for PSD permit applications).

- **Additional Requirements for Solid and Hazardous Waste Incinerators or BIFs Subject to 75-10-406, MCA** (Not required for Title V Operating Permit applications. Only required for MAQP applications for Solid or Hazardous Waste Incinerators or Boilers and Industrial Furnaces (BIFs) subject to 75-10-406, MCA.)

  The following information must be submitted:

  1. A health risk assessment showing that the projected emissions and ambient concentrations will constitute a negligible risk to the public health, safety, and welfare and to the environment. That health risk assessment will include evaluation of cumulative risk both to the human health and the environment through all known exposure pathways.
  2. A BACT analysis for all air pollutants, including hazardous air pollutants (HAPs).

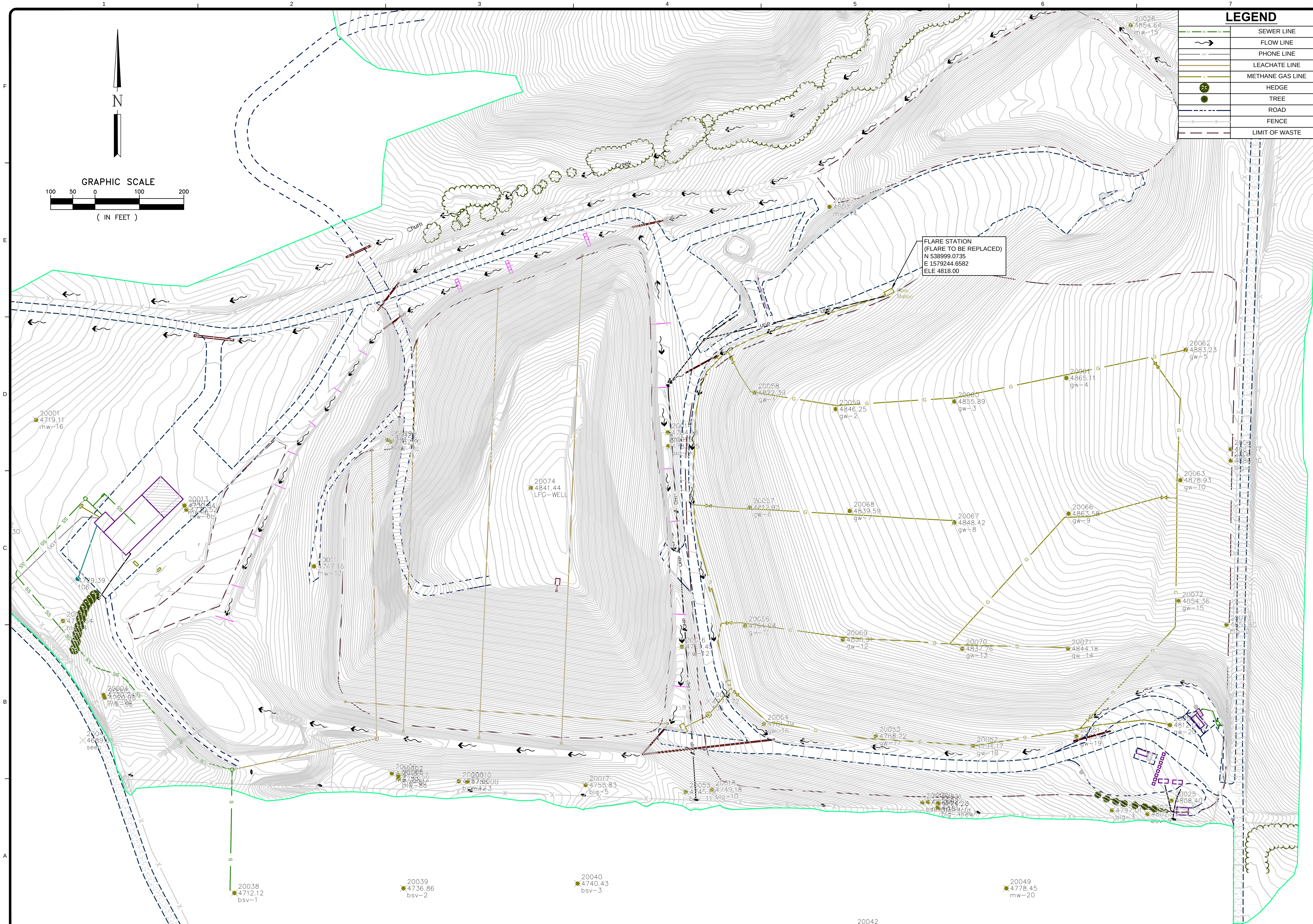
3. Three public notices, the form for which is included with the application form, must be published in a newspaper of general circulation in the county where the source is to be located (Section 6 of the permit applications).
4. Ambient air quality impact analysis that describes the ambient impact of all air pollutants including HAPs.

- **Additional requirements for Commercial Medial and Commercial Hazardous Waste Incinerators, Including BIFs Subject to 75-10-406 MCA** (Not required for Title V Operating Permit applications.)

  The following information must be submitted:

  1. A complete description of all the types, amounts, and sources of chlorinated plastics and other materials included in the waste stream that may be a source of, or lead to the creation of chlorinated dioxins, furans, heavy metals, or carcinogens.
  2. A LAER analysis, unless BACT is adequate to prevent exceedance of the applicable federal standards.
  3. A listing and demonstration of compliance with the applicable federal standards.
  4. Compliance disclosure statement containing the following information:
     a. The name, business address, and social security number of the applicant and each principal.
     b. A description of any civil or administrative complaint filed within the five years prior to the submittal of the application against the applicant or any principal for violation of an environmental protection law in Montana and whether the complaint resulted in a civil or administrative penalty.
     c. A description of all judgments of criminal conviction entered against the applicant, or any principal, for the violation of an environmental protection law in another state the five years prior to the submittal of the application that resulted from the operation of a BIF that, if located in Montana, would be subject to the requirements of 75-10-406, MCA.

Section 1.4 Document(s)


LEGEND
SEWER LINE
FLOW LINE
PHONE LINE
LEACHATE LINE
METHANE GAS LINE
HEDGE
TREE
ROAD
FENCE
LIMIT OF WASTE
GRAPHIC SCALE
100 50 0 100 200
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N
FLARE STATION
(FLARE TO BE REPLACED)
N 538999.0735
E 1579244.6582
ELE 4818.00
20001 4719.11 mw-16
20074 4841.44 LFG-WELL
20058 4822.39 gw-1
20059 4846.25 gw-2
20060 4835.89 gw-3
20061 4865.11 gw-4
20062 4883.23 gw-5
20063 4878.93 gw-10
20066 4863.58 gw-9
20067 4848.42 gw-8
20068 4839.59 gw-7
20072 4854.36 gw-15
20070 4837.76 gw-13
20071 4844.18 gw-14
20053 4788.22 gw-17
20052 4794.17 gw-18
20017 4755.83 blg-5
20028 4854.64 mw-15
20038 4712.12 bsv-1
20039 4736.86 bsv-2
20040 4740.43 bsv-3
20049 4778.45 mw-20
20042 4769.28

