

Statement of Basis

Tier I Operating Permit No. T1-2018.0002

Project ID 61984

Peterson Hill Landfill

Ammon, Idaho

Facility ID 019-00101

Final

April 26, 2018

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Permit Writer

The purpose of this Statement of Basis is to set forth the legal and factual basis for the Tier I operating permit terms and conditions, including references to the applicable statutory or regulatory provisions for the terms and conditions, as required by IDAPA 58.01.01.362

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1. ACRONYMS, UNITS, AND CHEMICAL NOMENCLATURE

acfm	actual cubic feet per minute
ASTM	American Society for Testing and Materials
BACT	Best Available Control Technology
BMP	best management practices
Btu	British thermal unit
CAA	Clean Air Act
CAM	Compliance Assurance Monitoring
CEMS	continuous emission monitoring systems
cfm	cubic feet per minute
CFR	Code of Federal Regulations
CI	compression ignition
CMS	continuous monitoring systems
CO	carbon monoxide
CO ₂	carbon dioxide
CO ₂ e	CO ₂ equivalent emissions
COMS	continuous opacity monitoring systems
DEQ	Department of Environmental Quality
dscf	dry standard cubic feet
EPA	U.S. Environmental Protection Agency
GHG	greenhouse gases
gph	gallons per hour
gpm	gallons per minute
gr	grains (1 lb = 7,000 grains)
HAP	hazardous air pollutants
HHV	higher heating value
hp	horsepower
hr/yr	hours per consecutive 12 calendar month period
ICE	internal combustion engines
IDAPA	a numbering designation for all administrative rules in Idaho promulgated in accordance with the Idaho Administrative Procedures Act
iwg	inches of water gauge
km	kilometers
lb/hr	pounds per hour
m	meters
MACT	Maximum Achievable Control Technology
mg/dscm	milligrams per dry standard cubic meter
MMBtu	million British thermal units
MMscf	million standard cubic feet
MRRR	Monitoring, Recordkeeping and Reporting Requirements
MSWL	Municipal Solid Waste Landfill
NESHAP	National Emission Standards for Hazardous Air Pollutants
NO ₂	nitrogen dioxide
NO _x	nitrogen oxides
NSPS	New Source Performance Standards
O&M	operation and maintenance
O ₂	oxygen
PC	permit condition
PM	particulate matter
PM _{2.5}	particulate matter with an aerodynamic diameter less than or equal to a nominal 2.5 micrometers

PM ₁₀	particulate matter with an aerodynamic diameter less than or equal to a nominal 10 micrometers
ppm	parts per million
ppmw	parts per million by weight
ppmv	parts per million by volume
PSD	Prevention of Significant Deterioration
psig	pounds per square inch gauge
PTC	permit to construct
PTE	potential to emit
PW	process weight rate
RICE	reciprocating internal combustion engines
<i>Rules</i>	<i>Rules for the Control of Air Pollution in Idaho</i>
scf	standard cubic feet
SIP	State Implementation Plan
SO ₂	sulfur dioxide
SO _x	sulfur oxides
T/day	tons per calendar day
T/hr	tons per hour
T/yr	tons per consecutive 12 calendar month period
T1	Tier I operating permit
T2	Tier II operating permit
TAP	toxic air pollutants
ULSD	ultra low sulfur diesel
U.S.C.	United States Code
VOC	volatile organic compound

2. INTRODUCTION AND APPLICABILITY

Peterson Hill Landfill is a municipal solid waste landfill that generates landfill gas, and is located at 9449 E Sunnyside Road in Ammon. The facility is not classified as a major facility, as defined by IDAPA 58.01.01.008.10.c, because it does not emit or has the potential to emit any major criteria pollutants above the major source threshold of 100 tons-per-year. The facility also does not classify as a major facility, as defined by Subsection 008.10.a, because it does not emit or have the potential to emit any HAP air pollutant above the major source thresholds of 10 tons-per-year for any single HAP and/or 25 tons-per-year for any combination of HAP.

However, Peterson Hill Landfill is subject to applicability standards of IDAPA 58.01.01.859.01 and required to comply with Tier 1/ Title V Federal Operating Permit Requirement per IDAPA 58.01.01.859.04.

IDAPA 58.01.01.362 requires that as part of its review of the Tier I application, DEQ shall prepare a technical memorandum (i.e. statement of basis) that sets forth the legal and factual basis for the draft Tier I operating permit terms and conditions including reference to the applicable statutory provisions or the draft denial. This document provides the basis for the draft Tier I operating permit for Peterson Hill Landfill.

The format of this Statement of Basis follows that of the permit. Peterson Hill Tier I operating permit is organized into sections. They are as follows:

Section 1 – Acronyms, Units, and Chemical Nomenclature

The acronyms, units, and chemical nomenclature used in the permit are defined in this section.

Section 2 - Tier I Operating Permit Scope

The scope describes this permitting action.

Section 3 - Facility-wide Conditions

The Facility-wide Conditions section contains the applicable requirements (permit conditions) that apply facility-wide. Where required, monitoring, recordkeeping and reporting requirements (MRRR) sufficient to assure compliance with a permit condition follows the permit condition.

Sections 4 – Peterson Hill Landfill – 40 CFR 60 Subpart WWW and 40 CFR 63 Subpart AAAA

The emissions unit-specific sections of the permit contain the applicable requirements that specifically apply to each regulated emissions unit. Some requirements that apply to an emissions unit (e.g. opacity limits) may be contained in the Facility-wide Conditions Section. As with the facility-wide conditions, monitoring, recordkeeping and reporting requirements (MRRR) sufficient to assure compliance with an applicable requirement follows the applicable requirement.

Section 5 - Non-applicable Requirements and Insignificant Activities

This section lists those requirements that the applicant has requested as non-applicable, and DEQ proposes to grant a permit shield in accordance with IDAPA 58.01.01.325.

This section contains a list of units or activities that are insignificant on the basis of size or production rate. Units and activities listed in this section must be listed in the permit application. The regulatory citation for units and activities that are insignificant on the basis of size or production rate is IDAPA 58.01.01.317.01.b.

Section 6 - General Provisions

The final section of the permit contains standard terms and conditions that apply to all major facilities subject to IDAPA 58.01.01.300. This section is the same for all Tier I facilities. The General Provisions have been reviewed by EPA and contain all terms and conditions required by IDAPA 58.01.01 et al as well as requirements from other air quality laws, rules and regulations. Each general provision has been paraphrased so it is more easily understood by the general public; however, there is no intent to alter the effect of the requirement. Should there be a discrepancy between a paraphrased general provision in this statement of basis and a rule or permit, the rule or permit shall govern.

3. FACILITY INFORMATION

3.1 Facility Description

The Peterson Hill Landfill (PHL) is a licensed municipal solid waste landfill (MSWL) that is located approximately 12 miles southeast of the Idaho Falls. The facility serves as the sole MSWL for Bonneville County, Idaho. The service area includes all of Bonneville County with total population of approximately 100,000. The PHL has 11 planned development (expansion) phases with a total permitted area of 178.5 acres. The landfill currently occupies approximately 46 acres (Phases 1-3). The first landfill cell, Phase 1, was constructed between August 1993 and December 1993. The facility began accepting waste in a subpart of Phase 1 (Phase 1A) in January 1994. In 2008, the County began closing portions of Phase 1, which consisted of approximately 7.6 acres on the south side. The County is in the process of closing Phase 2.

The original design for the PHL was prepared by Damschen & Associates, Inc. in 1992. The design included the development of lined landfill cells on an undeveloped parcel of land that had been evaluated and studied in order to obtain Site Certification from the DEQ. The site consists of approximately 300 acres of agricultural land located north of Sunnyside Road. The south portion of the site is located on top of an east-west trending ridge. Generally, the landfill is designed and operated as an area fill. The site is being filled from the highest existing elevation area located near Sunnyside Road (Phase 1) first and

progresses in a northerly direction down the main coulee. The site is designed with no steeper waste slopes than 4H:1V (horizontal to vertical) with a minimum final slope of at least 5 percent.

The original design of the PHL estimated the life to be over 150 years at an estimated in-place waste density of 1,200 pounds per cubic yard (lbs/cy) with a 60,000 tons/year waste acceptance rate. Based on these figures, the overall capacity of the landfill was estimated at 15 million cubic yards (11.5 million cubic meters), which is equivalent to 9 million tons (8.2 million megagrams). The County hired Great West Engineering, Inc. to prepare a Master Plan in 2016, to refine the cut and final fill plan of the landfill. The in-place density of the waste was estimated at 1,411 lbs/cy. Currently, PHL accepts approximately 125,000 tons/year of waste (includes approximately 200 tons/year of petroleum contaminated soil that is buried with the waste) and now has an estimated remaining life of approximately 118 years. The overall estimated landfill design capacity was increased to 22.9 million cubic yards (20.8 million cubic meters) and 16.6 million US tons (15.1 million megagrams). As part of the 2016 Master Plan no physical construction of a modification, as defined in 40 CFR 63 Subpart WWW, has taken place at the time of permit issuance.

Per 40 CFR 60.672.(b) Peterson Hill Landfill is subject to part 40 CFR 70 and 71 and therefore required to comply with Tier I/ Title V Federal Operating Permit Requirements. These requirements are reflected under IDAPA 58.01.01.859.04.

The PHL is subject to 40 CFR Part 60 Subpart WWW [New Source Performance Standards for Municipal Solid Waste Landfills (NSPS)] for the following reasons:

- It was constructed after May 30, 1991
- It received waste after November 8, 1987

It has a design capacity of more than 2.5 million megagrams (Mg) and 2.5 million cubic meters (m3), and therefore, is a designated facility and subject to NSPS.

The facility is potentially subject as well to the NESHAP subpart regulating municipal landfills, 40 CFR 63, subpart AAAA. However, there are no applicable requirements for this subpart until the facility satisfies anyone of the three criteria in paragraphs 40 CFR 63.1935(a)(1) through (a)(3).

3.2 Facility Permitting History

This is the initial Tier I Operating Permit and there are no underlying permits issued to this facility.

4. APPLICATION SCOPE AND APPLICATION CHRONOLOGY

4.1 Application Scope

This permit is the initial Tier I operating permit for this facility.

4.2 Application Chronology

December 28, 2017	DEQ received an application.
January 22, 2018	DEQ determined that the application was complete.
January 29, 2018	DEQ made available the draft permit and statement of basis for peer and regional office review.
February 7, 2018	DEQ made available the draft permit and statement of basis for applicant review.

March 21 – April 20, 2018 DEQ provided a public comment period on the proposed action.

April 23, 2018 DEQ provided the proposed permit and statement of basis for EPA review.

April 24, 2018 EPA notified DEQ that they will not be reviewing the proposed permit action and will not object to its issuance. EPA stated, “The permit is now eligible for issuance.”

April 26, 2018 DEQ issued the final permit and statement of basis.

5. EMISSIONS UNITS, PROCESS DESCRIPTION(S), AND EMISSIONS INVENTORY

This section lists the emissions units, describes the production or manufacturing processes, and provides the emissions inventory for this facility. The information presented was provided by the applicant in its permit application. Also listed in this section are the insignificant activities based on size or production rate.

5.1 Process No. 1 - PROCESS DESCRIPTION

Table 5.1 lists the emissions units and control devices associated with Peterson Hill Landfill.

Table 5.1 EMISSIONS UNITS, CONTROL DEVICE, AND DISCHARGE POINT INFORMATION

Emissions Unit Description	Control Device (if applicable)	Emission Point ID No.
Peterson Hill Landfill	None	Fugitive

5.2 Insignificant Emissions Units Based on Size or Production Rate

This section contains a list of units or activities that are insignificant on the basis of size or production rate. Units and activities listed in this section must be listed in the permit application. Table 5.2 lists the units and activities which have been determined to be insignificant on the basis of size or production rate. The regulatory authority for emissions units and activities that are insignificant on the basis of size or production rate is IDAPA 58.01.01.317.01.b.

Table 5.2 INSIGNIFICANT EMISSION UNITS AND REGULATORY AUTHORITY/JUSTIFICATION

Emissions Unit / Activity	Regulatory Authority / Justification
350-gallon used oil holding tank	IDAPA 58.01.01.317.01(b)(i)4
Internal combustion engines for propelling or powering a vehicle	IDAPA 58.01.01.317.01(b)(i)10
Blazing, Soldering and Welding Equipment	IDAPA 58.01.01.317.01(b)(i)12
Portable Drums and Totes	IDAPA 58.01.01.317.01(b)(i)18
General vehicle maintenance	IDAPA 58.01.01.317.01(b)(i)40
Comfort air conditioning and cooling systems	IDAPA 58.01.01.317.01(b)(i)41
Natural and forced air vents from bathroom/toilet facilities	IDAPA 58.01.01.317.01(b)(i)43
Office activities	IDAPA 58.01.01.317.01(b)(i)44
General shop tools for cutting, drilling, grinding etc.	IDAPA 58.01.01.317.01(b)(i)18
Repair and maintenance shop activities	IDAPA 58.01.01.317.01(b)(i)64
Air compressors, pneumatically operated equipment, systems and hand tools	IDAPA 58.01.01.317.01(b)(i)78
Sewer manholes, junction boxes, sumps, and lift stations associated with wastewater treatment systems	IDAPA 58.01.01.317.01(b)(i)104

5.3 Non-applicable Requirements for Which a Permit Shield is Requested

This section of the permit lists the regulations for which the facility has requested, and DEQ proposes to grant, a permit shield pursuant to IDAPA 58.01.01.325. The applicant requested a shield, but did not specify non-applicable requirements. Therefore, the permit shield set in the general provisions of the permit shall apply.

5.4 Emissions Inventory

Table 5.3 summarizes the emissions inventory for this major facility. All values are expressed in units of tons-per-year and represent the facility's potential to emit. Potential to emit is defined as the maximum capacity of a facility or stationary source to emit an air pollutant under its physical and operational design. Any physical or operational limitation on the capacity of the facility or source to emit an air pollutant, including air pollution control equipment and restrictions on hour of operation or on the type or amount of material combusted, stored or processed shall be treated as part of its design if the limitation or the effect it would have on emission is state or federally enforceable.

The documentation provided by the applicant for the emissions inventory and emission factors is provided as Appendix B of this statement of basis.

Table 5.3 EMISSIONS INVENTORY - POTENTIAL TO EMIT (T/yr)

Source Description	PM _{2.5} T/yr	PM ₁₀ T/yr	NO _x T/yr	SO ₂ T/yr	CO T/yr	VOC T/yr	HAP ² T/yr
Peterson Hill Landfill (Fugitive Gas Emissions)	-	-	-	-	1.73	14.31	11.9
Fugitive Dust: Road Traffic	0.739	7.39	-	-	-	-	-
Fugitive Dust: Operations	0.661	5.41	-	-	-	-	-
Used Oil Heater ¹ (equipment building)		2.08	0.117	2.66	0.0153	-	-
Total Emissions	1.4	14.9	0.117	2.66	1.74	14.31	11.9

¹ Per IDAPA 58.01.01.222.02.h, Used Oil Heater is a Category II exempt source.

² Some pollutants are accounted for in both the VOC value and the HAP value as provided in the Landgem output(see appendix A)

6. EMISSIONS LIMITS AND MRRR

This section contains the applicable requirements for this T1 facility.

This section is divided into the following subsections.

- Facility-Wide Conditions;
- Peterson Hill Landfill Emissions Limits;
- Tier I Operating Permit General Provisions.

MRRR

Monitoring, recordkeeping and reporting requirements (MRRR) are the means with which compliance with an applicable requirement is demonstrated. In this section, the applicable requirement (permit condition) is provided first followed by the MRRR. Should an applicable requirement not include sufficient MRRR to satisfy IDAPA 58.01.01.322.06, 07, and 08, then the permit must establish adequate monitoring, recordkeeping and reporting sufficient to yield reliable data from the relevant time period that are representative of the source's compliance with the permit (i.e. gap filling). In addition to the specific MRRR provided for each applicable requirement, generally applicable facility-wide conditions and general provisions may also be provided, such as performance testing, reporting, and certification requirements.

The legal and factual basis for each permit condition is provided for in this document. If a permit condition was changed due to facility draft comments or public comments, an explanation of the changes is provided.

State Enforceability

An applicable requirement that is not required by the federal CAA and has not been approved by EPA as a SIP-approved requirement is identified as a "State-only" requirement and is enforceable only under state law. State-only requirements are not enforceable by the EPA or citizens under the CAA. State-only requirements are identified in the permit within the citation of the legal authority for the permit condition.

Federal Enforceability

Unless identified as "State-only," all applicable requirements, including MRRR, are state and federally enforceable. It should be noted that while a violation of a MRRR is a violation of the permit, it is not necessarily a violation of the underlying applicable requirement (e.g. emissions limit).

To minimize the length of this document, the following permit conditions and MRRR have been paraphrased. Refer to the permit for the complete requirements.

6.1 Facility-Wide Conditions

Permit Condition 3.1 - Fugitive Dust

All reasonable precautions shall be taken to prevent PM from becoming airborne in accordance with IDAPA 58.01.01.650-651.

[IDAPA 58.01.01.650-651, 3/30/07]

MRRR (Permit Conditions 3.2 through 3.4)

- Monitor and maintain records of the frequency and the methods used to control fugitive dust emissions;
- Maintain records of all fugitive dust complaints received and the corrective action taken in response to the complaint;
- Conduct facility-wide inspections of all sources of fugitive emissions. If any of the sources of fugitive dust are not being reasonably controlled, corrective action is required.

[IDAPA 58.01.01.322.06, 07, 08, 4/5/2000]

Permit Condition 3.5 - Odors

The permittee shall not allow, suffer, cause, or permit the emission of odorous gases, liquids, or solids to the atmosphere in such quantities as to cause air pollution.

[IDAPA 58.01.01.775-776 (State-only), 5/1/94]

MRRR (Permit Condition 3.6)

- Maintain records of all odor complaints received and the corrective action taken in response to the complaint;
- Take appropriate corrective action if the complaint has merit, and log the date and corrective action taken.

[IDAPA 58.01.01.322.06, 07 (State only), 5/1/94]

Permit Condition 3.7 - Visible Emissions

The permittee shall not discharge any air pollutant to the atmosphere from any point of emission for a period or periods aggregating more than three minutes in any 60-minute period which is greater than 20% opacity as determined by procedures contained in IDAPA 58.01.01.625. These provisions shall not apply when the presence of uncombined water, nitrogen oxides, and/or chlorine gas is the only reason for the failure of the emission to comply with the requirements of this section.