TETRA TECH

www.tetratech.com
851 BRIDGER DRIVE, SUITE 6
Bozeman, Montana 59715
PHONE: (406) 582-8780 FAX: (406) 582-8790

MARK	DATE	DESCRIPTION	BY
	04-2015	FINAL DESIGN SUBMITTAL - FOR BID & CONSTRUCTION	

BOZEMAN LANDFILL

AIR PERMIT
SITE DIAGRAM

Project No.:	XXX-XXXXX
Designed By:	
Drawn By:	JFK
Checked By:	KAJ

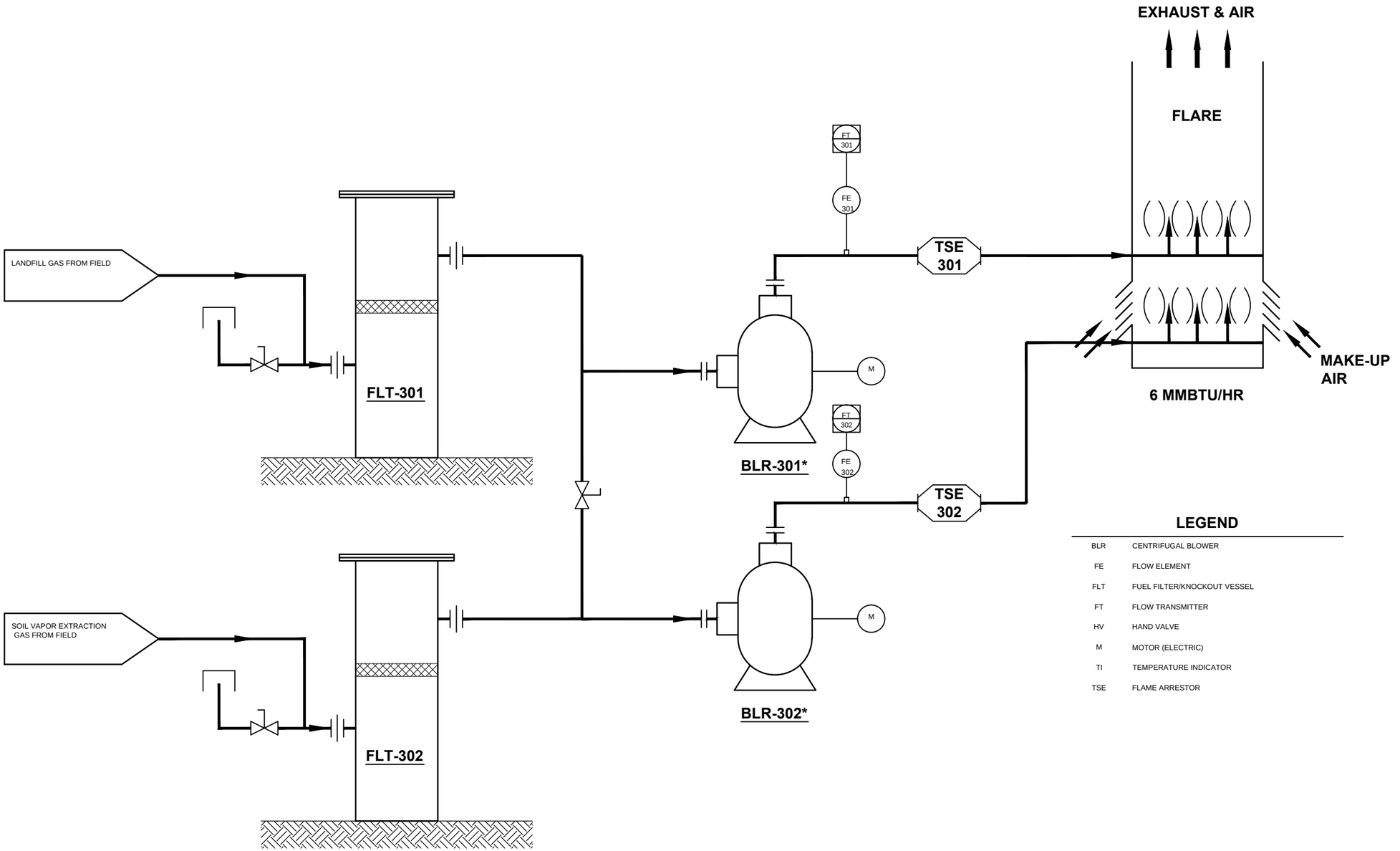
5/15/2015 12:10:21 PM - F:\DATA\CLIENTS\TETRATECH\BOZEMAN\AIR PERMIT\CAD\SITE MAP.DWG - KONECNY, JOHN

Section 1.5 Document(s)

Project Summary

Two modifications to the existing air permit #2951-04 are being proposed. The first proposed modification is to substitute a new enclosed flare for the current open utility flare. This proposed modification will enable landfill gas to be more dependably and efficiently destroyed. The second proposed modification is to add the soil vapor extraction system gas stream to the flare to be used as combustion air. Additional combustion air will be provided through an automated louver in order to control the combustion temperature of the flare. A minimum combustion temperature of 1,400°F will be maintained inside the flare at all times. The new flare shall meet the requirements listed in 40CFR§60.18(b), 40CFR§60.752(b)(2)(iii)(B), and 40CFR§60.756.

This application also serves the required notification to the Department that there will be a change in the control equipment, stack height, stack diameter, and stack location. This change will not result in an increase is source capacity and will result in a reduction in overall site emissions.



LEGEND

BLR	CENTRIFUGAL BLOWER
FE	FLOW ELEMENT
FLT	FUEL FILTER/KNOCKOUT VESSEL
FT	FLOW TRANSMITTER
HV	HAND VALVE
M	MOTOR (ELECTRIC)
TI	TEMPERATURE INDICATOR
TSE	FLAME ARRESTOR

*OPEN TO USE BLR-302 AS BACK-UP BLOWER FOR LFG SYSTEM

FOR PERMITTING PURPOSES ONLY

TETRA TECH
www.tetratech.com
851 BRIDGER DRIVE, SUITE 6
Bozeman, Montana 59715
PHONE: (406) 582-8780 FAX: (406) 582-8790

MARK	DATE	DESCRIPTION	BY
04-2015	FINAL DESIGN SUBMITTAL - FOR BID & CONSTRUCTION		

BOZEMAN LANDFILL
AIR PERMIT
FLOW DIAGRAM

Project No.:	XXX-XXXXX
Designed By:	
Drawn By:	JFK
Checked By:	KAJ

Section 3.0 Document(s)

Air Permit Mass Flow Rate

Flow Rate 1[6]	168	scfm	8.19E-02	Nm3/s				
Flow Rate 2	258	scfm	1.26E-01	Nm3/s				
Heat Flow Rate 1[5]	3.90	MMBtu/hr	4.11	GJ/hr				
Heat Flow Rate 2[5]	6.00	MMBtu/hr	6.33	GJ/hr				
Heat Content	387	BTU/ft^3	1.44E+04	kJ/m^3				
Standard Pressure	1	atm	14.70	psi	101,325	Pa		
Standard Temperature (English)	60	°F	15.56	°C	519.67	°R	288.71	K
Standard Temperature (Metric)	77	°F	25.00	°C	536.67	°R	298.15	K
Destruction Efficiency[3]	99%							
Methane Gas in Landfill Gas[6]	39.0%							