[IDAPA 58.01.01.625, 4/5/00]

MRRR (Permit Condition 3.8 through 3.9)

- Conduct facility-wide inspections of all emissions units subject to the visible emissions standards (or rely on continuous opacity monitoring);

- If visible emissions are observed, take appropriate corrective action and/or perform a Method 9 opacity test;
- Maintain records of the results of each visible emissions inspection.

[IDAPA 58.01.01.322.06, 07, 5/1/94]

Permit Conditions 3.10 through 3.14 - Excess Emissions

The permittee shall comply with the procedures and requirements of IDAPA 58.01.01.130-136 for excess emissions. The provisions of IDAPA 58.01.01.130-136 shall govern in the event of conflicts between the excess emissions facility wide conditions and the regulations of IDAPA 58.01.01.130-136.

MRRR (Permit Conditions 3.11 through 3.14)

Monitoring, recordkeeping and reporting requirements for excess emissions are provided in Sections 131 through 136.

- Take appropriate action to correct, reduce, and minimize emissions from excess emissions events;
- Prohibit excess emissions during any DEQ Atmospheric Stagnation Advisory or Wood Stove Curtailment Advisory;
- Notify DEQ of each excess emissions events as soon as possible, including information regarding upset, breakdown, or safety events.
- Submit a report for each excess emissions event to DEQ;
- Maintain records of each excess emissions event.

Permit Condition 3.15 – Fuel-Burning Equipment PM Standards

The permittee shall not discharge to the atmosphere from any fuel-burning equipment PM in excess of 0.015 gr/dscf of effluent gas corrected to 3% oxygen by volume for gas, 0.050 gr/dscf of effluent gas corrected to 3% oxygen by volume for liquid, 0.050 gr/dscf of effluent gas corrected to 8% oxygen by volume for coal, and 0.080 gr/dscf of effluent gas corrected to 8% oxygen by volume for wood products.

[IDAPA 58.01.01.676-677, 5/1/94]

MRRR

No specific monitoring is required for this facility-wide condition. As with all permit conditions, the permittee must certify compliance with this condition annually, which includes making a reasonable inquiry to determine if this requirement was met during the reporting period.

In addition, as long as the facility maintains the Used Oil Fired Heater (See Table 5.3) in accordance with IDAPA 58.01.01.220.02.h.i-v DEQ acknowledges the source as Category II exempt and requires no PTC. Furthermore, no monitoring is specifically required to show compliance with this facility wide condition for the Facility's Used Oil Fired Heater if Category II exemption criteria are maintained.

Permit Condition 3.16 - Sulfur Content Limits

The permittee shall not sell, distribute, use, or make available for use any of the following:

- Distillate fuel oil containing more than the following percentages of sulfur:
 - ASTM Grade 1 fuel oil, 0.3% by weight.
 - ASTM Grade 2 fuel oil, 0.5% by weight.
- Coal containing greater than 1.0% sulfur by weight.
- DEQ may approve an exemption from these fuel sulfur content requirements (IDAPA 58.01.01.725.01 725.04) if the permittee demonstrates that, through control measures or other means, SO₂ emissions are equal to or less than those resulting from the combustion of fuels complying with these limitations.

[IDAPA 58.01.01.725, 3/29/10]

MRRR - (Permit Condition 3.17)

The permittee shall maintain documentation of supplier verification of fuel sulfur content on an as received basis.

[IDAPA 58.01.01.322.06, 5/1/94]

Permit Condition 3.18 - Open Burning

The permittee shall comply with the *Rules for Control of Open Burning*, IDAPA 58.01.01.600-623.

[IDAPA 58.01.01.600-623, 5/08/09]

MRRR

No specific monitoring is required for this facility-wide condition. As with all permit conditions, the permittee must certify compliance with this condition annually, which includes making a reasonable inquiry to determine if this requirement was met during the reporting period.

Permit Condition 3.19 - Asbestos

The permittee shall comply with all applicable requirements of 40 CFR 61, Subpart M—“National Emission Standard for Asbestos.”

[40 CFR 61, Subpart M]

MRRR

No specific monitoring is required for this facility-wide condition. As with all permit conditions, the permittee must certify compliance with this condition annually, which includes making a reasonable inquiry to determine if this requirement was met during the reporting period.

Permit Condition 3.20 - Accidental Release Prevention

(a)

An owner or operator of a stationary source that has more than a threshold quantity of a regulated substance in a process, as determined under 40 CFR 68.115, shall comply with the requirements of the Chemical Accident Prevention Provisions at 40 CFR 68 no later than the latest of the following dates:

- Three years after the date on which a regulated substance present above a threshold quantity is first listed under 40 CFR 68.130.
- The date on which a regulated substance is first present above a threshold quantity in a process.

[40 CFR 68.10 (a)]

(b)

This facility is subject to 40 CFR Part 68 and shall certify compliance with all requirements of 40 CFR Part 68, including the registration and submission of the RMP, as part of the annual compliance certification required by 40 CFR 70.6(c)(5).

[40 CFR 68.215(a)(2); IDAPA 58.01.01.322.11, 4/6/05; 40 CFR 68.215(a)(ii)]

MRRR

No specific monitoring is required for this facility-wide condition. As with all permit conditions, the permittee must certify compliance with this condition annually, which includes making a reasonable inquiry to determine if this requirement was met during the reporting period.

Permit Condition 3.21 - Recycling and Emissions Reductions

The permittee shall comply with applicable standards for recycling and emissions reduction of refrigerants and their substitutes pursuant to 40 CFR 82, Subpart F, Recycling and Emissions Reduction.

[40 CFR 82, Subpart F]

MRRR

No specific monitoring is required for this facility-wide condition. As with all permit conditions, the permittee must certify compliance with this condition annually, which includes making a reasonable inquiry to determine if this requirement was met during the reporting period.

Permit Condition 3.22 through 3.23- NSPS/NESHAP General Provisions

This facility is subject to NSPS Subpart WWW and potentially subject to NESHAP subpart AAAA, and is therefore required to comply with applicable General Provisions.

[40 CFR 60/63, Subpart A]

MRRR

No specific monitoring is required for this facility-wide condition. As with all permit conditions, the permittee must certify compliance with this condition annually, which includes making a reasonable inquiry to determine if this requirement was met during the reporting period.

Permit Condition 3.24 - Monitoring and Recordkeeping

The permittee shall maintain sufficient records to assure compliance with all of the terms and conditions of this operating permit. Records of monitoring information shall include, but not be limited to, the following: (a) the date, place, and times of sampling or measurements; (b) the date analyses were performed; (c) the company or entity that performed the analyses; (d) the analytical techniques or methods used; (e) the results of such analyses; and (f) the operating conditions existing at the time of sampling or measurement. All monitoring records and support information shall be retained for a period of at least five years from the date of the monitoring sample, measurement, report, or application. Supporting information includes, but is not limited to, all calibration and maintenance records, all original strip-chart recordings for continuous monitoring instrumentation, and copies of all reports required by this permit. All records required to be maintained by this permit shall be made available in either hard copy or electronic format to DEQ representatives upon request.

[IDAPA 58.01.01.322.06, 07, 5/1/94]

MRRR

No specific monitoring is required for this facility-wide condition. As with all permit conditions, the permittee must certify compliance with this condition annually, which includes making a reasonable inquiry to determine if this requirement was met during the reporting period.

Permit Conditions 3.25 through 3.28 - Performance Testing

If performance testing is required, the permittee shall provide notice of intent to test to DEQ at least 15 days prior to the scheduled test or shorter time period as provided in a permit, order, consent decree, or by DEQ approval. DEQ may, at its option, have an observer present at any emissions tests conducted on a source. DEQ requests such testing not be performed on weekends or state holidays.

All testing shall be conducted in accordance with the procedures in IDAPA 58.01.01.157. Without prior DEQ approval, any alternative testing is conducted solely at the permittee's risk. If the permittee fails to obtain prior written approval by DEQ for any testing deviations, DEQ may determine that the testing does not satisfy the testing requirements. Therefore, prior to conducting any performance test, the permittee is encouraged to submit in writing to DEQ, at least 30 days in advance, the following for approval:

- The type of method to be used
- Any extenuating or unusual circumstances regarding the proposed test
- The proposed schedule for conducting and reporting the test

[IDAPA 58.01.01.157, 4/5/00; IDAPA 58.01.01.322.06, 08.a, 09, 5/1/94]

MRRR (Permit Conditions 3.26 and 3.28)

The permittee shall submit compliance test report(s) to DEQ following testing.

[IDAPA 58.01.01.157, 4/5/00; IDAPA 58.01.01.322.06, 08.a, 09, 5/1/94]

Permit Condition 3.29 - Reports and Certifications

This permit condition establishes generally applicable MRRR for submittal of reports, certifications, and notifications to DEQ and/or EPA as specified.

[IDAPA 58.01.01.322.08, 11, 5/1/94]

MRRR

No specific monitoring is required for this facility-wide condition. As with all permit conditions, the permittee must certify compliance with this condition annually, which includes making a reasonable inquiry to determine if this requirement was met during the reporting period.

Permit Condition 3.30 - Incorporation of Federal Requirements by Reference

Unless expressly provided otherwise, any reference in this permit to any document identified in IDAPA 58.01.01.107.03 shall constitute the full incorporation into this permit of that document for the purposes of the reference, including any notes and appendices therein.

[IDAPA 58.01.01.107, 4/7/11]

MRRR

No specific monitoring is required for this facility-wide condition. As with all permit conditions, the permittee must certify compliance with this condition annually, which includes making a reasonable inquiry to determine if this requirement was met during the reporting period.

6.2 Emissions Unit-Specific Emissions Limits and MRRR

Peterson Hill Landfill – 40 CFR 60 Subpart WWW and 40 CFR 63 Subpart AAAAA

Permit Condition 4.1. through 4.27

These permit conditions incorporate the emission limits, monitoring, recordkeeping, reporting, and testing requirements of NSPS Subpart WWW applicable to landfill operations.

Permit Conditions 4.28 (including MRRR)

This permit condition incorporates a high level citation of 40 CFR 63 Subpart AAAAA applicable to landfill operations in the event that the facility satisfies anyone of the three criteria in paragraphs 40 CFR 63.1935(a)(1) through (a)(3).

6.3 General Provisions

Unless expressly stated, there are no MRRR for the general provisions.

General Compliance, Duty to Comply

The permittee must comply with the terms and conditions of the permit.

[IDAPA 58.01.01.322.15.a, 5/1/94; 40 CFR 70.6(a)(6)(i)]

General Compliance, Need to Halt or Reduce Activity Not a Defense

The permittee cannot use the fact that it would have been necessary to halt or reduce an activity as a defense in an enforcement action.

[IDAPA 58.01.01.322.15.b, 5/1/94; 40 CFR 70.6(a)(6)(ii)]

General Compliance, Duty to Supplement or Correct Application

The permittee must promptly submit such supplementary facts or corrected information upon becoming aware that any relevant facts were omitted or incorrect information was submitted in the permit application. The permittee must also provide information as necessary to address any new requirements that become applicable after the date a complete application has been filed but prior to the release of a draft permit.

[IDAPA 58.01.01.315.01, 5/1/94; 40 CFR 70.5(b)]

Reopening, Additional Requirements, Material Mistakes, Etc.

This term lists the instances when the permit must be reopened and revised, including times when additional requirements become applicable, when the permit contains mistakes, or when revision or revocation is necessary to assure compliance with applicable requirements.

[IDAPA 58.01.01.322.15.c, 5/1/94; IDAPA 58.01.01.386, 3/19/99; 40 CFR 70.7(f)(1), (2); 40 CFR 70.6(a)(6)(iii)]

Reopening, Permitting Actions

This term discusses modification, revocation, reopening, and/or reissuance of the permit for cause. If the permittee files a request to modify, revoke, reissue, or terminate the permit, the request does not stay any permit condition, nor does notification of planned changes or anticipated noncompliance.

[IDAPA 58.01.01.322.15.d, 5/1/94; 40 CFR 70.6(a)(6)(iii)]

Property Rights

This permit does not convey any property rights of any sort, or any exclusive privilege.

[IDAPA 58.01.01.322.15.e, 5/1/94; 40 CFR 70.6(a)(6)(iv)]

Information Requests

The permittee must furnish, within a reasonable time to DEQ, any information, including records required by the permit, that is requested in writing to determine whether cause exists for modifying, revoking and reissuing, or terminating the permit or to determine compliance with the permit.

[Idaho Code §39-108; IDAPA 58.01.01.122, 4/5/00; IDAPA 58.01.01.322.15.f, 4/5/00; 40 CFR 70.6(a)(6)(v)]

Information Requests, Confidential Business Information

Upon request, the permittee must furnish to DEQ copies of records required to be kept by this permit. For information claimed to be confidential, the permittee may furnish such records along with a claim of confidentiality in accordance with Idaho Code §9-342A and applicable implementing regulations including IDAPA 58.01.01.128.

[IDAPA 58.01.01.322.15.g, 5/1/94; IDAPA 58.01.01.128, 4/5/00; 40 CFR 70.6(a)(6)(v)]

Severability

If any provision of the permit is held to be invalid, all unaffected provisions of the permit will remain in effect and enforceable.

[IDAPA 58.01.01.322.15.h, 5/1/94; 40 CFR 70.6(a)(5)]

Changes Requiring Permit Revision or Notice

The permittee may not commence construction or modification of any stationary source, facility, major facility, or major modification without first obtaining all necessary permits to construct or an approval under IDAPA 58.01.01.213, or complying with IDAPA 58.01.01.220 through 223. The permittee must comply with IDAPA 58.01.01.380 through 386 as applicable.

[IDAPA 58.01.01.200-223, 4/2/08; IDAPA 58.01.01.322.15.i, 3/19/99; IDAPA 58.01.01.380-386, 7/1/02; 40 CFR 70.4(b)(12), (14), (15), and 70.7(d), (e)]

Changes that are not addressed or prohibited by the Tier I operating permit require a Tier I operating permit revision if such changes are subject to any requirement under Title IV of the CAA, 42 U.S.C. Section 7651 through 7651c, or are modifications under Title I of the CAA, 42 U.S.C. Section 7401 through 7515. Administrative amendments (IDAPA 58.01.01.381), minor permit modifications (IDAPA 58.01.01.383), and significant permit modifications (IDAPA 58.01.01.382) require a revision to the Tier I operating permit. IDAPA 58.01.01.502(b)(10) changes are authorized in accordance with IDAPA 58.01.01.384. Off permit changes and required notice are authorized in accordance with IDAPA 58.01.01.385.

[IDAPA 58.01.01.381-385, 7/1/02; IDAPA 58.01.01.209.05, 4/11/06; 40 CFR 70.4(b)(14) and (15)]

Federal and State Enforceability

All permit conditions are federally enforceable unless specified in the permit as a state or local only requirement. State and local only requirements are not required under the CAA and are not enforceable by EPA or by citizens.

[IDAPA 58.01.01.322.15.j, 5/1/94; IDAPA 58.01.01.322.15.k, 3/23/98; Idaho Code §39-108; 40 CFR 70.6(b)(1), (2)]

Inspection and Entry

Upon presentation of credentials, the facility shall allow DEQ or an authorized representative of DEQ to do the following:

- Enter upon the permittee's premises where a Tier I source is located or emissions related activity is conducted, or where records are kept under conditions of this permit;
- Have access to and copy, at reasonable times, any records that are kept under the conditions of this permit;
- Inspect at reasonable times any facilities, equipment (including monitoring and air pollution control equipment), practices, or operations regulated or required under this permit; and
- As authorized by the Idaho Environmental Protection and Health Act, sample or monitor, at reasonable times, substances or parameters for the purpose of determining or ensuring compliance with this permit or applicable requirements.

[Idaho Code §39-108; IDAPA 58.01.01.322.15.l, 5/1/94; 40 CFR 70.6(c)(2)]

New Applicable Requirements

The permittee must continue to comply with all applicable requirements and must comply with new requirements on a timely basis.

[IDAPA 58.01.01.322.10, 4/5/00; IDAPA 58.01.01.314.10.a.ii, 5/1/94; 40 CFR 70.6(c)(3) citing 70.5(c)(8)]

Fees

The owner or operator of a Tier I source shall pay annual registration fees to DEQ in accordance with IDAPA 58.01.01.387 through IDAPA 58.01.01.397.

[IDAPA 58.01.01.387, 4/2/03; 40 CFR 70.6(a)(7)]

Certification

All documents submitted to DEQ shall be certified in accordance with IDAPA 58.01.01.123 and comply with IDAPA 58.01.01.124.

[IDAPA 58.01.01.322.15.o, 5/1/94; 40 CFR 70.6(a)(3)(iii)(A); 40 CFR 70.5(d)]

Renewal

The permittee shall submit an application to DEQ for a renewal of this permit at least six months before, but no earlier than 18 months before, the expiration date of this operating permit. To ensure that the term of the operating permit does not expire before the permit is renewed, the owner or operator is encouraged to submit a renewal application nine months prior to the date of expiration.

[IDAPA 58.01.01.313.03, 4/5/00; 40 CFR 70.5(a)(1)(iii)]

If a timely and complete application for a Tier I operating permit renewal is submitted, but DEQ fails to issue or deny the renewal permit before the end of the term of this permit, then all the terms and conditions of this permit including any permit shield that may have been granted pursuant to IDAPA 58.01.01.325 shall remain in effect until the renewal permit has been issued or denied.

[IDAPA 58.01.01.322.15.p, 5/1/94; 40 CFR 70.7(b)]

Permit Shield

Compliance with the terms and conditions of the Tier I operating permit, including those applicable to all alternative operating scenarios and trading scenarios, shall be deemed compliance with any applicable requirements as of the date of permit issuance, provided that:

- Such applicable requirements are included and are specifically identified in the Tier I operating permit; or
 - DEQ has determined that other requirements specifically identified are not applicable and all of the criteria set forth in IDAPA 58.01.01.325.01(b) have been met.
- The permit shield shall apply to permit revisions made in accordance with IDAPA 58.01.01.381.04 (administrative amendments incorporating the terms of a permit to construct), IDAPA 58.01.01.382.04 (significant modifications), and IDAPA 58.01.01.384.03 (trading under an emissions cap).
- Nothing in this permit shall alter or affect the following:
 - Any administrative authority or judicial remedy available to prevent or terminate emergencies or imminent and substantial dangers;
 - The liability of an owner or operator of a source for any violation of applicable requirements prior to or at the time of permit issuance;
 - The applicable requirements of the acid rain program, consistent with 42 U.S.C. Section 7651(g)(a); and
 - The ability of EPA to obtain information from a source pursuant to Section 114 of the CAA; or the ability of DEQ to obtain information from a source pursuant to Idaho Code §39-108 and IDAPA 58.01.01.122.