Pollutants	Inlet Concentration	Emission Factor		Molar Mass		Outlet Mass Flow Rate (@ 168 scfm)			Outlet Mass Flow Rate (@ 258 scfm)		
	ppmv	lbs/MMBtu	lbs/hr/dscfm	lbs/lb-mol	kg/kg-mol	lbs/hr	kg/hr	tons/yr	lbs/hr	kg/hr	tons/yr
PM[7]			1.018E-03			6.67E-02	3.03E-02	2.92E-01	1.03E-01	4.65E-02	4.49E-01
PM_{10}[8]						6.67E-02	3.03E-02	2.92E-01	1.03E-01	4.65E-02	4.49E-01
$PM_{2.5}$						0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
SO_2[2]	1.71			64.17	64.17	2.91E-05	1.32E-05	1.28E-04	4.48E-05	2.03E-05	1.96E-04
NO_x[3]		0.06				2.34E-01	1.06E-01	1.02E+00	3.60E-01	1.63E-01	1.58E+00
CO[3]		0.2				7.80E-01	3.54E-01	3.42E+00	1.20E+00	5.44E-01	5.26E+00
NMOC[1]	789			16.04	16.04	3.36E-03	1.52E-03	1.47E-02	5.17E-03	2.35E-03	2.27E-02
VOC[4]	308			16.04	16.04	1.31E-03	5.95E-04	5.74E-03	2.02E-03	9.15E-04	8.83E-03
HAP's[1]											
Benzene	130			78.11	78.11	2.70E-06	1.22E-06	1.18E-05	4.15E-06	1.88E-06	1.82E-05
Ethyl Benzene	9.9			106.17	106.17	2.79E-07	1.27E-07	1.22E-06	4.30E-07	1.95E-07	1.88E-06
Methylene Chloride	810			50.49	50.49	1.09E-05	4.93E-06	4.76E-05	1.67E-05	7.58E-06	7.32E-05
Vinyl Chloride	7900			62.498	62.498	1.31E-04	5.95E-05	5.74E-04	2.02E-04	9.15E-05	8.84E-04
Methyl Bromide	ND			94.94	94.94	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Ethyl Chloride	400			64.51	64.51	6.85E-06	3.11E-06	3.00E-05	1.05E-05	4.78E-06	4.62E-05
Styrene	ND			104.15	104.15	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Toluene	270			92.14	92.14	6.61E-06	3.00E-06	2.89E-05	1.02E-05	4.61E-06	4.45E-05
Xylenes	20.7			106.16	106.16	5.84E-07	2.65E-07	2.56E-06	8.98E-07	4.07E-07	3.93E-06
Chloroform	ND			1.49	1.49	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Carbon Tetrachloride	ND			153.82	153.82	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Trichloroethene	72			131.4	131.4	2.51E-06	1.14E-06	1.10E-05	3.87E-06	1.75E-06	1.69E-05
1,1,2-Trichloroethane	ND			133.4	133.4	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Perchloroethene	8			165.83	165.83	3.52E-07	1.60E-07	1.54E-06	5.42E-07	2.46E-07	2.37E-06
Chlorobenzene	ND			112.56	112.56	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
1,1,2,2-Tetrachloroethane	ND			167.848	167.848	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
p-Dichlorobenzene	ND			147	147	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Benzyl Chloride	ND			126.58	126.58	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
1,2,4-Trichlorobenzene	ND			181.45	181.45	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Hexachlorobutadiene	ND			260.76	260.76	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Carbon Disulfide	27			76.139	76.139	5.46E-07	2.48E-07	2.39E-06	8.40E-07	3.81E-07	3.68E-06
Total HAP's						1.62E-04	7.37E-05	7.12E-04	2.50E-04	1.13E-04	1.09E-03

Example Calculations
(Mass Flow Rate)=((Outlet Concentration)*(Standard Pressure)*(Standard Volume)*(Molar Mass))/((Gas Constant)*(Standard Temperature))*(1-(Destruction Efficiency))
(2.70E-06 lbs/hr)=((130.00 ppbv)*(14.70 psi)*(168 scfm)*(78.11 lbs/lb-mol))/((10.73159 (ft3*psi)/(R*lb-mol)*(519.67 R))*(1-0.99)*(60 min/1 hr)
(Outlet Mass Flow Rate)=(Emission Factor)*(Heat Flow)
(2.34E-01 lbs/hr)=(0.06 lbs/MMBtu)*(3.90 MMBtu/hr)
(Outlet Mass Flow Rate)=(Methane Gas in Landfill Gas)*(Flow Rate)*(Emission Factor)
(6.67E-02 lbs/hr)=(39.0%)*(168 scfm)*(0.001 lbs/hr/dscfm)

Notes
1. Per 11-25-2014 on-site data.
2. Per 10-1-2003 Landfill Gas Analysis. Volume concentration of hydrogen sulfide assumed to be equal to sulfur oxide.
3. Per Perennial Energy guaranteed performance specifications.
4. VOC=0.39*NMOC per AP-42 Table 2.4-2 footnote c.
5. Maximum allowable heat flow per Perennial Energy guaranteed performance specifications.
6. Per story mill road landfill basis of design report.
7. Per AP-42 Table 2.4-5.
8. Assume mass flow rate of PM is equal to PM_{10}.

Key

User Input

5. The Bozeman Landfill shall treat all unpaved portions of the haul roads, access roads, and the general plant area with water and/or chemical dust suppressant as necessary to maintain compliance with the reasonable precautions limitation in Section II.A.4 (ARM 17.8.752).

6. The Bozeman Landfill shall install and continuously operate a thermocouple with high and low set points interlocked with the blower, to shut down the blower if thermocouple temperature falls outside the set points (ARM 17.8.749).

7. The Bozeman Landfill shall install and continuously operate a flowmeter and hour-meter, or any other equivalent device, on the flare system to determine the total flow of landfill gas to the flare (ARM 17.8.749).

LFG removed is at or within 200 standard cubic ft/day of the 1.01 million cubic ft/day extractive flow limitation

8. The total volume of landfill gas sent to the flare shall not exceed 1.01×10^6 standard cubic feet per day (ARM 17.8.749). (Note: Standard conditions are 77°F and 1 atm pressure.)

9. The Bozeman Landfill shall comply with all applicable standards and limitations, and the reporting, recordkeeping, and notification requirements of 40 CFR Part 60, Subpart WWW, for the landfill (ARM 17.8.340).

B. Emission Limitations

1. Particulate emissions from the flare shall be limited to 0.10 grains per dry standard cubic foot (gr/dscf) corrected to 12% carbon dioxide (CO_2) (ARM 17.8.316).

2. The flare inlet concentrations shall be limited to the amounts contained in Table I (ARM 17.8.752 and MCA 75-2-215).

Table I. Flare Inlet Concentration Limitations

Current (11/25/14) Concentrations

POLLUTANTS	FLARE INLET CONCENTRATION Parts per billion by volume (ppbv)	Current (11/25/14) Concentrations
Benzene	7,740	130
Ethyl Benzene	22,300	9.9
Methylene Chloride	43,000	810
Vinyl Chloride	70,300	7,900
Methyl Bromide	500	ND
Ethyl Chloride	15,300	400
Styrene	980	ND
Tolulene	51,560	270
Xylenes	46,600	20.7
Chloroform	204	ND
Carbon Tetrachloride	100	ND
Trichloroethene	19,400	72
1,1,2-Trichloroethane	300	ND
Perchloroethene	28,700	8
Chlorobenzene	799	ND
1,1,2,2-Tetrachloroethane	200	ND
p-Dichlorobenzene	3,190	ND
Benzyl Chloride	200	ND
1,2,4-Trichlorobenzene	200	ND
Hexachlorobutadiene	50	ND
Carbon Disulfide	590	27

ND = Not detected

MAXIM
TECHNOLOGIES INC®
A TETRA TECH COMPANY

303 Irene Street
Helena, Montana 59601
P.O. Box 4699
Helena, Montana 59604

(406)443-5210
Fax: (406)449-3729

October 14, 2003

Mr. David Klemp
Montana Department of Environmental Quality
Air Quality Division
P.O. Box 200901
Helena, Montana 59620-0901

RE: September 2003 Landfill Gas Analytical Results -- Bozeman Sanitary Landfill

Dear Mr. Klemp:

Enclosed are copies of analytical results of the landfill gas sample collected at the Bozeman Landfill during September 2003. The gas sample was collected and analyzed to comply with conditions of the City of Bozeman's air quality permit (Permit No. 2951-03) to operate the flare system at the City of Bozeman Landfill. Concentrations of all analytes were below emission limitations listed in the air quality permit. Please give me a call if you have any questions and have a good day!

Kind Regards,

Chris Cronin
Project Manager

enclosures

cc w/enclosures: Mark Kottwitz/City of Bozeman
Richard Hixson/City of Bozeman

AtmAA Inc.
23917 Craftsman Rd., Calabasas, CA 91302 • (818) 223-3277 • FAX (818) 223-8250
environmental consultants
laboratory services

October 1, 2003

LTR/524/03

Scott Colvin
Maxim Technologies
P.O. Box 4699
303 Irene St.
Helena, MT 59601

re: Bozeman City Landfill

Dear Scott:

Please find enclosed the laboratory analysis report, quality assurance summary, and the original chain of custody form for one Tedlar bag sample received September 26, 2003.

The one Tedlar bag sample was analyzed for the selected components as indicated on the chain of custody.

Sincerely,

AtmAA, Inc.

Michael L. Porter
Laboratory Director

Encl.
MLP/bwf

AtmAA Inc.
23917 Craftsman Rd., Calabasas, CA 91302 • (818) 223-3277 • FAX (818) 223-8250

environmental consultants
laboratory services

LABORATORY ANALYSIS REPORT

Selected Component Analysis in Landfill Gas Tedlar Bag Sample

Report Date: October 1, 2003
Client: Maxim Technologies
Project Name: Bozeman City Landfill
Project Location: Bozeman, MT
Date Received: September 26, 2003
Date Analyzed: September 26, 2003

	AtmAA Lab No.:	02693-4
	Sample ID:	Flare Station
Components		*(Concentations in ppmv)*
Hydrogen sulfide		1.71
Carbon disulfide		0.088
		(Concentations in ppbv)
Vinyl chloride		7750
Methyl bromide		<30
Ethyl chloride		1090
Methylene chloride		4800
Chloroform		<20
Benzene		1170
Carbon tetrachloride		<30
Trichloroethene		1280
1,1,2-trichloroethane		<30
Toluene		13400
Perchloroethene		1480
Chlorobenzene		<30
Ethylbenzene		2180
m+p-xylenes		5560
Styrene		71.0
1,1,2,2-tetrachloroethane		<30
o-xylene		630
p-dichlorobenzene		21.8
Benzylchloride		<50
1,2,4-trichlorobenzene		<40
Hexachlorobutadiene		<30

Michael L. Porter
Laboratory Director

QUALITY ASSURANCE SUMMARY
(Repeat Analyses)

Project Name: Bozeman City Landfill
Date Received: September 26, 2003
Date Analyzed: September 26, 2003

Components	Sample ID	Repeat Analysis Run #1	Repeat Analysis Run #2	Mean Conc.	% Diff. From Mean
		(Concentration in ppmv)			
Hydrogen sulfide	Flare Station	1.65	1.77	1.71	3.5
Carbon disulfide	Flare Station	0.087	0.090	0.088	1.7
		(Concentration in ppbv)			
Vinyl chloride	Flare Station	7430	8070	7750	4.1
Methyl bromide	Flare Station	<30	<30	---	---
Ethyl chloride	Flare Station	1020	1160	1090	6.4
Methylene chloride	Flare Station	4860	4750	4800	1.1
Chloroform	Flare Station	<20	<20	---	---
Benzene	Flare Station	1160	1180	1170	0.85
Carbon tetrachloride	Flare Station	<30	<30	---	---
Trichloroethene	Flare Station	1280	1270	1280	0.39
1,1,2-trichloroethane	Flare Station	<30	<30	---	---
Toluene	Flare Station	13200	13600	13400	1.5
Perchloroethene	Flare Station	1470	1500	1480	1.0
Chlorobenzene	Flare Station	<30	<30	---	---
Ethylbenzene	Flare Station	2160	2210	2180	1.1
m + p-xylenes	Flare Station	5470	5660	5560	1.7
Styrene	Flare Station	71.2	70.8	71.0	0.28
1,1,2,2-tetrachloroethane	Flare Station	<30	<30	---	---
o-xylene	Flare Station	618	643	630	2.0
p-dichlorobenzene	Flare Station	21.8	21.8	21.8	0.0

QUALITY ASSURANCE SUMMARY

(Repeat Analyses)

(continued)

Components	Sample ID	Repeat Analysis Run #1	Repeat Analysis Run #2	Mean Conc.	% Diff. From Mean
		(Concentration in ppbv)			
Benzylchloride	Flare Station	<50	<50	---	---
1,2,4-trichlorobenzene	Flare Station	<40	<40	---	---
Hexachlorobutadiene	Flare Station	<30	<30	---	---

One Tedlar bag sample, laboratory number 02693-4, was analyzed for selected components. Agreement between repeat analyses is a measure of precision and is shown above in the column "% Difference from Mean". Repeat analyses are an important part of AtmAA's quality assurance program. The average % Difference from Mean for 14 repeat measurements from the one Tedlar bag sample is 1.8%.

CHAIN OF CUSTODY RECORD

Client/Project Name: CITY OF BOZEMAN LANDFILL	Project Location: BOZEMAN, MT
Project No.	Field Logbook No.
Sampler: (Signature) Scott Colvin	Chain of Custody Tape No.