[Idaho Code §39-108 and 112; IDAPA 58.01.01.122, 4/5/00;
 IDAPA 58.01.01.322.15.m, 325.01, 5/1/94; IDAPA 58.01.01.325.02, 3/19/99;
 IDAPA 58.01.01.381.04, 382.04, 383.05, 384.03, 385.03, 3/19/99; 40 CFR 70.6(f)]

Compliance Schedule and Progress Reports

- For each applicable requirement for which the source is not in compliance, the permittee shall comply with the compliance schedule incorporated in this permit.
- For each applicable requirement that will become effective during the term of this permit and that provides a detailed compliance schedule, the permittee shall comply with such requirements in accordance with the detailed schedule.
- For each applicable requirement that will become effective during the term of this permit that does not contain a more detailed schedule, the permittee shall meet such requirements on a timely basis.
- For each applicable requirement with which the permittee is in compliance, the permittee shall continue to comply with such requirements.

[IDAPA 58.01.01.322.10, 4/5/00; IDAPA 58.01.01.314.9, 5/1/94; IDAPA 58.01.01.314.10, 4/5/00;
 40 CFR 70.6(c)(3) and (4)]

Periodic Compliance Certification

The permittee shall submit compliance certifications during the term of the permit for each emissions unit to DEQ and the EPA as specified.

- Compliance certifications for all emissions units shall be submitted annually unless otherwise specified;
- All original compliance certifications shall be submitted to DEQ and a copy of all compliance certifications shall be submitted to the EPA.

[IDAPA 58.01.01.322.11, 4/6/05; 40 CFR 70.6(c)(5)(iii) as amended,
 62 Fed. Reg. 54900, 54946 (10/22/97); 40 CFR 70.6(c)(5)(iv)]

False Statements

The permittee may not make any false statement, representation, or certification in any form, notice, or report required under this permit, or any applicable rule or order in force pursuant thereto.

No Tampering

The permittee may not render inaccurate any monitoring device or method required under this permit or any applicable rule or order in force pursuant thereto.

[IDAPA 58.01.01.126, 3/23/98]

Semiannual Monitoring Reports.

In addition to all applicable reporting requirements identified in this permit, the permittee shall submit reports of any required monitoring at least every six months as specified.

[IDAPA 58.01.01.322.15.q, 3/23/98; IDAPA 58.01.01.322.08.c, 4/5/00; 40 CFR 70.6(a)(3)(iii)]

Reporting Deviations and Excess Emissions

Each and every applicable requirement, including MRRR, is subject to prompt deviation reporting. Deviations due to excess emissions must be reported in accordance Sections 130-136. All instances of deviation from Tier I operating permit requirements must be included in the deviation reports. The reports must describe the probable cause of the deviation and any corrective action or preventative measures taken. Deviation reports must be submitted at least every six months unless the permit specifies a different time period as required by IDAPA 58.01.01.322.08.c. Examples of deviations include, but are not limited to, the following:

- Any situation in which an emissions unit fails to meet a permit term or condition
- Emission control device does not meet a required operating condition
- Observations or collected data that demonstrate noncompliance with an emissions standard
- Failure to comply with a permit term that requires a report

[IDAPA 58.01.01.322.15.q, 3/23/98; IDAPA 58.01.01.135, 4/11/06; 40 CFR 70.6(a)(3)(iii)]

Permit Revision Not Required, Emissions Trading

No permit revision will be required, under any approved, economic incentives, marketable permits, emissions trading, and other similar programs or processes, for changes that are provided for in the permit.

[IDAPA 58.01.01.322.05.b, 4/5/00; 40 CFR 70.6(a)(8)]

Emergency

In accordance with IDAPA 58.01.01.332, an “emergency” as defined in IDAPA 58.01.01.008, constitutes an affirmative defense to an action brought for noncompliance with such technology-based emissions limitation if the conditions of IDAPA 58.01.01.332.02 are met.

[IDAPA 58.01.01.332.01, 4/5/00; 40 CFR 70.6(g)]

7. REGULATORY REVIEW

7.1 Attainment Designation (40 CFR 81.313)

The facility is located in Bonneville County which is designated as attainment or unclassifiable for PM₁₀, PM_{2.5}, CO, NO₂, SO_x, and Ozone. Reference 40 CFR 81.313.

7.2 Title V Classification (IDAPA 58.01.01.300, 40 CFR Part 70)

The facility is required to obtain a Title V Operating Permit in accordance with permitting requirements in IDAPA 58.01.01.859 – Standards of Performance for Municipal Solid Waste Landfills that Commenced Construction, Reconstruction or Modification on or after May 30, 1991, and 40 CFR 60 Subpart WWW – Standards of Performance for Municipal Solid Waste Landfills because it has a design capacity greater than 2.5 million Mg.

7.3 PSD Classification (40 CFR 52.21)

Peterson Hill Landfill operations do not have a potential to emit that exceeds 250 tons per year of any criteria pollutants and is not a designated source. Therefore, it is not a PSD facility.

7.4 NSPS Applicability (40 CFR 60)

Peterson Hill Landfill operations are subject to New Source Performance Standards (NSPS) of 40 CFR 60, Subpart WWW Standards of Performance for Municipal Solid Waste Landfills. Below is a breakdown of this subpart as submitted by the applicant:

§60.750 Applicability, designation of affected facility, and delegation of authority.

(a) *The provisions of this subpart apply to each municipal solid waste landfill that commenced construction, reconstruction or modification on or after May 30, 1991. Physical or operational changes made to an existing MSW landfill solely to comply with subpart Cc of this part are not considered construction, reconstruction, or modification for the purposes of this section.*

(b) *The following authorities shall be retained by the Administrator and not transferred to the State: §60.754(a)(5).*

(c) *Activities required by or conducted pursuant to a CERCLA, RCRA, or State remedial action are not considered construction, reconstruction, or modification for purposes of this subpart.*

The PHL is subject to 40 CFR Part 60 Subpart WWW. It was constructed in 1993.

§60.751 Definitions.

As used in this subpart, all terms not defined herein shall have the meaning given them in the Act or in subpart A of this part.

Bonneville County has read and understands these definitions and has used them in them in providing this regulatory analysis.

§60.752 Standards for air emissions from municipal solid waste landfills.

(a) *Each owner or operator of an MSW landfill having a design capacity less than 2.5 million megagrams by mass or 2.5 million cubic meters by volume shall submit an initial design capacity report to the Administrator as provided in §60.757(a). The landfill may calculate design capacity in either megagrams or cubic meters for comparison with the exemption values. Any density conversions shall be documented and submitted with the report. Submittal of the initial design capacity report shall fulfill the requirements of this subpart except as provided for in paragraphs (a)(1) and (a)(2) of this section.*

(1) *The owner or operator shall submit to the Administrator an amended design capacity report, as provided for in §60.757(a)(3).*

(2) *When an increase in the maximum design capacity of a landfill exempted from the provisions of §60.752(b) through §60.759 of this subpart on the basis of the design capacity exemption in paragraph (a) of this section results in a revised maximum design capacity equal to or greater than 2.5 million megagrams and 2.5 million cubic meters, the owner or operator shall comply with the provision of paragraph (b) of this section.*

(b) Each owner or operator of an MSW landfill having a design capacity equal to or greater than 2.5 million megagrams and 2.5 million cubic meters, shall either comply with paragraph (b)(2) of this section or calculate an NMOC emission rate for the landfill using the procedures specified in §60.754. The NMOC emission rate shall be recalculated annually, except as provided in §60.757(b)(1)(ii) of this subpart. The owner or operator of an MSW landfill subject to this subpart with a design capacity greater than or equal to 2.5 million megagrams and 2.5 million cubic meters is subject to part 70 or 71 permitting requirements.

(1) If the calculated NMOC emission rate is less than 50 megagrams per year, the owner or operator shall:

(i) Submit an annual emission report to the Administrator, except as provided for in §60.757(b)(1)(ii); and

(ii) Recalculate the NMOC emission rate annually using the procedures specified in §60.754(a)(1) until such time as the calculated NMOC emission rate is equal to or greater than 50 megagrams per year, or the landfill is closed.

(A) If the NMOC emission rate, upon recalculation required in paragraph (b)(1)(ii) of this section, is equal to or greater than 50 megagrams per year, the owner or operator shall install a collection and control system in compliance with paragraph (b)(2) of this section.

(B) If the landfill is permanently closed, a closure notification shall be submitted to the Administrator as provided for in §60.757(d).

(2) If the calculated NMOC emission rate is equal to or greater than 50 megagrams per year, the owner or operator shall:

(i) Submit a collection and control system design plan prepared by a professional engineer to the Administrator within 1 year:

(A) The collection and control system as described in the plan shall meet the design requirements of paragraph (b)(2)(ii) of this section.

(B) The collection and control system design plan shall include any alternatives to the operational standards, test methods, procedures, compliance measures, monitoring, recordkeeping or reporting provisions of §§60.753 through 60.758 proposed by the owner or operator.

(C) The collection and control system design plan shall either conform with specifications for active collection systems in §60.759 or include a demonstration to the Administrator's satisfaction of the sufficiency of the alternative provisions to §60.759.

(D) The Administrator shall review the information submitted under paragraphs (b)(2)(i) (A), (B) and (C) of this section and either approve it, disapprove it, or request that additional information be submitted. Because of the many site-specific factors involved with landfill gas system design, alternative systems may be necessary. A wide variety of system designs are possible, such as vertical wells, combination horizontal and vertical collection systems, or horizontal trenches only, leachate collection components, and passive systems.

(ii) Install a collection and control system that captures the gas generated within the landfill as required by paragraphs (b)(2)(i)(A) or (B) and (b)(2)(iii) of this section within 30 months after the first annual report in which the emission rate equals or exceeds 50 megagrams per year, unless Tier 2 or Tier 3 sampling demonstrates that the emission rate is less than 50 megagrams per year, as specified in §60.757(c)(1) or (2).

(A) An active collection system shall:

(1) Be designed to handle the maximum expected gas flow rate from the entire area of the landfill that warrants control over the intended use period of the gas control or treatment system equipment;

(2) Collect gas from each area, cell, or group of cells in the landfill in which the initial solid waste has been placed for a period of:

- (i) 5 years or more if active; or
- (ii) 2 years or more if closed or at final grade.

(3) Collect gas at a sufficient extraction rate;

(4) Be designed to minimize off-site migration of subsurface gas.

(B) A passive collection system shall:

(1) Comply with the provisions specified in paragraphs (b)(2)(ii)(A)(1), (2), and (2)(ii)(A)(4) of this section.

(2) Be installed with liners on the bottom and all sides in all areas in which gas is to be collected. The liners shall be installed as required under §258.40.

(iii) Route all the collected gas to a control system that complies with the requirements in either paragraph (b)(2)(iii) (A), (B) or (C) of this section.

(A) An open flare designed and operated in accordance with §60.18 except as noted in §60.754(e);

(B) A control system designed and operated to reduce NMOC by 98 weight-percent, or, when an enclosed combustion device is used for control, to either reduce NMOC by 98 weight percent or reduce the outlet NMOC concentration to less than 20 parts per million by volume, dry basis as hexane at 3 percent oxygen. The reduction efficiency or parts per million by volume shall be established by an initial performance test to be completed no later than 180 days after the initial startup of the approved control system using the test methods specified in §60.754(d).

(1) If a boiler or process heater is used as the control device, the landfill gas stream shall be introduced into the flame zone.

(2) The control device shall be operated within the parameter ranges established during the initial or most recent performance test. The operating parameters to be monitored are specified in §60.756;

(C) Route the collected gas to a treatment system that processes the collected gas for subsequent sale or use. All emissions from any atmospheric vent from the gas treatment system shall be subject to the requirements of paragraph (b)(2)(iii) (A) or (B) of this section.

(iv) Operate the collection and control device installed to comply with this subpart in accordance with the provisions of §§60.753, 60.755 and 60.756.

(v) The collection and control system may be capped or removed provided that all the conditions of paragraphs (b)(2)(v) (A), (B), and (C) of this section are met:

(A) The landfill shall be a closed landfill as defined in §60.751 of this subpart. A closure report shall be submitted to the Administrator as provided in §60.757(d);

(B) The collection and control system shall have been in operation a minimum of 15 years; and

(C) Following the procedures specified in §60.754(b) of this subpart, the calculated NMOC gas produced by the landfill shall be less than 50 megagrams per year on three successive test dates. The test dates shall be no less than 90 days apart, and no more than 180 days apart.

(c) For purposes of obtaining an operating permit under title V of the Act, the owner or operator of a MSW landfill subject to this subpart with a design capacity less than 2.5 million megagrams or 2.5 million cubic meters is not subject to the requirement to obtain an operating permit for the landfill under part 70 or 71 of this chapter, unless the landfill is otherwise subject to either part 70 or 71. For purposes of submitting a timely application for an operating permit under part 70 or 71, the owner or operator of a MSW landfill subject to this subpart with a design capacity greater than or equal to 2.5 million megagrams and 2.5 million cubic meters, and not otherwise subject to either part 70 or 71, becomes

subject to the requirements of §§70.5(a)(1)(i) or 71.5(a)(1)(i) of this chapter, regardless of when the design capacity report is actually submitted, no later than:

(1) June 10, 1996 for MSW landfills that commenced construction, modification, or reconstruction on or after May 30, 1991 but before March 12, 1996;

(2) Ninety days after the date of commenced construction, modification, or reconstruction for MSW landfills that commence construction, modification, or reconstruction on or after March 12, 1996.

(d) When a MSW landfill subject to this subpart is closed, the owner or operator is no longer subject to the requirement to maintain an operating permit under part 70 or 71 of this chapter for the landfill if the landfill is not otherwise subject to the requirements of either part 70 or 71 and if either of the following conditions are met:

(1) The landfill was never subject to the requirement for a control system under paragraph (b)(2) of this section; or

(2) The owner or operator meets the conditions for control system removal specified in paragraph (b)(2)(v) of this section.

[61 FR 9919, Mar. 12, 1996, as amended at 63 FR 32751, June 16, 1998; 65 FR 18908, Apr. 10, 2000; 71 FR 55127, Sept. 21, 2006]

Each owner or operator of an MSW landfill with a gas collection and control system used to comply with the provisions of §60.752(b)(2)(ii) of this subpart shall:

(a) Operate the collection system such that gas is collected from each area, cell, or group of cells in the MSW landfill in which solid waste has been in place for:

(b) Operate the collection system with negative pressure at each wellhead except under the following conditions:

(c) Operate each interior wellhead in the collection system with a landfill gas temperature less than 55°C and with either a nitrogen level less than 20 percent or an oxygen level less than 5 percent. The owner or operator may establish a higher operating temperature, nitrogen, or oxygen value at a particular well. A higher operating value demonstration shall show supporting data that the elevated parameter does not cause fires or significantly inhibit anaerobic decomposition by killing methanogens.

(d) Operate the collection system so that the methane concentration is less than 500 parts per million above background at the surface of the landfill. To determine if this level is exceeded, the owner or operator shall conduct surface testing around the perimeter of the collection area and along a pattern that traverses the landfill at 30 meter intervals and where visual observations indicate elevated concentrations of landfill gas, such as distressed vegetation and cracks or seeps in the cover. The owner or operator may establish an alternative traversing pattern that ensures equivalent coverage. A surface monitoring design plan shall be developed that includes a topographical map with the monitoring route and the rationale for any site-specific deviations from the 30 meter intervals. Areas with steep slopes or other dangerous areas may be excluded from the surface testing.

(e) Operate the system such that all collected gases are vented to a control system designed and operated in compliance with §60.752(b)(2)(iii). In the event the collection or control system is inoperable, the gas mover system shall be shut down and all valves in the collection and control system contributing to venting of the gas to the atmosphere shall be closed within 1 hour; and

(f) Operate the control or treatment system at all times when the collected gas is routed to the system.

(g) If monitoring demonstrates that the operational requirements in paragraphs (b), (c), or (d) of this section are not met, corrective action shall be taken as specified in §60.755(a)(3) through (5) or §60.755(c) of this subpart. If corrective actions are taken as specified in §60.755, the monitored exceedance is not a violation of the operational requirements in this section.

The PHL design capacity is greater than 2.5 million m³ and 2.5 million Mg, and therefore, is a designated facility and subject to NSPS. Tier 2 NMOC testing occurred in August 2017 and resulted in an CNMOC of 729 ppmv (as hexane). The current NMOC mass emissions rate is 25 Mg/yr, below the 50 Mg/yr-threshold. Therefore, no gas collection and control system is required. The purpose of the enclosed application is to obtain a Title V permit under these Federal rules and IDAPA 58.01.01.300 – 399

§60.753 Operational standards for collection and control systems.

Each owner or operator of an MSW landfill with a gas collection and control system used to comply with the provisions of §60.752(b)(2)(ii) of this subpart shall:

(a) Operate the collection system such that gas is collected from each area, cell, or group of cells in the MSW landfill in which solid waste has been in place for:

- (1) 5 years or more if active; or*
- (2) 2 years or more if closed or at final grade;*

(b) Operate the collection system with negative pressure at each wellhead except under the following conditions:

- (1) A fire or increased well temperature. The owner or operator shall record instances when positive pressure occurs in efforts to avoid a fire. These records shall be submitted with the annual reports as provided in §60.757(f)(1);*
- (2) Use of a geomembrane or synthetic cover. The owner or operator shall develop acceptable pressure limits in the design plan;*
- (3) A decommissioned well. A well may experience a static positive pressure after shut down to accommodate for declining flows. All design changes shall be approved by the Administrator;*
- (c) Operate each interior wellhead in the collection system with a landfill gas temperature less than 55 °C and with either a nitrogen level less than 20 percent or an oxygen level less than 5 percent. The owner or operator may establish a higher operating temperature, nitrogen, or oxygen value at a particular well. A higher operating value demonstration shall show supporting data that the elevated parameter does not cause fires or significantly inhibit anaerobic decomposition by killing methanogens.*

(1) The nitrogen level shall be determined using Method 3C, unless an alternative test method is established as allowed by §60.752(b)(2)(i) of this subpart.