ANALYSES REQUESTED

Sample No./ Identification	Type of Sample	AtmAA Lab Number	Sampling Date	Sampling Time	SEE ENCLOSED PARAMETER LIST X	Special Remarks
FLARE STATION EXHAUST	AIR (TEDLAR BAG)	02693-4	9-25-03	1600	X	

Relinquished by: (Signature) Scott Colvin	Date 9/25/03	Time 1700	Received by: (Signature) Fed Ex	Date	Time
Relinquished by: (Signature)	Date	Time	Received by: (Signature)	Date	Time
Relinquished by: (Signature)	Date	Time	Received for Laboratory by: (Signature)	Date	Time

Sample Collector Info

Company: MAXIM TECH
Street Address: P.O. BOX 4699
City/State/Zip: HELENA, MT 59604
Telephone No.: 406-443-5210
Fax No.: 406-449-3729

Analytical Laboratory

AtmAA Inc.
23917 Craftsman Rd.
Calabasas, CA 91302
TEL: (818) 223-3277
FAX: (818) 223-8250

April 13th, 2015

Re: *New PEI* Enclosed Landfill Gas Flare – Guaranteed Performance Specifications

The following is a synopsis of the guaranteed emissions levels and destruction efficiencies of the ***PEI*** enclosed landfill gas flare proposed for your **Bozeman, MT** project. The emissions levels and destruction efficiencies stated herein are only guaranteed if testing is performed by an approved testing company with documented experience in emissions testing of low velocity landfill gas flare exhaust streams.

The flare is designed to combust from **30 to 130 SCFM** of landfill gas having a calorific density of between **200 Btu/ft^3** and **500 Btu/ft^3**, as long as the thermal loading rate is between **.9 MMBtu/hr** and **3.9 MMBtu/hr**. It will also destroy 500 SCFM of SVE gas at a rate up to an additional **2.1 MMBtu/hr. Flare Capacity 6 MMBtu/hr**

Operated within the above criteria, the ***PEI*** flare will emit no more than **0.06 lb/MMBtu NOx** (evaluated as NO_2). Such guarantee is based on CEMS testing performed by a approved testing company using chemiluminescence analytical techniques compliant with EPA method 7E, and when the following equation is used as the basis of the emission calculation;

lb/MMBtu NOx = (ppm NOx / $10^{\wedge 6}$) x (46 lb/lb-mole / 385.3 dscf/lb-mole) x Ff * x 20.9 / (20.9 - % Stack O_2)

Operated within the above criteria, the flare will emit no more than **0.20 lb/MMBtu CO**. Such guarantee is based on CEMS testing performed by an approved testing company using NDIR/GFC analytical techniques compliant with EPA method 10, and when the following equation is used as the basis of the emission calculation;

lb/MMBtu CO = (ppm CO / $10^{\wedge 6}$) x (28 lb/lb-mole / 385.3 dscf/lb-mole) x Ff * x 20.9 / (20.9 - % Stack O_2)

*** The Ff (fuel factor) shall be as determined by laboratory analysis or per EPA Method 19, Table 19-1**

Operated within the above criteria, the flare will provide NMOC destruction efficiency compliant with Subpart Cc, 60.33c, (c) (2), i.e. ". . .shall **reduce NMOC by 98 weight percent**, or;" (c) (3) of that same section, i.e. ". . . reduce the outlet NMOC concentration to **20 parts per million** as hexane by volume, dry basis at 3 percent oxygen, or less." Such guarantee is based on inlet flow rate measurement taken via pitot tube traverses performed in compliance with EPA method 2, and for **exhaust flow rates determined by a carbon balance equation evaluation**. Samples of the inlet and exhaust gases to provide methane and total gaseous non-methane organics constituencies shall be collected in summa canisters, and shall be laboratory evaluated using the TCA/FID analytical technique compliant with EPA method 25C. A GC/FID analyzer shall be employed during source testing for sampling exhaust gas during CEMS testing to provide an "on-line" indication and record of total volatile organic compounds (TVOC's). The calculation to determine the destruction efficiency shall be as follows;

(lb/hr NMOC's IN - lb/hr NMOC's OUT) / lb/hr NMOC's IN . . . where;

lb/hr NMOC's as hexane = (ppm as C_1 NMOC's / 6 / $10^{\wedge 6}$) x (86 lb/lb-mole / 385.3 dscf/lb-mole) x (dscf / hr)

or;

ppm NMOC's as hexane at 3% Oxygen = (ppm as C_1 NMOC's / 6) x (20.9 - 3) / (20.9 - % Stack O_2)

The system shall be capable of achieving a minimum of 99% DRE of Total Volatile Organic Compounds (VOC's) (Sum of methane and non-methane organics). Please note that oxidizing combustion systems (such as landfill gas flares) neither generate nor remove sulphur. Any H_2S entering the flare is oxidized to form SOx compounds, but on a molecular basis, sulphur in is equal to sulphur out.

Note also that mineral based particulates, such as wind blown dust or silica, can be entrained into the ambient cooling and quenching air or purge air streams and passed into the combustor. As non-combustible matter, they will be passed into the exhaust stream and will be measured as particulate emissions, but are not generated by the combustion process. PEI makes no guarantees regarding these particulates. Barring individual identification of the particulate matter, it shall be assumed that if the combustor is meeting the above destruction efficiencies, it is evidence that any particulates measured are ambient particles and not generated by the combustion process.

1375 County Road 8690 West Plains, MO 65775
Phone (417) 256-2002 Fax (417) 256-2801
www.PerennialEnergy.com PEI@PerennialEnergy.com

Table 2.4-2. DEFAULT CONCENTRATIONS OF BENZENE, NMOC, AND TOLUENE BASED ON WASTE DISPOSAL HISTORY[a]

(SCC 50100402, 50300603)

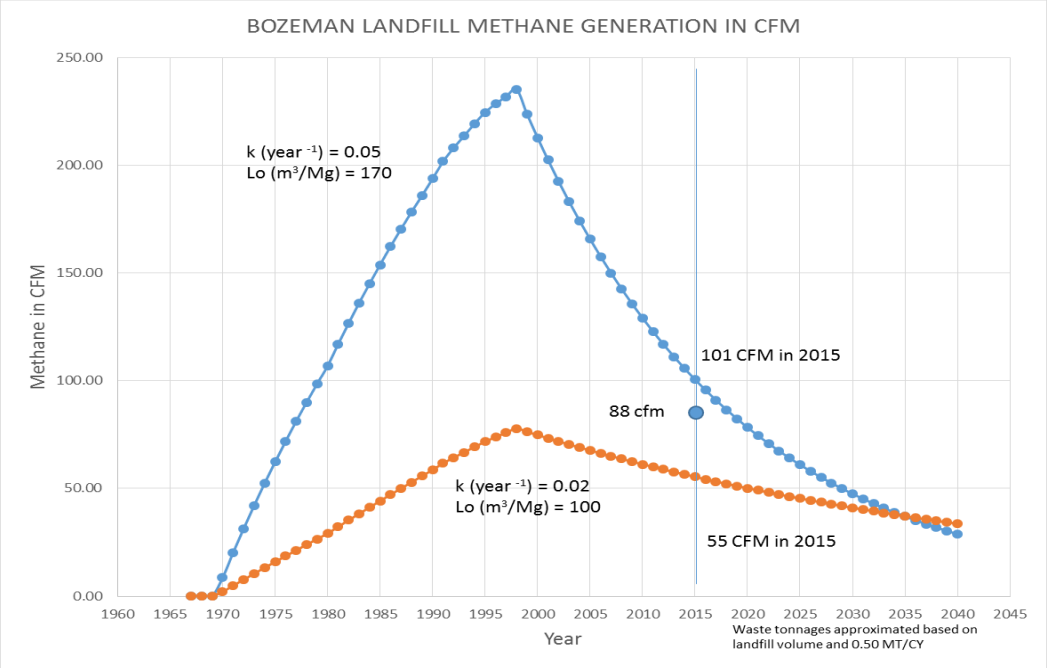
Pollutant	Molecular Weight	Default Concentration (ppmv)	Emission Factor Rating
Benzene[b]	78.11		
Co-disposal		11.1	D
No or Unknown co-disposal		1.91	B
NMOC (as hexane)[c]	86.18		
Co-disposal		2420	D
No or Unknown co-disposal		595	B
Toluene[b]	92.13		
Co-disposal		165	D
No or Unknown co-disposal		39.3	A