(2) Unless an alternative test method is established as allowed by §60.752(b)(2)(i) of this subpart, the oxygen shall be determined by an oxygen meter using Method 3A or 3C except that:

- (i) The span shall be set so that the regulatory limit is between 20 and 50 percent of the span;*
- (ii) A data recorder is not required;*
- (iii) Only two calibration gases are required, a zero and span, and ambient air may be used as the span;*
- (iv) A calibration error check is not required;*
- (v) The allowable sample bias, zero drift, and calibration drift are ±10 percent.*

(d) Operate the collection system so that the methane concentration is less than 500 parts per million above background at the surface of the landfill. To determine if this level is exceeded, the owner or operator shall conduct surface testing around the perimeter of the collection area and along a pattern that traverses the landfill at 30 meter intervals and where visual observations indicate elevated concentrations of landfill gas, such as distressed vegetation and cracks or seeps in the cover. The owner or operator may establish an alternative traversing pattern that ensures equivalent coverage. A surface monitoring design plan shall be developed that includes a topographical map with the monitoring route

and the rationale for any site-specific deviations from the 30 meter intervals. Areas with steep slopes or other dangerous areas may be excluded from the surface testing.

(e) Operate the system such that all collected gases are vented to a control system designed and operated in compliance with §60.752(b)(2)(iii). In the event the collection or control system is inoperable, the gas mover system shall be shut down and all valves in the collection and control system contributing to venting of the gas to the atmosphere shall be closed within 1 hour; and

(f) Operate the control or treatment system at all times when the collected gas is routed to the system.

(g) If monitoring demonstrates that the operational requirements in paragraphs (b), (c), or (d) of this section are not met, corrective action shall be taken as specified in §60.755(a)(3) through (5) or §60.755(c) of this subpart. If corrective actions are taken as specified in §60.755, the monitored exceedance is not a violation of the operational requirements in this section.

Bonneville County is aware of these operational standards for gas collection and control systems and will implement them at the PHL when such a system is required. §60.755 Compliance provisions.

§60.754 Test methods and procedures.

(a)(1) The landfill owner or operator shall calculate the NMOC emission rate using either the equation provided in paragraph (a)(1)(i) of this section or the equation provided in paragraph (a)(1)(ii) of this section. Both equations may be used if the actual year-to-year solid waste acceptance rate is known, as specified in paragraph (a)(1)(i), for part of the life of the landfill and the actual year-to-year solid waste acceptance rate is unknown, as specified in paragraph (a)(1)(ii), for part of the life of the landfill. The values to be used in both equations are 0.05 per year for k , 170 cubic meters per megagram for L_0 , and 4,000 parts per million by volume as hexane for the CNMOC. For landfills located in geographical areas with a thirty year annual average precipitation of less than 25 inches, as measured at the nearest representative official meteorologic site, the k value to be used is 0.02 per year.

(i) The following equation shall be used if the actual year-to-year solid waste acceptance rate is known.

$$M_{NMOC} = \sum_{i=1}^n 2 k L_0 M_i (e^{-kt_i}) (C_{NMOC}) (3.6 \times 10^{-9})$$

where,

M_{NMOC} = Total NMOC emission rate from the landfill, megagrams per year

k = methane generation rate constant, year⁻¹

L_0 = methane generation potential, cubic meters per megagram solid waste

M_i = mass of solid waste in the i th section, megagrams

t_i = age of the i th section, years

CNMOC = concentration of NMOC, parts per million by volume as hexane

3.6×10^{-9} = conversion factor

The mass of nondegradable solid waste may be subtracted from the total mass of solid waste in a particular section of the landfill when calculating the value for M_i if documentation of the nature and amount of such wastes is maintained

(ii) The following equation shall be used if the actual year-to-year solid waste acceptance rate is unknown.

$$MNMOC = 2Lo R (e^{-kc} - e^{-kt}) CNMOC (3.6 \times 10^{-9})$$

Where:

$MNMOC$ = mass emission rate of NMOC, megagrams per year

Lo = methane generation potential, cubic meters per megagram solid waste

R = average annual acceptance rate, megagrams per year

k = methane generation rate constant, year⁻¹

t = age of landfill, years

$CNMOC$ = concentration of NMOC, parts per million by volume as hexane

c = time since closure, years; for active landfill $c = 0$ and $e^{-kc} = 1$

3.6×10^{-9} = conversion factor

The mass of nondegradable solid waste may be subtracted from the total mass of solid waste in a particular section of the landfill when calculating the value of R , if documentation of the nature and amount of such wastes is maintained.

(2) Tier 1. The owner or operator shall compare the calculated NMOC mass emission rate to the standard of 50 megagrams per year.

(i) If the NMOC emission rate calculated in paragraph (a)(1) of this section is less than 50 megagrams per year, then the landfill owner shall submit an emission rate report as provided in §60.757(b)(1), and shall recalculate the NMOC mass emission rate annually as required under §60.752(b)(1).

(ii) If the calculated NMOC emission rate is equal to or greater than 50 megagrams per year, then the landfill owner shall either comply with §60.752(b)(2), or determine a site-specific NMOC concentration and recalculate the NMOC emission rate using the procedures provided in paragraph (a)(3) of this section.

(3) Tier 2. The landfill owner or operator shall determine the NMOC concentration using the following sampling procedure. The landfill owner or operator shall install at least two sample probes per hectare of landfill surface that has retained waste for at least 2 years. If the landfill is larger than 25 hectares in area, only 50 samples are required. The sample probes should be located to avoid known areas of nondegradable solid waste. The owner or operator shall collect and analyze one sample of landfill gas from each probe to determine the NMOC concentration using Method 25 or 25C of appendix A of this part. Method 18 of appendix A of this part may be used to analyze the samples collected by the Method 25 or 25C sampling procedure. Taking composite samples from different probes into a single cylinder is allowed; however, equal sample volumes must be taken from each probe. For each composite, the sampling rate, collection times, beginning and ending cylinder vacuums, or alternative volume measurements must be recorded to verify that composite volumes are equal. Composite sample volumes should not be less than one liter unless evidence can be provided to substantiate the accuracy of smaller volumes. Terminate compositing before the cylinder approaches ambient pressure where measurement accuracy diminishes. If using Method 18, the owner or operator must identify all compounds in the sample and, as a minimum, test for those compounds published in the most recent Compilation of Air Pollutant Emission Factors (AP-42), minus carbon monoxide, hydrogen sulfide, and mercury. As a minimum, the instrument must be calibrated for each of the compounds on the list. Convert the concentration of each Method 18 compound to CNMOC as hexane by multiplying by the ratio of its carbon atoms divided by six. If more than the required number of samples are taken, all samples must be used in the analysis. The landfill owner or operator must divide the NMOC concentration from Method 25 or 25C of appendix A of this part by six to convert from CNMOC as carbon to CNMOC as hexane. If the landfill has an active or passive gas removal system in place, Method 25 or 25C samples may be collected from these systems instead of surface probes provided the removal system can be shown to provide sampling as representative as the two sampling probe per hectare requirement. For active collection systems, samples may be collected from the common header pipe before the gas moving or

condensate removal equipment. For these systems, a minimum of three samples must be collected from the header pipe.

(i) The landfill owner or operator shall recalculate the NMOC mass emission rate using the equations provided in paragraph (a)(1)(i) or (a)(1)(ii) of this section and using the average NMOC concentration from the collected samples instead of the default value in the equation provided in paragraph (a)(1) of this section.

(ii) If the resulting mass emission rate calculated using the site-specific NMOC concentration is equal to or greater than 50 megagrams per year, then the landfill owner or operator shall either comply with §60.752(b)(2), or determine the site-specific methane generation rate constant and recalculate the NMOC emission rate using the site-specific methane generation rate using the procedure specified in paragraph (a)(4) of this section.

(iii) If the resulting NMOC mass emission rate is less than 50 megagrams per year, the owner or operator shall submit a periodic estimate of the emission rate report as provided in §60.757(b)(1) and retest the site-specific NMOC concentration every 5 years using the methods specified in this section.

(4) Tier 3. The site-specific methane generation rate constant shall be determined using the procedures provided in Method 2E of appendix A of this part. The landfill owner or operator shall estimate the NMOC mass emission rate using equations in paragraph (a)(1)(i) or (a)(1)(ii) of this section and using a site-specific methane generation rate constant k , and the site-specific NMOC concentration as determined in paragraph (a)(3) of this section instead of the default values provided in paragraph (a)(1) of this section. The landfill owner or operator shall compare the resulting NMOC mass emission rate to the standard of 50 megagrams per year.

(i) If the NMOC mass emission rate as calculated using the site-specific methane generation rate and concentration of NMOC is equal to or greater than 50 megagrams per year, the owner or operator shall comply with §60.752(b)(2).

(ii) If the NMOC mass emission rate is less than 50 megagrams per year, then the owner or operator shall submit a periodic emission rate report as provided in §60.757(b)(1) and shall recalculate the NMOC mass emission rate annually, as provided in §60.757(b)(1) using the equations in paragraph (a)(1) of this section and using the site-specific methane generation rate constant and NMOC concentration obtained in paragraph (a)(3) of this section. The calculation of the methane generation rate constant is performed only once, and the value obtained from this test shall be used in all subsequent annual NMOC emission rate calculations.

(5) The owner or operator may use other methods to determine the NMOC concentration or a site-specific k as an alternative to the methods required in paragraphs (a)(3) and (a)(4) of this section if the method has been approved by the Administrator.

(b) After the installation of a collection and control system in compliance with §60.755, the owner or operator shall calculate the NMOC emission rate for purposes of determining when the system can be removed as provided in §60.752(b)(2)(v), using the following equation:

$$MNMOC = 1.89 \times 10^{-3} QLFG CNMOC$$

where,

$MNMOC$ = mass emission rate of NMOC, megagrams per year

$QLFG$ = flow rate of landfill gas, cubic meters per minute

$CNMOC$ = NMOC concentration, parts per million by volume as hexane

(1) The flow rate of landfill gas, $QLFG$, shall be determined by measuring the total landfill gas flow rate at the common header pipe that leads to the control device using a gas flow measuring device calibrated according to the provisions of section 4 of Method 2E of appendix A of this part.

(2) The average NMOC concentration, CNMOC, shall be determined by collecting and analyzing landfill gas sampled from the common header pipe before the gas moving or condensate removal equipment using the procedures in Method 25C or Method 18 of appendix A of this part. If using Method 18 of appendix A of this part, the minimum list of compounds to be tested shall be those published in the most recent Compilation of Air Pollutant Emission Factors (AP-42). The sample location on the common header pipe shall be before any condensate removal or other gas refining units. The landfill owner or operator shall divide the NMOC concentration from Method 25C of appendix A of this part by six to convert from CNMOC as carbon to CNMOC as hexane.

(3) The owner or operator may use another method to determine landfill gas flow rate and NMOC concentration if the method has been approved by the Administrator.

(c) When calculating emissions for PSD purposes, the owner or operator of each MSW landfill subject to the provisions of this subpart shall estimate the NMOC emission rate for comparison to the PSD major source and significance levels in §§51.166 or 52.21 of this chapter using AP-42 or other approved measurement procedures.

(d) For the performance test required in §60.752(b)(2)(iii)(B), Method 25, 25C, or Method 18 of appendix A of this part must be used to determine compliance with the 98 weight-percent efficiency or the 20 ppmv outlet concentration level, unless another method to demonstrate compliance has been approved by the Administrator as provided by §60.752(b)(2)(i)(B). Method 3 or 3A shall be used to determine oxygen for correcting the NMOC concentration as hexane to 3 percent. In cases where the outlet concentration is less than 50 ppm NMOC as carbon (8 ppm NMOC as hexane), Method 25A should be used in place of Method 25. If using Method 18 of appendix A of this part, the minimum list of compounds to be tested shall be those published in the most recent Compilation of Air Pollutant Emission Factors (AP-42). The following equation shall be used to calculate efficiency:

$$\text{Control Efficiency} = (\text{NMOC}_{\text{in}} - \text{NMOC}_{\text{out}}) / (\text{NMOC}_{\text{in}})$$

where,

NMOC_{in} = mass of NMOC entering control device

NMOC_{out} = mass of NMOC exiting control device

(e) For the performance test required in §60.752(b)(2)(iii)(A), the net heating value of the combusted landfill gas as determined in §60.18(f)(3) is calculated from the concentration of methane in the landfill gas as measured by Method 3C. A minimum of three 30-minute Method 3C samples are determined. The measurement of other organic components, hydrogen, and carbon monoxide is not applicable. Method 3C may be used to determine the landfill gas molecular weight for calculating the flare gas exit velocity under §60.18(f)(4).

[61 FR 9919, Mar. 12, 1996, as amended at 63 FR 32751, June 16, 1998; 65 FR 18908, Apr. 10, 2000; 65 FR 61778, Oct. 17, 2000; 71 FR 55127, Sept. 21, 2006]

Tier 2 NMOC testing occurred in August 2017 and resulted in an CNMOC of 729 ppmV (as hexane). The current NMOC mass emissions rate is 25 Mg/yr using the equations and methods herein, which is below the 50 Mg/yr-threshold. Therefore, no gas collection and control system is required. The next Tier 2 testing is scheduled for 2022. Bonneville County is aware of these test methods and procedures and will continue to implement those that apply now and will adhere to the applicable requirements in the future when a collection and control system is required.

§60.755 Compliance provisions.

(a) Except as provided in §60.752(b)(2)(i)(B), the specified methods in paragraphs (a)(1) through (a)(6) of this section shall be used to determine whether the gas collection system is in compliance with §60.752(b)(2)(ii).

(1) For the purposes of calculating the maximum expected gas generation flow rate from the landfill to determine compliance with §60.752(b)(2)(ii)(A)(1), one of the following equations shall be used. The k and L_0 kinetic factors should be those published in the most recent Compilation of Air Pollutant Emission Factors (AP-42) or other site specific values demonstrated to be appropriate and approved by the Administrator. If k has been determined as specified in §60.754(a)(4), the value of k determined from the test shall be used. A value of no more than 15 years shall be used for the intended use period of the gas mover equipment. The active life of the landfill is the age of the landfill plus the estimated number of years until closure.

(i) For sites with unknown year-to-year solid waste acceptance rate:

$$Q_m = 2L_0 R (e^{-kc} - e^{-kt})$$

where,

Q_m = maximum expected gas generation flow rate, cubic meters per year

L_0 = methane generation potential, cubic meters per megagram solid waste

R = average annual acceptance rate, megagrams per year

k = methane generation rate constant, year⁻¹

t = age of the landfill at equipment installation plus the time the owner or operator intends to use the gas mover equipment or active life of the landfill, whichever is less. If the equipment is installed after closure, t is the age of the landfill at installation, years

c = time since closure, years (for an active landfill $c = 0$ and $e^{-kc} = 1$)

(ii) For sites with known year-to-year solid waste acceptance rate:

$$Q_M = \sum_{i=1}^n 2kL_0 M_i (e^{-kt_i})$$

where,

Q_M = maximum expected gas generation flow rate, cubic meters per year

k = methane generation rate constant, year⁻¹

L_0 = methane generation potential, cubic meters per megagram solid waste

M_i = mass of solid waste in the i th section, megagrams

t_i = age of the i th section, years

(iii) If a collection and control system has been installed, actual flow data may be used to project the maximum expected gas generation flow rate instead of, or in conjunction with, the equations in paragraphs (a)(1) (i) and (ii) of this section. If the landfill is still accepting waste, the actual measured flow data will not equal the maximum expected gas generation rate, so calculations using the equations in paragraphs (a)(1) (i) or (ii) or other methods shall be used to predict the maximum expected gas generation rate over the intended period of use of the gas control system equipment.

(2) For the purposes of determining sufficient density of gas collectors for compliance with §60.752(b)(2)(ii)(A)(2), the owner or operator shall design a system of vertical wells, horizontal collectors, or other collection devices, satisfactory to the Administrator, capable of controlling and extracting gas from all portions of the landfill sufficient to meet all operational and performance standards.

(3) For the purpose of demonstrating whether the gas collection system flow rate is sufficient to determine compliance with §60.752(b)(2)(ii)(A)(3), the owner or operator shall measure gauge pressure in the gas collection header at each individual well, monthly. If a positive pressure exists, action shall be initiated to correct the exceedance within 5 calendar days, except for the three conditions allowed under §60.753(b). If negative pressure cannot be achieved without excess air infiltration within 15 calendar days of the first measurement, the gas collection system shall be expanded to correct the exceedance within 120 days of the initial measurement of positive pressure. Any attempted corrective measure shall not cause exceedances of other operational or performance standards. An alternative timeline for correcting the exceedance may be submitted to the Administrator for approval.

(4) Owners or operators are not required to expand the system as required in paragraph (a)(3) of this section during the first 180 days after gas collection system startup.

(5) For the purpose of identifying whether excess air infiltration into the landfill is occurring, the owner or operator shall monitor each well monthly for temperature and nitrogen or oxygen as provided in §60.753(c). If a well exceeds one of these operating parameters, action shall be initiated to correct the exceedance within 5 calendar days. If correction of the exceedance cannot be achieved within 15 calendar days of the first measurement, the gas collection system shall be expanded to correct the exceedance within 120 days of the initial exceedance. Any attempted corrective measure shall not cause exceedances of other operational or performance standards. An alternative timeline for correcting the exceedance may be submitted to the Administrator for approval.

(6) An owner or operator seeking to demonstrate compliance with §60.752(b)(2)(ii)(A)(4) through the use of a collection system not conforming to the specifications provided in §60.759 shall provide information satisfactory to the Administrator as specified in §60.752(b)(2)(i)(C) demonstrating that off-site migration is being controlled.

(b) For purposes of compliance with §60.753(a), each owner or operator of a controlled landfill shall place each well or design component as specified in the approved design plan as provided in §60.752(b)(2)(i). Each well shall be installed no later than 60 days after the date on which the initial solid waste has been in place for a period of:

(1) 5 years or more if active; or

(2) 2 years or more if closed or at final grade.

(c) The following procedures shall be used for compliance with the surface methane operational standard as provided in §60.753(d).

(1) After installation of the collection system, the owner or operator shall monitor surface concentrations of methane along the entire perimeter of the collection area and along a pattern that traverses the landfill at 30 meter intervals (or a site-specific established spacing) for each collection area on a quarterly basis using an organic vapor analyzer, flame ionization detector, or other portable monitor meeting the specifications provided in paragraph (d) of this section.

(2) The background concentration shall be determined by moving the probe inlet upwind and downwind outside the boundary of the landfill at a distance of at least 30 meters from the perimeter wells.

(3) Surface emission monitoring shall be performed in accordance with section 4.3.1 of Method 21 of appendix A of this part, except that the probe inlet shall be placed within 5 to 10 centimeters of the ground. Monitoring shall be performed during typical meteorological conditions.

(4) Any reading of 500 parts per million or more above background at any location shall be recorded as a monitored exceedance and the actions specified in paragraphs (c)(4) (i) through (v) of this section shall be taken. As long as the specified actions are taken, the exceedance is not a violation of the operational requirements of §60.753(d).

(i) The location of each monitored exceedance shall be marked and the location recorded.

(ii) Cover maintenance or adjustments to the vacuum of the adjacent wells to increase the gas collection in the vicinity of each exceedance shall be made and the location shall be re-monitored within 10 calendar days of detecting the exceedance.

(iii) If the re-monitoring of the location shows a second exceedance, additional corrective action shall be taken and the location shall be monitored again within 10 days of the second exceedance. If the re-monitoring shows a third exceedance for the same location, the action specified in paragraph (c)(4)(v) of this section shall be taken, and no further monitoring of that location is required until the action specified in paragraph (c)(4)(v) has been taken.

(iv) Any location that initially showed an exceedance but has a methane concentration less than 500 ppm methane above background at the 10-day re-monitoring specified in paragraph (c)(4) (ii) or (iii) of this section shall be re-monitored 1 month from the initial exceedance. If the 1-month re-monitoring shows a concentration less than 500 parts per million above background, no further monitoring of that location is required until the next quarterly monitoring period. If the 1-month re-monitoring shows an exceedance, the actions specified in paragraph (c)(4) (iii) or (v) shall be taken.

(v) For any location where monitored methane concentration equals or exceeds 500 parts per million above background three times within a quarterly period, a new well or other collection device shall be installed within 120 calendar days of the initial exceedance. An alternative remedy to the exceedance, such as upgrading the blower, header pipes or control device, and a corresponding timeline for installation may be submitted to the Administrator for approval.

(5) The owner or operator shall implement a program to monitor for cover integrity and implement cover repairs as necessary on a monthly basis.

(d) Each owner or operator seeking to comply with the provisions in paragraph (c) of this section shall comply with the following instrumentation specifications and procedures for surface emission monitoring devices:

(1) The portable analyzer shall meet the instrument specifications provided in section 3 of Method 21 of appendix A of this part, except that "methane" shall replace all references to VOC.

(2) The calibration gas shall be methane, diluted to a nominal concentration of 500 parts per million in air.

(3) To meet the performance evaluation requirements in section 3.1.3 of Method 21 of appendix A of this part, the instrument evaluation procedures of section 4.4 of Method 21 of appendix A of this part shall be used.

(4) The calibration procedures provided in section 4.2 of Method 21 of appendix A of this part shall be followed immediately before commencing a surface monitoring survey.

(e) The provisions of this subpart apply at all times, except during periods of start-up, shutdown, or malfunction, provided that the duration of start-up, shutdown, or malfunction shall not exceed 5 days for collection systems and shall not exceed 1 hour for treatment or control devices.

Bonneville County is aware of these compliance provisions and will include them into operations and maintenance when a gas collection and control system is required at the PHL

§60.756 Monitoring of operations.

Except as provided in §60.752(b)(2)(i)(B),

(a) Each owner or operator seeking to comply with §60.752(b)(2)(ii)(A) for an active gas collection system shall install a sampling port and a thermometer, other temperature measuring device, or an access port for temperature measurements at each wellhead and:

(1) Measure the gauge pressure in the gas collection header on a monthly basis as provided in §60.755(a)(3); and

(2) Monitor nitrogen or oxygen concentration in the landfill gas on a monthly basis as provided in §60.755(a)(5); and

(3) Monitor temperature of the landfill gas on a monthly basis as provided in §60.755(a)(5).

(b) Each owner or operator seeking to comply with §60.752(b)(2)(iii) using an enclosed combustor shall calibrate, maintain, and operate according to the manufacturer's specifications, the following equipment.

(1) A temperature monitoring device equipped with a continuous recorder and having a minimum accuracy of ± 1 percent of the temperature being measured expressed in degrees Celsius or ± 0.5 degrees Celsius, whichever is greater. A temperature monitoring device is not required for boilers or process heaters with design heat input capacity equal to or greater than 44 megawatts.

(2) A device that records flow to or bypass of the control device. The owner or operator shall either:

(i) Install, calibrate, and maintain a gas flow rate measuring device that shall record the flow to the control device at least every 15 minutes; or

(ii) Secure the bypass line valve in the closed position with a car-seal or a lock-and-key type configuration. A visual inspection of the seal or closure mechanism shall be performed at least once every month to ensure that the valve is maintained in the closed position and that the gas flow is not diverted through the bypass line.

(c) Each owner or operator seeking to comply with §60.752(b)(2)(iii) using an open flare shall install, calibrate, maintain, and operate according to the manufacturer's specifications the following equipment:

(1) A heat sensing device, such as an ultraviolet beam sensor or thermocouple, at the pilot light or the flame itself to indicate the continuous presence of a flame.

(2) A device that records flow to or bypass of the flare. The owner or operator shall either:

(i) Install, calibrate, and maintain a gas flow rate measuring device that shall record the flow to the control device at least every 15 minutes; or

(ii) Secure the bypass line valve in the closed position with a car-seal or a lock-and-key type configuration. A visual inspection of the seal or closure mechanism shall be performed at least once every

month to ensure that the valve is maintained in the closed position and that the gas flow is not diverted through the bypass line.

(d) Each owner or operator seeking to demonstrate compliance with §60.752(b)(2)(iii) using a device other than an open flare or an enclosed combustor shall provide information satisfactory to the Administrator as provided in §60.752(b)(2)(i)(B) describing the operation of the control device, the operating parameters that would indicate proper performance, and appropriate monitoring procedures. The Administrator shall review the information and either approve it, or request that additional information be submitted. The Administrator may specify additional appropriate monitoring procedures.

(e) Each owner or operator seeking to install a collection system that does not meet the specifications in §60.759 or seeking to monitor alternative parameters to those required by §§60.753 through 60.756 shall provide information satisfactory to the Administrator as provided in §60.752(b)(2)(i)(B) and (C) describing the design and operation of the collection system, the operating parameters that would indicate proper performance, and appropriate monitoring procedures. The Administrator may specify additional appropriate monitoring procedures.

(f) Each owner or operator seeking to demonstrate compliance with §60.755(c), shall monitor surface concentrations of methane according to the instrument specifications and procedures provided in §60.755(d). Any closed landfill that has no monitored exceedances of the operational standard in three consecutive quarterly monitoring periods may skip to annual monitoring. Any methane reading of 500 ppm or more above background detected during the annual monitoring returns the frequency for that landfill to quarterly monitoring.

[61 FR 9919, Mar. 12, 1996, as amended at 63 FR 32752, June 16, 1998; 65 FR 18909, Apr. 10, 2000]
Bonneville County is aware of these monitoring requirements for operation of a gas collection and control system and will implement them when such a system is required at the PHL.

§60.757 Reporting requirements.

Except as provided in §60.752(b)(2)(i)(B),

(a) Each owner or operator subject to the requirements of this subpart shall submit an initial design capacity report to the Administrator.

(1) The initial design capacity report shall fulfill the requirements of the notification of the date construction is commenced as required by §60.7(a)(1) and shall be submitted no later than:

(i) June 10, 1996, for landfills that commenced construction, modification, or reconstruction on or after May 30, 1991 but before March 12, 1996 or

(ii) Ninety days after the date of commenced construction, modification, or reconstruction for landfills that commence construction, modification, or reconstruction on or after March 12, 1996.

(2) The initial design capacity report shall contain the following information:

(i) A map or plot of the landfill, providing the size and location of the landfill, and identifying all areas where solid waste may be landfilled according to the permit issued by the State, local, or tribal agency responsible for regulating the landfill.

(ii) The maximum design capacity of the landfill. Where the maximum design capacity is specified in the permit issued by the State, local, or tribal agency responsible for regulating the landfill, a copy of the permit specifying the maximum design capacity may be submitted as part of the report. If the maximum

design capacity of the landfill is not specified in the permit, the maximum design capacity shall be calculated using good engineering practices. The calculations shall be provided, along with the relevant parameters as part of the report. The State, Tribal, local agency or Administrator may request other reasonable information as may be necessary to verify the maximum design capacity of the landfill.

(3) An amended design capacity report shall be submitted to the Administrator providing notification of an increase in the design capacity of the landfill, within 90 days of an increase in the maximum design capacity of the landfill to or above 2.5 million megagrams and 2.5 million cubic meters. This increase in design capacity may result from an increase in the permitted volume of the landfill or an increase in the density as documented in the annual recalculation required in §60.758(f).

(b) Each owner or operator subject to the requirements of this subpart shall submit an NMOC emission rate report to the Administrator initially and annually thereafter, except as provided for in paragraphs (b)(1)(ii) or (b)(3) of this section. The Administrator may request such additional information as may be necessary to verify the reported NMOC emission rate.

(1) The NMOC emission rate report shall contain an annual or 5-year estimate of the NMOC emission rate calculated using the formula and procedures provided in §60.754(a) or (b), as applicable.

(i) The initial NMOC emission rate report may be combined with the initial design capacity report required in paragraph (a) of this section and shall be submitted no later than indicated in paragraphs (b)(1)(i)(A) and (B) of this section. Subsequent NMOC emission rate reports shall be submitted annually thereafter, except as provided for in paragraphs (b)(1)(ii) and (b)(3) of this section.

(A) June 10, 1996, for landfills that commenced construction, modification, or reconstruction on or after May 30, 1991, but before March 12, 1996, or

(B) Ninety days after the date of commenced construction, modification, or reconstruction for landfills that commence construction, modification, or reconstruction on or after March 12, 1996.

(ii) If the estimated NMOC emission rate as reported in the annual report to the Administrator is less than 50 megagrams per year in each of the next 5 consecutive years, the owner or operator may elect to submit an estimate of the NMOC emission rate for the next 5-year period in lieu of the annual report. This estimate shall include the current amount of solid waste-in-place and the estimated waste acceptance rate for each year of the 5 years for which an NMOC emission rate is estimated. All data and calculations upon which this estimate is based shall be provided to the Administrator. This estimate shall be revised at least once every 5 years. If the actual waste acceptance rate exceeds the estimated waste acceptance rate in any year reported in the 5-year estimate, a revised 5-year estimate shall be submitted to the Administrator. The revised estimate shall cover the 5-year period beginning with the year in which the actual waste acceptance rate exceeded the estimated waste acceptance rate.

(2) The NMOC emission rate report shall include all the data, calculations, sample reports and measurements used to estimate the annual or 5-year emissions.

(3) Each owner or operator subject to the requirements of this subpart is exempted from the requirements of paragraphs (b)(1) and (2) of this section, after the installation of a collection and control system in compliance with §60.752(b)(2), during such time as the collection and control system is in operation and in compliance with §§60.753 and 60.755.

(c) Each owner or operator subject to the provisions of §60.752(b)(2)(i) shall submit a collection and control system design plan to the Administrator within 1 year of the first report required under paragraph (b) of this section in which the emission rate equals or exceeds 50 megagrams per year, except as follows:

(1) If the owner or operator elects to recalculate the NMOC emission rate after Tier 2 NMOC sampling and analysis as provided in §60.754(a)(3) and the resulting rate is less than 50 megagrams per year, annual periodic reporting shall be resumed, using the Tier 2 determined site-specific NMOC concentration, until the calculated emission rate is equal to or greater than 50 megagrams per year or the landfill is closed. The revised NMOC emission rate report, with the recalculated emission rate based on NMOC sampling and analysis, shall be submitted within 180 days of the first calculated exceedance of 50 megagrams per year.

(2) If the owner or operator elects to recalculate the NMOC emission rate after determining a site-specific methane generation rate constant (k), as provided in Tier 3 in §60.754(a)(4), and the resulting NMOC emission rate is less than 50 Mg/yr, annual periodic reporting shall be resumed. The resulting site-specific methane generation rate constant (k) shall be used in the emission rate calculation until such time as the emissions rate calculation results in an exceedance. The revised NMOC emission rate report based on the provisions of §60.754(a)(4) and the resulting site-specific methane generation rate constant (k) shall be submitted to the Administrator within 1 year of the first calculated emission rate exceeding 50 megagrams per year.

(d) Each owner or operator of a controlled landfill shall submit a closure report to the Administrator within 30 days of waste acceptance cessation. The Administrator may request additional information as may be necessary to verify that permanent closure has taken place in accordance with the requirements of 40 CFR 258.60. If a closure report has been submitted to the Administrator, no additional wastes may be placed into the landfill without filing a notification of modification as described under §60.7(a)(4).

(e) Each owner or operator of a controlled landfill shall submit an equipment removal report to the Administrator 30 days prior to removal or cessation of operation of the control equipment.

(1) The equipment removal report shall contain all of the following items:

(i) A copy of the closure report submitted in accordance with paragraph (d) of this section;

(ii) A copy of the initial performance test report demonstrating that the 15 year minimum control period has expired; and

(iii) Dated copies of three successive NMOC emission rate reports demonstrating that the landfill is no longer producing 50 megagrams or greater of NMOC per year.

(2) The Administrator may request such additional information as may be necessary to verify that all of the conditions for removal in §60.752(b)(2)(v) have been met.

(f) Each owner or operator of a landfill seeking to comply with §60.752(b)(2) using an active collection system designed in accordance with §60.752(b)(2)(ii) shall submit to the Administrator annual reports of the recorded information in (f)(1) through (f)(6) of this paragraph. The initial annual report shall be submitted within 180 days of installation and start-up of the collection and control system, and shall include the initial performance test report required under §60.8. For enclosed combustion devices and flares, reportable exceedances are defined under §60.758(c).

(1) Value and length of time for exceedance of applicable parameters monitored under §60.756(a), (b), (c), and (d).

(2) Description and duration of all periods when the gas stream is diverted from the control device through a bypass line or the indication of bypass flow as specified under §60.756.

(3) Description and duration of all periods when the control device was not operating for a period exceeding 1 hour and length of time the control device was not operating.

- (4) All periods when the collection system was not operating in excess of 5 days.
- (5) The location of each exceedance of the 500 parts per million methane concentration as provided in §60.753(d) and the concentration recorded at each location for which an exceedance was recorded in the previous month.
- (6) The date of installation and the location of each well or collection system expansion added pursuant to paragraphs (a)(3), (b), and (c)(4) of §60.755.
- (g) Each owner or operator seeking to comply with §60.752(b)(2)(iii) shall include the following information with the initial performance test report required under §60.8:
- (1) A diagram of the collection system showing collection system positioning including all wells, horizontal collectors, surface collectors, or other gas extraction devices, including the locations of any areas excluded from collection and the proposed sites for the future collection system expansion;
 - (2) The data upon which the sufficient density of wells, horizontal collectors, surface collectors, or other gas extraction devices and the gas mover equipment sizing are based;
 - (3) The documentation of the presence of asbestos or nondegradable material for each area from which collection wells have been excluded based on the presence of asbestos or nondegradable material;
 - (4) The sum of the gas generation flow rates for all areas from which collection wells have been excluded based on nonproductivity and the calculations of gas generation flow rate for each excluded area; and
 - (5) The provisions for increasing gas mover equipment capacity with increased gas generation flow rate, if the present gas mover equipment is inadequate to move the maximum flow rate expected over the life of the landfill; and
 - (6) The provisions for the control of off-site migration.

[61 FR 9919, Mar. 12, 1996, as amended at 63 FR 32752, June 16, 1998; 65 FR 18909, Apr. 10, 2000]

Bonneville County is following the reporting requirements for those that currently apply. Bonneville County understands that additional reporting will be necessary when a collection and control system is required for the PHL.

§60.758 Recordkeeping requirements.

- (a) Except as provided in §60.752(b)(2)(i)(B), each owner or operator of an MSW landfill subject to the provisions of §60.752(b) shall keep for at least 5 years up-to-date, readily accessible, on-site records of the design capacity report which triggered §60.752(b), the current amount of solid waste in-place, and the year-by-year waste acceptance rate. Off-site records may be maintained if they are retrievable within 4 hours. Either paper copy or electronic formats are acceptable.
- (b) Except as provided in §60.752(b)(2)(i)(B), each owner or operator of a controlled landfill shall keep up-to-date, readily accessible records for the life of the control equipment of the data listed in paragraphs (b)(1) through (b)(4) of this section as measured during the initial performance test or compliance determination. Records of subsequent tests or monitoring shall be maintained for a minimum of 5 years. Records of the control device vendor specifications shall be maintained until removal.

(1) Where an owner or operator subject to the provisions of this subpart seeks to demonstrate compliance with §60.752(b)(2)(ii):

(i) The maximum expected gas generation flow rate as calculated in §60.755(a)(1). The owner or operator may use another method to determine the maximum gas generation flow rate, if the method has been approved by the Administrator.

(ii) The density of wells, horizontal collectors, surface collectors, or other gas extraction devices determined using the procedures specified in §60.759(a)(1).

(2) Where an owner or operator subject to the provisions of this subpart seeks to demonstrate compliance with §60.752(b)(2)(iii) through use of an enclosed combustion device other than a boiler or process heater with a design heat input capacity equal to or greater than 44 megawatts:

(i) The average combustion temperature measured at least every 15 minutes and averaged over the same time period of the performance test.

(ii) The percent reduction of NMOC determined as specified in §60.752(b)(2)(iii)(B) achieved by the control device.

(3) Where an owner or operator subject to the provisions of this subpart seeks to demonstrate compliance with §60.752(b)(2)(iii)(B)(1) through use of a boiler or process heater of any size: a description of the location at which the collected gas vent stream is introduced into the boiler or process heater over the same time period of the performance testing.

(4) Where an owner or operator subject to the provisions of this subpart seeks to demonstrate compliance with §60.752(b)(2)(iii)(A) through use of an open flare, the flare type (i.e., steam-assisted, air-assisted, or nonassisted), all visible emission readings, heat content determination, flow rate or bypass flow rate measurements, and exit velocity determinations made during the performance test as specified in §60.18; continuous records of the flare pilot flame or flare flame monitoring and records of all periods of operations during which the pilot flame of the flare flame is absent.

(c) Except as provided in §60.752(b)(2)(i)(B), each owner or operator of a controlled landfill subject to the provisions of this subpart shall keep for 5 years up-to-date, readily accessible continuous records of the equipment operating parameters specified to be monitored in §60.756 as well as up-to-date, readily accessible records for periods of operation during which the parameter boundaries established during the most recent performance test are exceeded.

(1) The following constitute exceedances that shall be recorded and reported under §60.757(f):

(i) For enclosed combustors except for boilers and process heaters with design heat input capacity of 44 megawatts (150 million British thermal unit per hour) or greater, all 3-hour periods of operation during which the average combustion temperature was more than 28 oC below the average combustion temperature during the most recent performance test at which compliance with §60.752(b)(2)(iii) was determined.

(ii) For boilers or process heaters, whenever there is a change in the location at which the vent stream is introduced into the flame zone as required under paragraph (b)(3) of this section.