[a] References 10-54. Source Classification Codes in parentheses.

[b] Hazardous Air Pollutants listed in Title III of the 1990 Clean Air Act Amendments.

[c] For NSPS/Emission Guideline compliance purposes, the default concentration for NMOC as specified in the final rule must be used. For purposes not associated with NSPS/Emission Guideline compliance, the default VOC content at co-disposal sites = 85 percent by weight (2,060 ppmv as hexane); at No or Unknown sites = 39 percent by weight 235 ppmv as hexane).

Figure 2-1: Methane Modeling



2.2 Collection Efficiency

Not all of the landfill gas generated is collected. The EPA default value for collection efficiency is 75%. It is assumed that 100% of the gas generated within the area defined by each operating well's radius of influence is collected, in addition to the gas migrating from the interior of the landfill. The collection efficiency of a system typically decreases as the system ages and wells are lost due to condensate blockages, or are closed due to significantly decreased production.

Using 75% collection efficiency, and an average methane collection value of 66 cfm the methane generation value would be 66 cfm/0.75 = 88 cfm methane generated. This value is within the expected range of generation values (101 – 55 cfm methane).

2.3 Flare Station Sizing

Based on generation modeling and the current landfill gas being collected, the flare and process skid can be sized. The average landfill gas flow at the flare station is approximately 168 CFM and consisted of 39.0% methane, 33.0% carbon dioxide, 28.0%

Table 2.4-5. (English Units) EMISSION RATES FOR SECONDARY COMPOUNDS EXITING CONTROL DEVICES[a]

Control Device	Pollutant[b]	lb/10^6 dscf Methane	Emission Factor Rating
Flare[c]	Nitrogen dioxide	40	C
(50100410)	Carbon monoxide	750	C
(50300601)	Particulate matter	17	D
IC Engine	Nitrogen dioxide	250	D
(50100421)	Carbon monoxide	470	C
	Particulate matter	48	E
Boiler/Steam Turbine[d]	Nitrogen dioxide	33	E
(50100423)	Carbon monoxide	5.7	E
	Particulate matter	8.2	E
Gas Turbine	Nitrogen dioxide	87	D
(50100420)	Carbon monoxide	230	D
	Particulate matter	22	E

[a] Source Classification Codes in parentheses. Divide lb/10^6 dscf by 16,700 to obtain lb/hr/dscfm.
[b] Based on data for other combustion sources, most of the particulate matter will be less than 2.5 microns in diameter. Hence, this emission rate can be used to provide estimates of PM-10 or PM-2.5 emissions. See section 2.4.4.2 for methods to estimate CO_2, SO_2, and HCl.
[c] Where information on equipment was given in the reference, test data were taken from enclosed flares. Control efficiencies are assumed to be equally representative of open flares.
[d] All source tests were conducted on boilers, however emission factors should also be representative of steam turbines. Emission factors are representative of boilers equipped with low-NO_x burners and flue gas recirculation. No data were available for uncontrolled NO_x emissions.

References for Section 2.4

1. "Criteria for Municipal Solid Waste Landfills," 40 CFR Part 258, Volume 56, No. 196, October 9, 1991.

2. *Air Emissions from Municipal Solid Waste Landfills - Background Information for Proposed Standards and Guidelines*, Office of Air Quality Planning and Standards, EPA-450/3-90-011a, Chapters 3 and 4, U. S. Environmental Protection Agency, Research Triangle Park, NC, March 1991.

3. *Characterization of Municipal Solid Waste in the United States: 1992 Update*, Office of Solid Waste, EPA-530-R-92-019, U. S. Environmental Protection Agency, Washington, DC, NTIS No. PB92-207-166, July 1992.

4. Eastern Research Group, Inc., *List of Municipal Solid Waste Landfills*, Prepared for the U. S. Environmental Protection Agency, Office of Solid Waste, Municipal and Industrial Solid Waste Division, Washington, DC, September 1992.

5. *Suggested Control Measures for Landfill Gas Emissions*, State of California Air Resources Board, Stationary Source Division, Sacramento, CA, August 1990.

Section 4.11 Document(s)

Best Available Control Technology (BACT)

A RBLC database search was done to determine if the proposed flare is within the standards of BACT. It was found that all of the calculated emissions for the Perennial Energy Flare were below the emissions for the enclosed landfill flare on the RBLC database, therefore it can be concluded that the proposed flare is within the scope of BACT.