(2) Each owner or operator subject to the provisions of this subpart shall keep up-to-date, readily accessible continuous records of the indication of flow to the control device or the indication of bypass flow or records of monthly inspections of car-seals or lock-and-key configurations used to seal bypass lines, specified under §60.756.

(3) Each owner or operator subject to the provisions of this subpart who uses a boiler or process heater with a design heat input capacity of 44 megawatts or greater to comply with §60.752(b)(2)(iii) shall keep an up-to-date, readily accessible record of all periods of operation of the boiler or process heater. (Examples of such records could include records of steam use, fuel use, or monitoring data collected pursuant to other State, local, Tribal, or Federal regulatory requirements.)

(4) Each owner or operator seeking to comply with the provisions of this subpart by use of an open flare shall keep up-to-date, readily accessible continuous records of the flame or flare pilot flame monitoring specified under §60.756(c), and up-to-date, readily accessible records of all periods of operation in which the flame or flare pilot flame is absent.

(d) Except as provided in §60.752(b)(2)(i)(B), each owner or operator subject to the provisions of this subpart shall keep for the life of the collection system an up-to-date, readily accessible plot map showing each existing and planned collector in the system and providing a unique identification location label for each collector.

(1) Each owner or operator subject to the provisions of this subpart shall keep up-to-date, readily accessible records of the installation date and location of all newly installed collectors as specified under §60.755(b).

(2) Each owner or operator subject to the provisions of this subpart shall keep readily accessible documentation of the nature, date of deposition, amount, and location of asbestos-containing or nondegradable waste excluded from collection as provided in §60.759(a)(3)(i) as well as any nonproductive areas excluded from collection as provided in §60.759(a)(3)(ii).

(e) Except as provided in §60.752(b)(2)(i)(B), each owner or operator subject to the provisions of this subpart shall keep for at least 5 years up-to-date, readily accessible records of all collection and control system exceedances of the operational standards in §60.753, the reading in the subsequent month whether or not the second reading is an exceedance, and the location of each exceedance.

(f) Landfill owners or operators who convert design capacity from volume to mass or mass to volume to demonstrate that landfill design capacity is less than 2.5 million megagrams or 2.5 million cubic meters, as provided in the definition of "design capacity", shall keep readily accessible, on-site records of the annual recalculation of site-specific density, design capacity, and the supporting documentation. Off-site records may be maintained if they are retrievable within 4 hours. Either paper copy or electronic formats are acceptable.

[61 FR 9919, Mar. 12, 1996, as amended at 63 FR 32752, June 16, 1998; 65 FR 18909, Apr. 10, 2000]

Bonneville County is following the recordkeeping requirements for those requirements that currently apply. Bonneville County understands that additional recordkeeping will be necessary when a collection and control system is required for the PHL.

§60.759 Specifications for active collection systems.

(a) Each owner or operator seeking to comply with §60.752(b)(2)(i) shall site active collection wells, horizontal collectors, surface collectors, or other extraction devices at a sufficient density throughout all gas producing areas using the following procedures unless alternative procedures have been approved by the Administrator as provided in §60.752(b)(2)(i)(C) and (D):

(1) The collection devices within the interior and along the perimeter areas shall be certified to achieve comprehensive control of surface gas emissions by a professional engineer. The following issues shall be addressed in the design: depths of refuse, refuse gas generation rates and flow characteristics, cover properties, gas system expandability, leachate and condensate management, accessibility, compatibility

with filling operations, integration with closure end use, air intrusion control, corrosion resistance, fill settlement, and resistance to the refuse decomposition heat.

(2) The sufficient density of gas collection devices determined in paragraph (a)(1) of this section shall address landfill gas migration issues and augmentation of the collection system through the use of active or passive systems at the landfill perimeter or exterior.

(3) The placement of gas collection devices determined in paragraph (a)(1) of this section shall control all gas producing areas, except as provided by paragraphs (a)(3)(i) and (a)(3)(ii) of this section.

(i) Any segregated area of asbestos or nondegradable material may be excluded from collection if documented as provided under §60.758(d). The documentation shall provide the nature, date of deposition, location and amount of asbestos or nondegradable material deposited in the area, and shall be provided to the Administrator upon request.

(ii) Any nonproductive area of the landfill may be excluded from control, provided that the total of all excluded areas can be shown to contribute less than 1 percent of the total amount of NMOC emissions from the landfill. The amount, location, and age of the material shall be documented and provided to the Administrator upon request. A separate NMOC emissions estimate shall be made for each section proposed for exclusion, and the sum of all such sections shall be compared to the NMOC emissions estimate for the entire landfill. Emissions from each section shall be computed using the following equation:

$$Q_i = 2 k L_o M_i (e^{-kt}) \quad (\text{CNMOC}) \quad (3.6 \times 10^{-9})$$

where,

Q_i = NMOC emission rate from the i th section, megagrams per year

k = methane generation rate constant, year⁻¹

L_o = methane generation potential, cubic meters per megagram solid waste

M_i = mass of the degradable solid waste in the i th section, megagram

t_i = age of the solid waste in the i th section, years

CNMOC = concentration of nonmethane organic compounds, parts per million by volume

3.6×10^{-9} = conversion factor

(iii) The values for k and CNMOC determined in field testing shall be used if field testing has been performed in determining the NMOC emission rate or the radii of influence (this distance from the well center to a point in the landfill where the pressure gradient applied by the blower or compressor approaches zero). If field testing has not been performed, the default values for k , L_o and CNMOC provided in §60.754(a)(1) or the alternative values from §60.754(a)(5) shall be used. The mass of nondegradable solid waste contained within the given section may be subtracted from the total mass of the section when estimating emissions provided the nature, location, age, and amount of the nondegradable material is documented as provided in paragraph (a)(3)(i) of this section.

(b) Each owner or operator seeking to comply with §60.752(b)(2)(i)(A) shall construct the gas collection devices using the following equipment or procedures:

(1) The landfill gas extraction components shall be constructed of polyvinyl chloride (PVC), high density polyethylene (HDPE) pipe, fiberglass, stainless steel, or other nonporous corrosion resistant material of suitable dimensions to: convey projected amounts of gases; withstand installation, static, and settlement forces; and withstand planned overburden or traffic loads. The collection system shall extend as necessary to comply with emission and migration standards. Collection devices such as wells and horizontal collectors shall be perforated to allow gas entry without head loss sufficient to impair performance across the intended extent of control. Perforations shall be situated with regard to the need to prevent excessive air infiltration.

(2) Vertical wells shall be placed so as not to endanger underlying liners and shall address the occurrence of water within the landfill. Holes and trenches constructed for piped wells and horizontal collectors shall be of sufficient cross-section so as to allow for their proper construction and completion including, for example, centering of pipes and placement of gravel backfill. Collection devices shall be designed so as not to allow indirect short circuiting of air into the cover or refuse into the collection system or gas into the air. Any gravel used around pipe perforations should be of a dimension so as not to penetrate or block perforations.

(3) Collection devices may be connected to the collection header pipes below or above the landfill surface. The connector assembly shall include a positive closing throttle valve, any necessary seals and couplings, access couplings and at least one sampling port. The collection devices shall be constructed of PVC, HDPE, fiberglass, stainless steel, or other nonporous material of suitable thickness.

(c) Each owner or operator seeking to comply with §60.752(b)(2)(i)(A) shall convey the landfill gas to a control system in compliance with §60.752(b)(2)(iii) through the collection header pipe(s). The gas mover equipment shall be sized to handle the maximum gas generation flow rate expected over the intended use period of the gas moving equipment using the following procedures:

(1) For existing collection systems, the flow data shall be used to project the maximum flow rate. If no flow data exists, the procedures in paragraph (c)(2) of this section shall be used.

(2) For new collection systems, the maximum flow rate shall be in accordance with §60.755(a)(1).

[61 FR 9919, Mar. 12, 1996, as amended at 63 FR 32753, June 16, 1998; 64 FR 9262, Feb. 24, 1999; 65 FR 18909, Apr. 10, 2000]

Bonneville County is aware of these requirements for a gas collection and control system and will implement them when such a system is required for the PHL.

7.5 NESHAP Applicability (40 CFR 61)

The facility is not an affected source subject to National Emission Standards for Hazardous Air Pollutants (NESHAP) in 40 CFR 61.

7.6 MACT Applicability (40 CFR 63)

Peterson Hill Landfill operations are subject to New Source Performance Standards (NSPS) of 40 CFR 63, and potentially subject to Subpart AAAA Standards of Performance for Municipal Solid Waste Landfills. Below is a breakdown of this subpart as submitted by the applicant:

§63.1930 What is the purpose of this subpart?

This subpart establishes national emission standards for hazardous air pollutants for existing and new municipal solid waste (MSW) landfills. This subpart requires all landfills described in §63.1935 to meet the requirements of 40 CFR part 60, subpart Cc or WWW and requires timely control of bioreactors. This subpart also requires such landfills to meet the startup, shutdown, and malfunction

(SSM) requirements of the general provisions of this part and provides that compliance with the operating conditions shall be demonstrated by parameter monitoring results that are within the specified ranges. It also includes additional reporting requirements.

The PHL is subject to 40 CFR Part 60, Subpart WWW; however, under such requirements the PHL is not required to have a collection and control system as its NMOC emissions are less than 50 Mg/yr. Therefore, the requirements of SSM and operating requirements do not apply.

§63.1935 Am I subject to this subpart?

You are subject to this subpart if you meet the criteria in paragraph (a) or (b) of this section.

(a) You are subject to this subpart if you own or operate a MSW landfill that has accepted waste since November 8, 1987 or has additional capacity for waste deposition and meets any one of the three criteria in paragraphs (a)(1) through (3) of this section:

(1) Your MSW landfill is a major source as defined in 40 CFR 63.2 of subpart A.

(2) Your MSW landfill is collocated with a major source as defined in 40 CFR 63.2 of subpart A.

(3) Your MSW landfill is an area source landfill that has a design capacity equal to or greater than 2.5 million megagrams (Mg) and 2.5 million cubic meters (m³) and has estimated uncontrolled emissions equal to or greater than 50 megagrams per year (Mg/yr) NMOC as calculated according to §60.754(a) of the MSW landfills new source performance standards in 40 CFR part 60, subpart WWW, the Federal plan, or an EPA approved and effective State or tribal plan that applies to your landfill.

(b) You are subject to this subpart if you own or operate a MSW landfill that has accepted waste since November 8, 1987 or has additional capacity for waste deposition, that includes a bioreactor, as defined in §63.1990, and that meets any one of the criteria in paragraphs (b)(1) through (3) of this section:

(1) Your MSW landfill is a major source as defined in 40 CFR 63.2 of subpart A.

(2) Your MSW landfill is collocated with a major source as defined in 40 CFR 63.2 of subpart A.

(3) Your MSW landfill is an area source landfill that has a design capacity equal to or greater than 2.5 million Mg and 2.5 million m³ and that is not permanently closed as of January 16, 2003.

The PHL has accepted waste since November 8, 1987 and has additional waste deposition capacity, and meets Criterion 1. The estimated aggregate hazardous air pollutant (HAPs) emissions from the PHL is 11.9 tons per year as calculated by LandGEM. By definition of 40 CFR 63.2 subpart A, the PHL is not considered a “major source” since the combination of HAPs is less than 25 tons per year.

§63.1940 What is the affected source of this subpart?

(a) An affected source of this subpart is a MSW landfill, as defined in §63.1990, that meets the criteria in §63.1935(a) or (b). The affected source includes the entire disposal facility in a contiguous geographic space where household waste is placed in or on land, including any portion of the MSW landfill operated as a bioreactor.

(b) A new affected source of this subpart is an affected source that commenced construction or reconstruction after November 7, 2000. An affected source is reconstructed if it meets the definition of reconstruction in 40 CFR 63.2 of subpart A.

(c) An affected source of this subpart is existing if it is not new.

As per 40 CFR 63.2 subpart A, "Reconstruction, unless otherwise defined in a relevant standard, means the replacement of components of an affected or a previously nonaffected source to such an extent that:

(1) The fixed capital cost of the new components exceeds 50 percent of the fixed capital cost that would be required to construct a comparable new source; and

(2) It is technologically and economically feasible for the reconstructed source to meet the relevant standard(s) established by the Administrator (or a State) pursuant to section 112 of the Act. Upon reconstruction, an affected source, or a stationary source that becomes an affected source, is subject to relevant standards for new sources, including compliance dates, irrespective of any change in emissions of hazardous air pollutants from that source."
As per this definition, the PHL commenced construction

§63.1945 When do I have to comply with this subpart?

(a) If your landfill is a new affected source, you must comply with this subpart by January 16, 2003 or at the time you begin operating, whichever is last.

(b) If your landfill is an existing affected source, you must comply with this subpart by January 16, 2004.

(c) If your landfill is a new affected source and is a major source or is collocated with a major source, you must comply with the requirements in §§63.1955(b) and 63.1960 through 63.1980 by the date your landfill is required to install a collection and control system by 40 CFR 60.752(b)(2) of subpart WWW.

(d) If your landfill is an existing affected source and is a major source or is collocated with a major source, you must comply with the requirements in §§63.1955(b) and 63.1960 through 63.1980 by the date your landfill is required to install a collection and control system by 40 CFR 60.752(b)(2) of subpart WWW, the Federal plan, or EPA approved and effective State or tribal plan that applies to your landfill or by January 13, 2004, whichever occurs later.

(e) If your landfill is a new affected source and is an area source meeting the criteria in §63.1935(a)(3), you must comply with the requirements of §§63.1955(b) and 63.1960 through 63.1980 by the date your landfill is required to install a collection and control system by 40 CFR 60.752(b)(2) of subpart WWW.

(f) If your landfill is an existing affected source and is an area source meeting the criteria in §63.1935(a)(3), you must comply with the requirements in §§63.1955(b) and 63.1960 through 63.1980 by the date your landfill is required to install a collection and control system by 40 CFR 60.752(b)(2) of subpart WWW, the Federal plan, or EPA approved and effective State or tribal plan that applies to your landfill or by January 16, 2004, whichever occurs later.

The PHL is an existing affected source meeting the requirements of Item (d) above, and therefore, must comply with the requirements of §§63.1955(b) and 63.1960 through 63.1980 by the date the PHL is required to install a collection and control system by 40 CFR 60.752(b)(2) of subpart WWW.

§63.1947 When do I have to comply with this subpart if I own or operate a bioreactor?

You must comply with this subpart by the dates specified in §63.1945(a) or (b) of this subpart. If you own or operate a bioreactor located at a landfill that is not permanently closed as of January 16, 2003 and has a design capacity equal to or greater than 2.5 million Mg and 2.5 million m³, then you must install and operate a collection and control system that meets the criteria in 40 CFR 60.752(b)(2)(v) of part 60, subpart WWW, the Federal plan, or EPA approved and effective State plan according to the schedule specified in paragraph (a), (b), or (c) of this section.

(a) If your bioreactor is at a new affected source, then you must meet the requirements in paragraphs (a)(1) and (2) of this section:

(1) Install the gas collection and control system for the bioreactor before initiating liquids addition.

(2) Begin operating the gas collection and control system within 180 days after initiating liquids addition or within 180 days after achieving a moisture content of 40 percent by weight, whichever is later. If you choose to begin gas collection and control system operation 180 days after achieving a 40 percent moisture content instead of 180 days after liquids addition, use the procedures in §63.1980(g) and (h) to determine when the bioreactor moisture content reaches 40 percent.

(b) If your bioreactor is at an existing affected source, then you must install and begin operating the gas collection and control system for the bioreactor by January 17, 2006 or by the date your bioreactor is required to install a gas collection and control system under 40 CFR part 60, subpart WWW, the Federal plan, or EPA approved and effective State plan or tribal plan that applies to your landfill, whichever is earlier.

(c) If your bioreactor is at an existing affected source and you do not initiate liquids addition to your bioreactor until later than January 17, 2006, then you must meet the requirements in paragraphs (c)(1) and (2) of this section:

(1) Install the gas collection and control system for the bioreactor before initiating liquids addition.

(2) Begin operating the gas collection and control system within 180 days after initiating liquids addition or within 180 days after achieving a moisture content of 40 percent by weight, whichever is later. If you choose to begin gas collection and control system operation 180 days after achieving a 40 percent moisture content instead of 180 days after liquids addition, use the procedures in §63.1980(g) and (h) to determine when the bioreactor moisture content reaches 40 percent.

The PHL is not a bioreactor landfill, and therefore, this does not apply.

§63.1950 When am I no longer required to comply with this subpart?

You are no longer required to comply with the requirements of this subpart when you are no longer required to apply controls as specified in 40 CFR 60.752(b)(2)(v) of subpart WWW, or the Federal plan or EPA approved and effective State plan or tribal plan that implements 40 CFR part 60, subpart Cc, whichever applies to your landfill.

Bonneville County is aware of this requirement and will apply it when the time comes to no longer comply.

§63.1952 When am I no longer required to comply with the requirements of this subpart if I own or operate a bioreactor?

If you own or operate a landfill that includes a bioreactor, you are no longer required to comply with the requirements of this subpart for the bioreactor provided you meet the conditions of either paragraphs (a) or (b).

(a) Your affected source meets the control system removal criteria in 40 CFR 60.752(b)(2)(v) of part 60, subpart WWW or the bioreactor meets the criteria for a nonproductive area of the landfill in 40 CFR 60.759(a)(3)(ii) of part 60, subpart WWW.

(b) The bioreactor portion of the landfill is a closed landfill as defined in 40 CFR 60.751, subpart WWW, you have permanently ceased adding liquids to the bioreactor, and you have not added liquids to the bioreactor for at least 1 year. A closure report for the bioreactor must be submitted to the Administrator as provided in 40 CFR 60.757(d) of subpart WWW.

(c) Compliance with the bioreactor control removal provisions in this section constitutes compliance with 40 CFR part 60, subpart WWW or the Federal plan, whichever applies to your bioreactor.

The PHL is not a bioreactor landfill, and therefore, this does not apply.

§63.1955 What requirements must I meet?

(a) You must fulfill one of the requirements in paragraph (a)(1) or (2) of this section, whichever is applicable:

(1) Comply with the requirements of 40 CFR part 60, subpart WWW.

(2) Comply with the requirements of the Federal plan or EPA approved and effective State plan or tribal plan that implements 40 CFR part 60, subpart Cc.

(b) If you are required by 40 CFR 60.752(b)(2) of subpart WWW, the Federal plan, or an EPA approved and effective State or tribal plan to install a collection and control system, you must comply with the requirements in §§63.1960 through 63.1985 and with the general provisions of this part specified in table 1 of this subpart.

(c) For approval of collection and control systems that include any alternatives to the operational standards, test methods, procedures, compliance measures, monitoring, recordkeeping or reporting provisions, you must follow the procedures in 40 CFR 60.752(b)(2). If alternatives have already been approved under 40 CFR part 60 subpart WWW or the Federal plan, or EPA approved and effective State or tribal plan, these alternatives can be used to comply with this subpart, except that all affected sources must comply with the SSM requirements in Subpart A of this part as specified in Table 1 of this subpart and all affected sources must submit compliance reports every 6 months as specified in §63.1980(a) and (b), including information on all deviations that occurred during the 6-month reporting period. Deviations for continuous emission monitors or numerical continuous parameter monitors must be determined using a 3 hour monitoring block average.

(d) If you own or operate a bioreactor that is located at a MSW landfill that is not permanently closed and has a design capacity equal to or greater than 2.5 million Mg and 2.5 million m³, then you must meet the requirements of paragraph (a) and the additional requirements in paragraphs (d)(1) and (2) of this section.

(1) You must comply with the general provisions specified in Table 1 of this subpart and §§63.1960 through 63.1985 starting on the date you are required to install the gas collection and control system.

(2) You must extend the collection and control system into each new cell or area of the bioreactor prior to initiating liquids addition in that area, instead of the schedule in 40 CFR 60.752(b)(2)(ii)(A)(2).

As per §63.1945, the PHL does not need to comply until a gas collection and control system

is required.

§63.1960 How is compliance determined?

Compliance is determined in the same way it is determined for 40 CFR part 60, subpart WWW, including performance testing, monitoring of the collection system, continuous parameter monitoring, and other credible evidence. In addition, continuous parameter monitoring data, collected under 40 CFR 60.756(b)(1), (c)(1), and (d) of subpart WWW, are used to demonstrate compliance with the operating conditions for control systems. If a deviation occurs, you have failed to meet the control device operating conditions described in this subpart and have deviated from the requirements of this subpart. Finally, you must develop a written SSM plan according to the provisions in 40 CFR 63.6(e)(3). A copy of the SSM plan must be maintained on site. Failure to write or maintain a copy of the SSM plan is a deviation from the requirements of this subpart.

[68 FR 2238, Jan. 16, 2003, as amended at 71 FR 20462, Apr. 20, 2006]

As per §63.1945, the PHL does not need to comply until a gas collection and control system is required.

§63.1965 What is a deviation?

A deviation is defined in §63.1990. For the purposes of the landfill monitoring and SSM plan requirements, deviations include the items in paragraphs (a) through (c) of this section.

(a) A deviation occurs when the control device operating parameter boundaries described in 40 CFR 60.758(c)(1) of subpart WWW are exceeded.

(b) A deviation occurs when 1 hour or more of the hours during the 3-hour block averaging period does not constitute a valid hour of data. A valid hour of data must have measured values for at least three 15-minute monitoring periods within the hour.

(c) A deviation occurs when a SSM plan is not developed or maintained on site.

[68 FR 2238, Jan. 16, 2003, as amended at 71 FR 20462, Apr. 20, 2006]

As per §63.1945, the PHL does not need until a gas collection and control system is required.

§63.1975 How do I calculate the 3-hour block average used to demonstrate compliance?

Averages are calculated in the same way as they are calculated in 40 CFR part 60, subpart WWW, except that the data collected during the events listed in paragraphs (a), (b), (c), and (d) of this section are not to be included in any average computed under this subpart:

(a) Monitoring system breakdowns, repairs, calibration checks, and zero (low-level) and high-level adjustments.

(b) Startups.

(c) Shutdowns.

(d) Malfunctions.

As per §63.1945, the PHL does not need to comply until a gas collection and control system is required.

§63.1980 What records and reports must I keep and submit?

(a) *Keep records and reports as specified in 40 CFR part 60, subpart WWW, or in the Federal plan, EPA approved State plan or tribal plan that implements 40 CFR part 60, subpart Cc, whichever applies to your landfill, with one exception: You must submit the annual report described in 40 CFR 60.757(f) every 6 months.*

(b) *You must also keep records and reports as specified in the general provisions of 40 CFR part 60 and this part as shown in Table 1 of this subpart. Applicable records in the general provisions include items such as SSM plans and the SSM plan reports.*

(c) *For bioreactors at new affected sources you must submit the initial semiannual compliance report and performance test results described in 40 CFR 60.757(f) within 180 days after the date you are required to begin operating the gas collection and control system by §63.1947(a)(2) of this subpart.*

(d) *For bioreactors at existing affected sources, you must submit the initial semiannual compliance report and performance test results described in 40 CFR 60.757(f) within 180 days after the compliance date specified in §63.1947(b) of this subpart, unless you have previously submitted a compliance report for the bioreactor required by 40 CFR part 60, subpart WWW, the Federal plan, or an EPA approved and effective State plan or tribal plan.*

(e) *For bioreactors that are located at existing affected sources, but do not initiate liquids addition until later than the compliance date in §63.1947(b) of this subpart, you must submit the initial semiannual compliance report and performance tests results described in 40 CFR 60.757(f) within 180 days after the date you are required to begin operating the gas collection and control system by §63.1947(c) of this subpart.*

(f) *If you must submit a semiannual compliance report for a bioreactor as well as a semiannual compliance report for a conventional portion of the same landfill, you may delay submittal of a subsequent semiannual compliance report for the bioreactor according to paragraphs (f)(1) through (3) of this section so that the reports may be submitted on the same schedule.*

(1) *After submittal of your initial semiannual compliance report and performance test results for the bioreactor, you may delay submittal of the subsequent semiannual compliance report for the bioreactor until the date the initial or subsequent semiannual compliance report is due for the conventional portion of your landfill.*

(2) *You may delay submittal of your subsequent semiannual compliance report by no more than 12 months after the due date for submitting the initial semiannual compliance report and performance test results described in 40 CFR 60.757(f) for the bioreactor. The report shall cover the time period since the previous semiannual report for the bioreactor, which would be a period of at least 6 months and no more than 12 months.*

(3) *After the delayed semiannual report, all subsequent semiannual reports for the bioreactor must be submitted every 6 months on the same date the semiannual report for the conventional portion of the landfill is due.*

(g) *If you add any liquids other than leachate in a controlled fashion to the waste mass and do not comply with the bioreactor requirements in §§63.1947, 63.1955(c) and 63.1980(c) through (f) of this subpart, you must keep a record of calculations showing that the percent moisture by weight expected in the waste mass to which liquid is added is less than 40 percent. The calculation must consider the waste mass, moisture content of the incoming waste, mass of water added to the waste including leachate recirculation and other liquids addition and precipitation, and the mass of water removed through*

leachate or other water losses. Moisture level sampling or mass balances calculations can be used. You must document the calculations and the basis of any assumptions. Keep the record of the calculations until you cease liquids addition.

(h) If you calculate moisture content to establish the date your bioreactor is required to begin operating the collection and control system under §63.1947(a)(2) or (c)(2), keep a record of the calculations including the information specified in paragraph (g) of this section for 5 years. Within 90 days after the bioreactor achieves 40 percent moisture content, report the results of the calculation, the date the bioreactor achieved 40 percent moisture content by weight, and the date you plan to begin collection and control system operation.

As per §63.1945, the PHL does not need to comply with this subpart until a gas collection and control system is required.

§63.1985 Who enforces this subpart?

(a) This subpart can be implemented and enforced by the U.S. EPA, or a delegated authority such as the applicable State, local, or tribal agency. If the EPA Administrator has delegated authority to a State, local, or tribal agency, then that agency as well as the U.S. EPA has the authority to implement and enforce this subpart. Contact the applicable EPA Regional Office to find out if this subpart is delegated to a State, local, or tribal agency.

(b) In delegating implementation and enforcement authority of this subpart to a State, local, or tribal agency under subpart E of this part, the authorities contained in paragraph (c) of this section are retained by the EPA Administrator and are not transferred to the State, local, or tribal agency.

(c) The authorities that will not be delegated to State, local, or tribal agencies are as follows. Approval of alternatives to the standards in §63.1955. Where these standards reference another subpart, the cited provisions will be delegated according to the delegation provisions of the referenced subpart.

Bonneville County acknowledges who enforces this subpart.

§63.1990 What definitions apply to this subpart?

Terms used in this subpart are defined in the Clean Air Act, 40 CFR part 60, subparts A, Cc, and WWW; 40 CFR part 62, subpart GGG, and subpart A of this part, and this section that follows:

Bioreactor means a MSW landfill or portion of a MSW landfill where any liquid other than leachate (leachate includes landfill gas condensate) is added in a controlled fashion into the waste mass (often in combination with recirculating leachate) to reach a minimum average moisture content of at least 40 percent by weight to accelerate or enhance the anaerobic (without oxygen) biodegradation of the waste.

Deviation means any instance in which an affected source subject to this subpart, or an owner or operator of such a source:

(1) Fails to meet any requirement or obligation established by this subpart, including, but not limited to, any emissions limitation (including any operating limit) or work practice standard;

(2) Fails to meet any term or condition that is adopted to implement an applicable requirement in this subpart and that is included in the operating permit for any affected source required to obtain such a permit; or

(3) Fails to meet any emission limitation, (including any operating limit), or work practice standard in this subpart during SSM, regardless of whether or not such failure is permitted by this subpart.

Emissions limitation means any emission limit, opacity limit, operating limit, or visible emissions limit.

EPA approved State plan means a State plan that EPA has approved based on the requirements in 40 CFR part 60, subpart B to implement and enforce 40 CFR part 60, subpart Cc. An approved State plan becomes effective on the date specified in the notice published in the Federal Register announcing EPA's approval.

Federal plan means the EPA plan to implement 40 CFR part 60, subpart Cc for existing MSW landfills located in States and Indian country where State plans or tribal plans are not currently in effect. On the effective date of an EPA approved State or tribal plan, the Federal plan no longer applies. The Federal plan is found at 40 CFR part 62, subpart GGG.

Municipal solid waste landfill or MSW landfill means an entire disposal facility in a contiguous geographical space where household waste is placed in or on land. A municipal solid waste landfill may also receive other types of RCRA Subtitle D wastes (see §257.2 of this chapter) such as commercial solid waste, nonhazardous sludge, conditionally exempt small quantity generator waste, and industrial solid waste. Portions of a municipal solid waste landfill may be separated by access roads. A municipal solid waste landfill may be publicly or privately owned. A municipal solid waste landfill may be a new municipal solid waste landfill, an existing municipal solid waste landfill, or a lateral expansion.

Tribal plan means a plan submitted by a tribal authority pursuant to 40 CFR parts 9, 35, 49, 50, and 81 to implement and enforce 40 CFR part 60, subpart Cc.

Work practice standard means any design, equipment, work practice, or operational standard, or combination thereof, that is promulgated pursuant to section 112(h) of the Clean Air Act.

As stated in §§63.1955 and 63.1980, you must meet each requirement in the following table that applies to you.

Table 1 to Subpart AAAA of Part 63—Applicability of NESHAP General Provisions to Subpart AAAA

Part 63 Citation	Description	Explanation
63.1(a)	<i>Applicability: general applicability of NESHAP in this part</i>	<i>Affected sources are already subject to the provisions of paragraphs (a)(10)-(12) through the same provisions under 40 CFR, part 60 subpart A.</i>
63.1(b)	<i>Applicability determination for stationary sources</i>	
63.1(e)	<i>Title V permitting</i>	
63.2	<i>Definitions</i>	
63.4	<i>Prohibited activities and circumvention</i>	<i>Affected sources are already subject to the provisions of paragraph (b) through the same provisions under 40 CFR, part 60 subpart A.</i>
63.5(b)	<i>Requirements for existing, newly constructed, and reconstructed sources</i>	

63.6(e)	<i>Operation and maintenance requirements, startup, shutdown and malfunction plan provisions</i>	
63.6(f)	<i>Compliance with nonopacity emission standards</i>	<i>Affected sources are already subject to the provisions of paragraphs (f)(1) and (2)(i) through the same provisions under 40 CFR, part 60 subpart A.</i>
63.10(b)(2)(i)-(b)(2)(v)	<i>General recordkeeping requirements</i>	
63.10(d)(5)	<i>If actions taken during a startup, shutdown and malfunction plan are consistent with the procedures in the startup, shutdown and malfunction plan, this information shall be included in a semi-annual startup, shutdown and malfunction plan report. Any time an action taken during a startup, shutdown and malfunction plan is not consistent with the startup, shutdown and malfunction plan, the source shall report actions taken within 2 working days after commencing such actions, followed by a letter 7 days after the event</i>	
63.12(a)	<i>These provisions do not preclude the State from adopting and enforcing any standard, limitation, etc., requiring permits, or requiring emissions reductions in excess of those specified</i>	
63.15	<i>Availability of information and confidentiality</i>	

Bonneville County has read and understands these definitions and has used them in providing this regulatory analysis. Bonneville County also understands the requirements as outlined in Table 1 (appendix) to this subpart.

7.7 CAM Applicability (40 CFR 64)

40 CFR 64..... Compliance Assurance Monitoring

64.2(b) Exemptions —(1) Exempt emission limitations or standards. The requirements of this part shall not apply to any of the following emission limitations or standards:

(i) Emission limitations or standards proposed by the Administrator after November 15, 1990 pursuant to section 111 or 112 of the Act.

As per this regulation, emission limitations or standards proposed after November 15, 1990, pursuant to Clean Air Act section 111 or 112 are exempt from CAM (40 CFR §64.2(b)(1)). All applicable monitoring requirements from Subpart WWW have been included in the permit. Since Subpart WWW was promulgated on March 1996 under the authority of Clean Air Act Section 111 for New Source Performance Standards (NSPS), this standard is exempt from CAM requirements and no additional monitoring has been incorporated into the permit. Also, there are no other emission units at the facility subject to CAM.

7.8 Acid Rain Permit (40 CFR 72-75)

The facility is not an affected source subject to the Acid Rain Permit program in 40 CFR 72-75.

8. PUBLIC COMMENT

As required by IDAPA 58.01.01.364, a public comment period was made available to the public from March 21, 2018 to April 23, 2018. During this time, comments were not submitted in response to DEQ's proposed action.

9. EPA REVIEW OF PROPOSED PERMIT

As required by IDAPA 58.01.01.366, DEQ provided the proposed permit to EPA Region 10 for its review and comment on April 23, 2018 via e-mail. On April 24, 2018 EPA Region 10 responded to DEQ via e-mail indicating that EPA will not be reviewing the proposed permit action and will not object to its issuance. EPA stated, "The permit is now eligible for issuance".

Appendix A - Emissions Inventory

EU-1: Fugitive Landfill Gas Emissions Summary

Bonneville County - Peterson Hill Landfill

2017 Tier I Operating Permit Application

Calculated By: Travis Pyle, PE/Great West

Checked By: Maureen McGraw, PE/Tetra Tech

Date: 1-Dec-17

Date: 7-Dec-17

Enter year of emissions inventory:

<Copied from LandGEM Model Inventory Worksheet>

Gas / Pollutant	Emission Rate				
	<i>(Mg/year)</i>	<i>(m³/year)</i>	<i>(av ft³/min)</i>	<i>(ft³/year)</i>	<i>(tons/year)</i>
Total landfill gas	1.205E+04	9.650E+06	6.484E+02	3.408E+08	1.326E+04
Methane	3.219E+03	4.825E+06	3.242E+02	1.704E+08	3.541E+03
Carbon dioxide	8.832E+03	4.825E+06	3.242E+02	1.704E+08	9.715E+03
NMOC	2.520E+01	7.030E+03	4.723E-01	2.483E+05	2.772E+01

*Refer to LandGEM output report



Summary Report

Landfill Name or Identifier: Peterson Hill Landfill (2017)

Date: Thursday, August 31, 2017

Description/Comments:

Model inputs through July 2017 for estimating current 2017 emissions.

About LandGEM:

First-Order Decomposition Rate Equation:

$$Q_{CH_4} = \sum_{i=1}^n \sum_{j=0.1}^1 kL_o \left(\frac{M_i}{10} \right) e^{-kt_{ij}}$$

Where,

Q_{CH_4} = annual methane generation in the year of the calculation ($m^3/year$)

i = 1-year time increment

n = (year of the calculation) - (initial year of waste acceptance)

j = 0.1-year time increment

k = methane generation rate ($year^{-1}$)

L_o = potential methane generation capacity (m^3/Mg)

M_i = mass of waste accepted in the i^{th} year (Mg)

t_{ij} = age of the j^{th} section of waste mass M_i accepted in the i^{th} year ($decimal\ years$, e.g., 3.2 years)

LandGEM is based on a first-order decomposition rate equation for quantifying emissions from the decomposition of landfilled waste in municipal solid waste (MSW) landfills. The software provides a relatively simple approach to estimating landfill gas emissions. Model defaults are based on empirical data from U.S. landfills. Field test data can also be used in place of model defaults when available. Further guidance on EPA test methods, Clean Air Act (CAA) regulations, and other guidance regarding landfill gas emissions and control technology requirements can be found at <http://www.epa.gov/ttnatw01/landfill/landflpg.html>.

LandGEM is considered a screening tool — the better the input data, the better the estimates. Often, there are limitations with the available data regarding waste quantity and composition, variation in design and operating practices over time, and changes occurring over time that impact the emissions potential. Changes to landfill operation, such as operating under wet conditions through leachate recirculation or other liquid additions, will result in generating more gas at a faster rate. Defaults for estimating emissions for this type of operation are being developed to include in LandGEM along with defaults for conventional landfills (no leachate or liquid additions) for developing emission inventories and determining CAA applicability. Refer to the Web site identified above for future updates.