Current Permit Versus Proposed Permit Emission Rates

Pollutant	Current Permit Controlled Emission Rate (g/sec)	Proposed Permit Controlled Emission Rate (g/sec)	Current Permit Controlled Emission Rate (ton/yr)	Proposed Permit Controlled Emission Rate (ton/yr)	Current Permit Worst Case Emission Rate (g/sec)	Proposed Permit Worst Case Emission Rate (g/sec)	Current Permit Worst Case Emission Rate (ton/yr)	Proposed Permit Worst Case Emission Rate (ton/yr)
Benzene	1.66E-05	3.40E-07	5.78E-04	1.18E-05	1.66E-04	5.23E-07	5.78E-03	1.82E-05
Ethyl Benzene	6.50E-05	3.52E-08	2.26E-03	1.22E-06	6.50E-04	5.41E-08	2.26E-02	1.88E-06
Methylene Chloride	5.98E-06	1.37E-06	2.07E-04	4.76E-05	5.98E-05	2.11E-06	2.07E-03	7.32E-05
Vinyl Chloride	1.21E-04	1.65E-05	4.20E-03	5.74E-04	1.21E-03	2.54E-05	4.20E-02	8.84E-04
Methyl Bromide	1.31E-06	0.00E+00	4.54E-05	0.00E+00	1.31E-05	0.00E+00	4.54E-04	0.00E+00
Ethyl Chloride	2.67E-05	8.64E-07	9.28E-04	3.00E-05	2.67E-04	1.33E-06	9.28E-03	4.62E-05
Styrene	2.77E-06	0.00E+00	9.62E-05	0.00E+00	2.77E-05	0.00E+00	9.62E-04	0.00E+00
Toluene	1.28E-04	8.33E-07	4.46E-03	2.89E-05	1.28E-03	1.28E-06	4.46E-02	4.45E-05
Xylenes	1.36E-04	7.36E-08	4.73E-03	2.56E-06	1.36E-03	1.13E-07	4.73E-02	3.93E-06
Chloroform	6.70E-07	0.00E+00	2.33E-05	0.00E+00	6.70E-06	0.00E+00	2.33E-04	0.00E+00
Carbon Tetrachloride	4.23E-07	0.00E+00	1.47E-05	0.00E+00	4.23E-06	0.00E+00	1.47E-04	0.00E+00
Trichloroethene	7.02E-05	3.17E-07	2.44E-03	1.10E-05	7.02E-04	4.87E-07	2.44E-02	1.69E-05
1,1,2-Trichloroethane	1.39E-06	0.00E+00	4.82E-05	0.00E+00	1.39E-05	0.00E+00	4.82E-04	0.00E+00
Perchloroethene	1.31E-04	4.44E-08	4.55E-03	1.54E-06	1.31E-03	6.83E-08	4.55E-02	2.37E-06
Chlorobenzene	2.47E-06	0.00E+00	8.59E-05	0.00E+00	2.47E-05	0.00E+00	8.59E-04	0.00E+00
1,1,2,2-Tetrachloroethane	9.23E-07	0.00E+00	3.21E-05	0.00E+00	9.23E-06	0.00E+00	3.21E-04	0.00E+00
p-Dichlorobenzene	1.29E-05	0.00E+00	4.48E-04	0.00E+00	1.29E-04	0.00E+00	4.48E-03	0.00E+00
Benzyl Chloride	6.96E-07	0.00E+00	2.42E-05	0.00E+00	6.96E-06	0.00E+00	2.42E-04	0.00E+00
1,2,4-Trichlorobenzene	9.98E-07	0.00E+00	3.47E-05	0.00E+00	9.98E-06	0.00E+00	3.47E-04	0.00E+00
Hexachlorobutadiene	3.60E-07	0.00E+00	1.25E-05	0.00E+00	3.60E-06	0.00E+00	1.25E-04	0.00E+00
Carbon Disulfide	1.23E-03	6.88E-08	4.27E-02	2.39E-06	1.23E-02	1.06E-07	4.27E-01	3.68E-06

COMPREHENSIVE REPORT
Report Date:05/18/2015

Facility Information

RBLC ID:	ME-0038 (draft)	**Date Determination Last Updated:**	02/06/2014
Corporate/Company Name:	STATE OF MAINE AND NEWSME LANDFILL OPERATIONS, LLC	**Permit Number:**	A-921-77-2-A
Facility Name:	JUNIPER RIDGE LANDFILL	**Permit Date:**	11/26/2012 (actual)
Facility Contact:	JEREMY LABBE 207 862-4200 X233 JEREMY.LABBE@CASELLA.COM	**FRS Number:**	
Facility Description:	The facility is a solid waste landfill with an active gas collection and control system, a large utility flare, and two small back-up flares.	**SIC Code:**	
Permit Type:	C: Modify process at existing facility	**NAICS Code:**	562212
Permit URL:	http://www.maine.gov/dep/ftp/AIR/licenses/titlev/a9212a.pdf		
EPA Region:	1	**COUNTRY:**	USA
Facility County:	PENOBSCOT		
Facility State:	ME		
Facility ZIP Code:	04468-4214		
Permit Issued By:	MAINE DEPARTMENT OF ENV PROTECTION (Agency Name) MR. ERIC KENNEDY(Agency Contact) (207)287-5412 eric.kennedy@maine.gov		
Permit Notes:	Facility has a requirement to reduce TRS emissions to 1000ppm prior to the flare by June 15, 2015.		

Facility-wide Emissions:

Pollutant Name:	Facility-wide Emissions Increase:
Carbon Monoxide	172.6000 (Tons/Year)
Nitrogen Oxides (NOx)	31.7000 (Tons/Year)
Particulate Matter (PM)	7.9000 (Tons/Year)
Sulfur Oxides (SOx)	449.0000 (Tons/Year)
Volatile Organic Compounds (VOC)	40.0000 (Tons/Year)

Process/Pollutant Information

PROCESS NAME:	Landfill Gas Flare
Process Type:	19.320 (Digester and Landfill Gas Flares)
Primary Fuel:	Landfill Gas
Throughput:	106.50 MMBtu/hr

Process Notes:

POLLUTANT NAME: Particulate matter, filterable (FPM)

CAS Number: PM
Test Method: Unspecified
Pollutant Group(s): (Particulate Matter (PM))
Emission Limit 1: 1.8100 LB/HR
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: N
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (A) Flare
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

POLLUTANT NAME: Sulfur Dioxide (SO2)

CAS Number: 7446-09-5
Test Method: Unspecified
Pollutant Group(s): (InOrganic Compounds , Oxides of Sulfur (SOx))
Emission Limit 1: 157.0000 LB/HR
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: N
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (A) Required to install TRS controls prior to flare, which meet 1000ppm by June 1, 2015.
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

POLLUTANT NAME: Nitrogen Oxides (NOx)

CAS Number: 10102
Test Method: Unspecified
Pollutant Group(s): (InOrganic Compounds , Oxides of Nitrogen (NOx) , Particulate Matter (PM))
Emission Limit 1: 7.2400 LB/HR
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: U
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (A) Flare
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

POLLUTANT NAME: Carbon Monoxide

CAS Number: 630-08-0
Test Method: Unspecified
Pollutant Group(s): (InOrganic Compounds)
Emission Limit 1: 39.4100 LB/HR
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: U
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (A) Flare
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

POLLUTANT NAME: Volatile Organic Compounds (VOC)

CAS Number: VOC

Test Method: Unspecified

Pollutant Group(s): (Volatile Organic Compounds (VOC))

Emission Limit 1: 0.3200 LB/HR

Emission Limit 2:

Standard Emission:

Did factors, other then air pollution technology considerations influence the BACT decisions: U

Case-by-Case Basis: BACT-PSD

Other Applicable Requirements:

Control Method: (A) Flare

Est. % Efficiency:

Cost Effectiveness: 0 $/ton

Incremental Cost Effectiveness: 0 $/ton

Compliance Verified: Unknown

Pollutant/Compliance Notes:

Section 4.12 Document(s)

05/15/15
10:39:53

```
 ***  SCREEN3 MODEL RUN  ***
 *** VERSION DATED 13043 ***

Bozeman Landfill

SIMPLE TERRAIN INPUTS:
   SOURCE TYPE            =        FLARE
   EMISSION RATE (G/S)    =     1.000000
   FLARE STACK HEIGHT (M) =       7.3152
   TOT HEAT RLS (CAL/S)   =     0.164000E+07
   RECEPTOR HEIGHT (M)    =       1.0000
   URBAN/RURAL OPTION     =        RURAL
   EFF RELEASE HEIGHT (M) =      11.5777
   BUILDING HEIGHT (M)    =       0.0000
   MIN HORIZ BLDG DIM (M) =       0.0000
   MAX HORIZ BLDG DIM (M) =       0.0000

THE REGULATORY (DEFAULT) MIXING HEIGHT OPTION WAS SELECTED.
THE REGULATORY (DEFAULT) ANEMOMETER HEIGHT OF 10.0 METERS WAS ENTERED.


BUOY. FLUX =   27.192 M**4/S**3;  MOM. FLUX =   16.581 M**4/S**2.

*** FULL METEOROLOGY ***

**********************************
*** SCREEN DISCRETE DISTANCES ***
**********************************

*** TERRAIN HEIGHT OF    0. M ABOVE STACK BASE USED FOR FOLLOWING DISTANCES ***

  DIST     CONC             U10M   USTK  MIX HT   PLUME   SIGMA   SIGMA
   (M)   (UG/M**3)   STAB  (M/S)  (M/S)    (M)   HT (M)   Y (M)   Z (M)  DWASH
-------  ----------  ----  -----  -----  ------  ------  ------  ------  -----
   370.    11.15        4    20.0   20.4  6400.0   23.17   27.64   14.75    NO

 DWASH=   MEANS NO CALC MADE (CONC = 0.0)
 DWASH=NO MEANS NO BUILDING DOWNWASH USED
 DWASH=HS MEANS HUBER-SNYDER DOWNWASH USED
 DWASH=SS MEANS SCHULMAN-SCIRE DOWNWASH USED
 DWASH=NA MEANS DOWNWASH NOT APPLICABLE, X<3*LB

     ***************************************
     *** SUMMARY OF SCREEN MODEL RESULTS ***
     ***************************************

 CALCULATION        MAX CONC    DIST TO   TERRAIN
  PROCEDURE        (UG/M**3)    MAX (M)    HT (M)
--------------    -----------   ---------   -------
SIMPLE TERRAIN       11.15          370.        0.


**************************************************
** REMEMBER TO INCLUDE BACKGROUND CONCENTRATIONS **
**************************************************
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Section 5.0 Document(s)

Risk Assessment

A risk assessment is not applicable to this application because there is no change in the nature of the process and the new replacement flare will further reduce the potential to emit for the site.

Section 7.1 Document(s)

Applicable Requirements

A. ARM 17.8, Subchapter 1, General Provisions, including, but not limited to:
    a. ARM 17.8.101 Definitions. This rule is a list of applicable definitions used in this chapter unless indicated otherwise in a specific subchapter.
    b. 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. The Department has determined that semi-annual testing is necessary.
    c. 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).
    d. 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.
    e. ARM 17.8.111 Circumvention. (1) No person shall cause or permit the installation or use of any device or any means which, without resulting in reduction in 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 that a public nuisance is created.
B. ARM 17.8, Subchapter 2, Ambient Air Quality, including, but not limited to:
    a. ARM 17.8.210 Ambient Air Quality Standards for Sulfur Dioxide
    b. ARM 17.8.211 Ambient Air Quality Standards for Nitrogen Dioxide
    c. ARM 17.8.212 Ambient Air Quality Standards for Carbon Monoxide
    d. ARM 17.8.214 Ambient Air Quality Standard for Hydrogen Sulfide
    e. ARM 17.8.220 Ambient Air Quality Standard for Settled Particulate Matter
    f. ARM 17.8.223 Ambient Standards for PM_{10}
C. ARM 17.8, Subchapter 3, Emission Standards, including, but not limited to:
    a. 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.
    b. ARM 17.8.308 Particulate Matter, Airborne. (1) This rule requires an opacity limitation of 20% for all fugitive emission sources and that reasonable precautions be taken to control emissions of airborne particulate matter. (2) Under this rule, the Bozeman Landfill 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.
    c. 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. Also 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.

d. ARM 17.8.322 Sulfur Oxide Emissions--Sulfur in Fuel. Commencing July 1, 1971, no person shall burn any gaseous fuel containing sulfur compounds in excess of 50 grains per 100 cubic feet of gaseous fuel, calculated as hydrogen sulfide at standard conditions.
e. ARM 17.8.340 Standards of Performance for New Stationary Sources. 40 CFR Part 60, Subpart WWW, Standards of Performance for Municipal Solid Waste Landfills, does apply to the Bozeman Landfill because it was modified on or after May 30, 1991.

D. ARM 17.8, Subchapter 5, Air Quality Permit Application, Operation and Open Burning Fees, including, but not limited to:
   a. ARM 17.8.504 Air Quality Permit Application Fees. The Bozeman Landfill shall 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. The Bozeman Landfill was not required to submit an application fee for the current permit action.
   b. 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; and 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 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 pro-rate the required fee amount.

E. ARM 17.8, Subchapter 7, Permit, Construction and Operation of Air Contaminant Sources, including, but not limited to:
   a. ARM 17.8.740 Definitions. This rule is a list of applicable definitions used in this chapter, unless indicated otherwise in a specific subchapter.
   b. 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. The Bozeman Landfill has the PTE more than 25 tons per year of carbon monoxide (CO). In addition, an air quality permit must be obtained under the requirements of MCA 75-2-215; therefore, a permit is required.
   c. 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.

d. 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.
e. ARM 17.8.748 New or Modified Emitting Units – Permit Application Requirements. (1)This rule requires that an application for an air quality permit be submitted for a new or altered source or stack. The Bozeman Landfill was not required to submit an 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. The Bozeman Landfill was not required to submit a public notice for the current permit action because it is considered an administrative action.
f. 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.
g. 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.
h. 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 permitted source.
i. ARM 17.8.756 Compliance with Other Requirements. This rule states that nothing in the permit shall be construed as relieving the Bozeman Landfill 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.
j. 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.
k. 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.
l. ARM 17.8.763 Revocation of Permit. An air quality permit may 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).
m. 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.

n. 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:
   a. ARM 17.8.801 Definitions. This rule is a list of applicable definitions used in this subchapter.
   b. 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 Federal Clean Air Act (FCAA) that it would emit, except as this subchapter would otherwise allow. The Bozeman Landfill is not a PSD source since it is not a listed source and the site's potential to emit is below 250 tons per year of any pollutant.
   c. 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 Federal Clean Air Act (FCAA) that it would emit, except as this subchapter would otherwise allow. The Bozeman Landfill is not a PSD source since it is not a listed source and the site's potential to emit is below 250 tons per year of any pollutant.

G. MCA 75-2-103, Definitions provides in part as follows:
   a. "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.
   b. "Solid waste" means all putrescible and nonputrescible solid, semisolid, liquid, or gaseous wastes, including, but not limited to….air pollution control facilities….

H. MCA 75-2-215, Solid or hazardous waste incineration - additional permit requirements:
   a. MCA 75-2-215 requires air quality permits for all new solid waste incinerators. The Bozeman Landfill has obtained an air quality permit as required.
   b. 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 Department has determined that the information submitted by the Bozeman Landfill is sufficient to fulfill this requirement.

c. 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 submitted by the Bozeman Landfill. Based on the results of the emission inventory, modeling and health risk assessment, the Department determined that the Bozeman Landfill flare system is in compliance with this requirement.
d. MCA 75-2-215 requires the application of pollution control equipment or procedures that meet or exceed the BACT. The Department determined that the proposed flare system constitutes BACT.