Input Review

LANDFILL CHARACTERISTICS

Landfill Open Year **1994**
 Landfill Closure Year (with 80-year limit) **2017**
 Actual Closure Year (without limit) **2017**
 Have Model Calculate Closure Year? **No**
 Waste Design Capacity **short tons**

MODEL PARAMETERS

Methane Generation Rate, k **0.020** *year⁻¹*
 Potential Methane Generation Capacity, L₀ **170** *m³/Mg*
 NMOC Concentration **729** *ppmv as hexane*
 Methane Content **50** *% by volume*

GASES / POLLUTANTS SELECTED

Gas / Pollutant #1: **Total landfill gas**
 Gas / Pollutant #2: **Methane**
 Gas / Pollutant #3: **Carbon dioxide**
 Gas / Pollutant #4: **NMOC**

WASTE ACCEPTANCE RATES

Year	Waste Accepted		Waste-In-Place	
	(Mg/year)	(short tons/year)	(Mg)	(short tons)
1994	53,056	58,362	0	0
1995	49,954	54,949	53,056	58,362
1996	47,484	52,232	103,010	113,311
1997	51,224	56,346	150,494	165,543
1998	53,085	58,393	201,717	221,889
1999	53,190	58,509	254,802	280,282
2000	53,588	58,947	307,992	338,791
2001	53,975	59,372	361,580	397,738
2002	57,607	63,368	415,555	457,110
2003	61,266	67,393	473,162	520,478
2004	70,967	78,064	534,428	587,871
2005	72,903	80,193	605,395	665,935
2006	75,750	83,325	678,298	746,128
2007	81,633	89,796	754,048	829,453
2008	81,849	90,034	835,681	919,249
2009	77,639	85,403	917,530	1,009,283
2010	75,195	82,714	995,169	1,094,686
2011	75,673	83,240	1,070,364	1,177,400
2012	102,368	112,605	1,146,036	1,260,640
2013	118,281	130,109	1,248,405	1,373,245
2014	113,002	124,302	1,366,686	1,503,354
2015	113,717	125,088	1,479,688	1,627,657
2016	110,631	121,694	1,593,404	1,752,745
2017	65,552	72,107	1,704,035	1,874,439
2018	0	0	1,769,588	1,946,546
2019	0	0	1,769,588	1,946,546
2020	0	0	1,769,588	1,946,546
2021	0	0	1,769,588	1,946,546
2022	0	0	1,769,588	1,946,546
2023	0	0	1,769,588	1,946,546
2024	0	0	1,769,588	1,946,546
2025	0	0	1,769,588	1,946,546
2026	0	0	1,769,588	1,946,546
2027	0	0	1,769,588	1,946,546
2028	0	0	1,769,588	1,946,546
2029	0	0	1,769,588	1,946,546
2030	0	0	1,769,588	1,946,546
2031	0	0	1,769,588	1,946,546
2032	0	0	1,769,588	1,946,546
2033	0	0	1,769,588	1,946,546

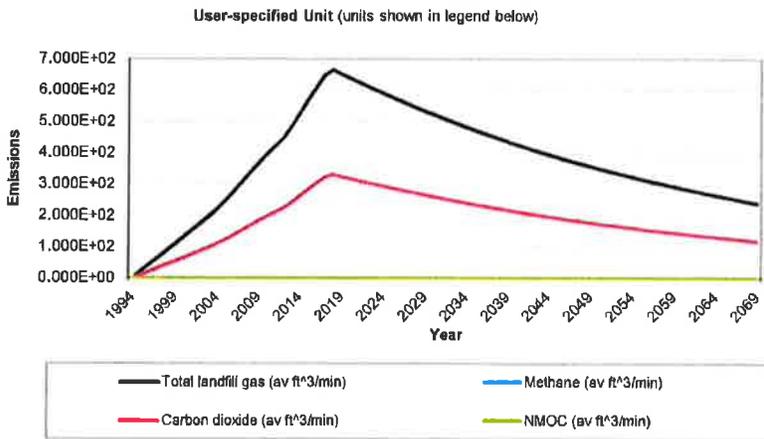
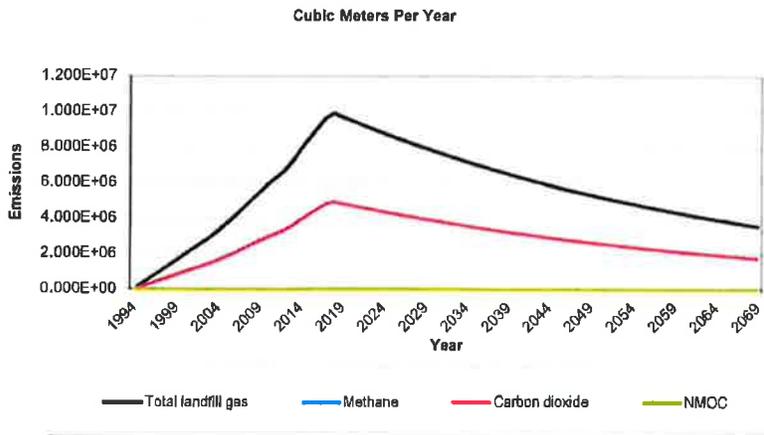
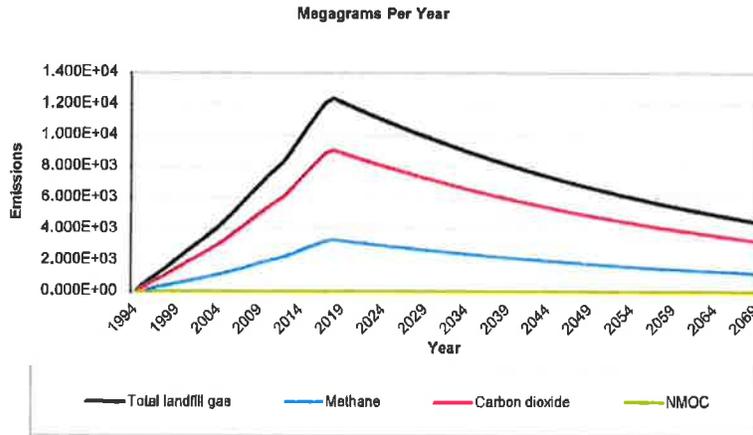
WASTE ACCEPTANCE RATES (Continued)

Year	Waste Accepted		Waste-In-Place	
	(Mg/year)	(short tons/year)	(Mg)	(short tons)
2034	0	0	1,769,588	1,946,546
2035	0	0	1,769,588	1,946,546
2036	0	0	1,769,588	1,946,546
2037	0	0	1,769,588	1,946,546
2038	0	0	1,769,588	1,946,546
2039	0	0	1,769,588	1,946,546
2040	0	0	1,769,588	1,946,546
2041	0	0	1,769,588	1,946,546
2042	0	0	1,769,588	1,946,546
2043	0	0	1,769,588	1,946,546
2044	0	0	1,769,588	1,946,546
2045	0	0	1,769,588	1,946,546
2046	0	0	1,769,588	1,946,546
2047	0	0	1,769,588	1,946,546
2048	0	0	1,769,588	1,946,546
2049	0	0	1,769,588	1,946,546
2050	0	0	1,769,588	1,946,546
2051	0	0	1,769,588	1,946,546
2052	0	0	1,769,588	1,946,546
2053	0	0	1,769,588	1,946,546
2054	0	0	1,769,588	1,946,546
2055	0	0	1,769,588	1,946,546
2056	0	0	1,769,588	1,946,546
2057	0	0	1,769,588	1,946,546
2058	0	0	1,769,588	1,946,546
2059	0	0	1,769,588	1,946,546
2060	0	0	1,769,588	1,946,546
2061	0	0	1,769,588	1,946,546
2062	0	0	1,769,588	1,946,546
2063	0	0	1,769,588	1,946,546
2064	0	0	1,769,588	1,946,546
2065	0	0	1,769,588	1,946,546
2066	0	0	1,769,588	1,946,546
2067	0	0	1,769,588	1,946,546
2068	0	0	1,769,588	1,946,546
2069	0	0	1,769,588	1,946,546
2070	0	0	1,769,588	1,946,546
2071	0	0	1,769,588	1,946,546
2072	0	0	1,769,588	1,946,546
2073	0	0	1,769,588	1,946,546

Pollutant Parameters

Gas / Pollutant Default Parameters:				User-specified Pollutant Parameters:	
	Compound	Concentration (ppmv)	Molecular Weight	Concentration (ppmv)	Molecular Weight
Gases	Total landfill gas		0.00		
	Methane		16.04		
	Carbon dioxide		44.01		
	NMOC	4,000	86.18		
Pollutants	1,1,1-Trichloroethane (methyl chloroform) - HAP	0.48	133.41		
	1,1,1,2,2- Tetrachloroethane - HAP/VOC	1.1	167.85		
	1,1-Dichloroethane (ethylidene dichloride) - HAP/VOC	2.4	98.97		
	1,1-Dichloroethene (vinylidene chloride) - HAP/VOC	0.20	96.94		
	1,2-Dichloroethane (ethylene dichloride) - HAP/VOC	0.41	98.96		
	1,2-Dichloropropane (propylene dichloride) - HAP/VOC	0.18	112.99		
	2-Propanol (isopropyl alcohol) - VOC	50	60.11		
	Acetone	7.0	58.08		
	Acrylonitrile - HAP/VOC	6.3	53.06		
	Benzene - No or Unknown Co-disposal - HAP/VOC	1.9	78.11		
	Benzene - Co-disposal - HAP/VOC	11	78.11		
	Bromodichloromethane - VOC	3.1	163.83		
	Butane - VOC	5.0	58.12		
	Carbon disulfide - HAP/VOC	0.58	76.13		
	Carbon monoxide	140	28.01		
	Carbon tetrachloride - HAP/VOC	4.0E-03	153.84		
	Carbonyl sulfide - HAP/VOC	0.49	60.07		
	Chlorobenzene - HAP/VOC	0.25	112.56		
	Chlorodifluoromethane	1.3	86.47		
	Chloroethane (ethyl chloride) - HAP/VOC	1.3	64.52		
	Chloroform - HAP/VOC	0.03	119.39		
	Chloromethane - VOC	1.2	50.49		
	Dichlorobenzene - (HAP for para isomer/VOC)	0.21	147		
	Dichlorodifluoromethane	16	120.91		
	Dichlorofluoromethane - VOC	2.6	102.92		
	Dichloromethane (methylene chloride) - HAP	14	84.94		
	Dimethyl sulfide (methyl sulfide) - VOC	7.8	62.13		
	Ethane	890	30.07		
	Ethanol - VOC	27	46.08		

Graphs



Results

Year	Total landfill gas			Methane		
	(Mg/year)	(m ³ /year)	(av ft ³ /min)	(Mg/year)	(m ³ /year)	(av ft ³ /min)
1994	0	0	0	0	0	0
1995	4.465E+02	3.576E+05	2.402E+01	1.193E+02	1.788E+05	1.201E+01
1996	8.581E+02	6.871E+05	4.617E+01	2.292E+02	3.436E+05	2.308E+01
1997	1.241E+03	9.935E+05	6.675E+01	3.314E+02	4.968E+05	3.338E+01
1998	1.647E+03	1.319E+06	8.863E+01	4.400E+02	6.595E+05	4.431E+01
1999	2.061E+03	1.651E+06	1.109E+02	5.506E+02	8.253E+05	5.545E+01
2000	2.468E+03	1.976E+06	1.328E+02	6.593E+02	9.882E+05	6.640E+01
2001	2.870E+03	2.298E+06	1.544E+02	7.667E+02	1.149E+06	7.722E+01
2002	3.268E+03	2.617E+06	1.758E+02	8.729E+02	1.308E+06	8.791E+01
2003	3.688E+03	2.953E+06	1.984E+02	9.851E+02	1.477E+06	9.921E+01
2004	4.130E+03	3.308E+06	2.222E+02	1.103E+03	1.654E+06	1.111E+02
2005	4.646E+03	3.720E+06	2.500E+02	1.241E+03	1.860E+06	1.250E+02
2006	5.168E+03	4.138E+06	2.780E+02	1.380E+03	2.069E+06	1.390E+02
2007	5.703E+03	4.566E+06	3.068E+02	1.523E+03	2.283E+06	1.534E+02
2008	6.277E+03	5.026E+06	3.377E+02	1.677E+03	2.513E+06	1.689E+02
2009	6.841E+03	5.478E+06	3.681E+02	1.827E+03	2.739E+06	1.840E+02
2010	7.359E+03	5.893E+06	3.960E+02	1.966E+03	2.947E+06	1.980E+02
2011	7.846E+03	6.283E+06	4.222E+02	2.096E+03	3.142E+06	2.111E+02
2012	8.328E+03	6.669E+06	4.481E+02	2.224E+03	3.334E+06	2.240E+02
2013	9.025E+03	7.226E+06	4.855E+02	2.411E+03	3.613E+06	2.428E+02
2014	9.841E+03	7.880E+06	5.295E+02	2.629E+03	3.940E+06	2.647E+02
2015	1.060E+04	8.486E+06	5.702E+02	2.831E+03	4.243E+06	2.851E+02
2016	1.134E+04	9.084E+06	6.104E+02	3.030E+03	4.542E+06	3.052E+02
2017	1.205E+04	9.650E+06	6.484E+02	3.219E+03	4.825E+06	3.242E+02
2018	1.236E+04	9.901E+06	6.652E+02	3.303E+03	4.950E+06	3.326E+02
2019	1.212E+04	9.705E+06	6.521E+02	3.237E+03	4.852E+06	3.260E+02
2020	1.188E+04	9.512E+06	6.391E+02	3.173E+03	4.756E+06	3.196E+02
2021	1.164E+04	9.324E+06	6.265E+02	3.110E+03	4.662E+06	3.132E+02
2022	1.141E+04	9.139E+06	6.141E+02	3.049E+03	4.570E+06	3.070E+02
2023	1.119E+04	8.958E+06	6.019E+02	2.988E+03	4.479E+06	3.010E+02
2024	1.097E+04	8.781E+06	5.900E+02	2.929E+03	4.391E+06	2.950E+02
2025	1.075E+04	8.607E+06	5.783E+02	2.871E+03	4.304E+06	2.892E+02
2026	1.054E+04	8.437E+06	5.669E+02	2.814E+03	4.218E+06	2.834E+02
2027	1.033E+04	8.270E+06	5.556E+02	2.759E+03	4.135E+06	2.778E+02
2028	1.012E+04	8.106E+06	5.446E+02	2.704E+03	4.053E+06	2.723E+02
2029	9.922E+03	7.945E+06	5.339E+02	2.650E+03	3.973E+06	2.669E+02
2030	9.726E+03	7.788E+06	5.233E+02	2.598E+03	3.894E+06	2.616E+02
2031	9.533E+03	7.634E+06	5.129E+02	2.546E+03	3.817E+06	2.565E+02
2032	9.345E+03	7.483E+06	5.028E+02	2.496E+03	3.741E+06	2.514E+02
2033	9.160E+03	7.335E+06	4.928E+02	2.447E+03	3.667E+06	2.464E+02
2034	8.978E+03	7.189E+06	4.831E+02	2.398E+03	3.595E+06	2.415E+02
2035	8.800E+03	7.047E+06	4.735E+02	2.351E+03	3.524E+06	2.367E+02
2036	8.626E+03	6.907E+06	4.641E+02	2.304E+03	3.454E+06	2.321E+02
2037	8.455E+03	6.771E+06	4.549E+02	2.259E+03	3.385E+06	2.275E+02
2038	8.288E+03	6.637E+06	4.459E+02	2.214E+03	3.318E+06	2.230E+02
2039	8.124E+03	6.505E+06	4.371E+02	2.170E+03	3.253E+06	2.185E+02
2040	7.963E+03	6.376E+06	4.284E+02	2.127E+03	3.188E+06	2.142E+02
2041	7.805E+03	6.250E+06	4.199E+02	2.085E+03	3.125E+06	2.100E+02
2042	7.651E+03	6.126E+06	4.116E+02	2.044E+03	3.063E+06	2.058E+02
2043	7.499E+03	6.005E+06	4.035E+02	2.003E+03	3.003E+06	2.017E+02

Results (Continued)

Year	Total landfill gas			Methane		
	(Mg/year)	(m ³ /year)	(av ft ³ /min)	(Mg/year)	(m ³ /year)	(av ft ³ /min)
2044	7.351E+03	5.886E+06	3.955E+02	1.963E+03	2.943E+06	1.977E+02
2045	7.205E+03	5.770E+06	3.877E+02	1.925E+03	2.885E+06	1.938E+02
2046	7.063E+03	5.655E+06	3.800E+02	1.886E+03	2.828E+06	1.900E+02
2047	6.923E+03	5.543E+06	3.725E+02	1.849E+03	2.772E+06	1.862E+02
2048	6.786E+03	5.434E+06	3.651E+02	1.813E+03	2.717E+06	1.825E+02
2049	6.651E+03	5.326E+06	3.579E+02	1.777E+03	2.663E+06	1.789E+02
2050	6.520E+03	5.221E+06	3.508E+02	1.741E+03	2.610E+06	1.754E+02
2051	6.390E+03	5.117E+06	3.438E+02	1.707E+03	2.559E+06	1.719E+02
2052	6.264E+03	5.016E+06	3.370E+02	1.673E+03	2.508E+06	1.685E+02
2053	6.140E+03	4.917E+06	3.303E+02	1.640E+03	2.458E+06	1.652E+02
2054	6.018E+03	4.819E+06	3.238E+02	1.608E+03	2.410E+06	1.619E+02
2055	5.899E+03	4.724E+06	3.174E+02	1.576E+03	2.362E+06	1.587E+02
2056	5.782E+03	4.630E+06	3.111E+02	1.545E+03	2.315E+06	1.556E+02
2057	5.668E+03	4.539E+06	3.049E+02	1.514E+03	2.269E+06	1.525E+02
2058	5.556E+03	4.449E+06	2.989E+02	1.484E+03	2.224E+06	1.495E+02
2059	5.446E+03	4.361E+06	2.930E+02	1.455E+03	2.180E+06	1.465E+02
2060	5.338E+03	4.274E+06	2.872E+02	1.426E+03	2.137E+06	1.436E+02
2061	5.232E+03	4.190E+06	2.815E+02	1.398E+03	2.095E+06	1.407E+02
2062	5.128E+03	4.107E+06	2.759E+02	1.370E+03	2.053E+06	1.380E+02
2063	5.027E+03	4.025E+06	2.705E+02	1.343E+03	2.013E+06	1.352E+02
2064	4.927E+03	3.946E+06	2.651E+02	1.316E+03	1.973E+06	1.326E+02
2065	4.830E+03	3.867E+06	2.599E+02	1.290E+03	1.934E+06	1.299E+02
2066	4.734E+03	3.791E+06	2.547E+02	1.265E+03	1.895E+06	1.274E+02
2067	4.640E+03	3.716E+06	2.497E+02	1.240E+03	1.858E+06	1.248E+02
2068	4.549E+03	3.642E+06	2.447E+02	1.215E+03	1.821E+06	1.224E+02
2069	4.458E+03	3.570E+06	2.399E+02	1.191E+03	1.785E+06	1.199E+02
2070	4.370E+03	3.499E+06	2.351E+02	1.167E+03	1.750E+06	1.176E+02
2071	4.284E+03	3.430E+06	2.305E+02	1.144E+03	1.715E+06	1.152E+02
2072	4.199E+03	3.362E+06	2.259E+02	1.122E+03	1.681E+06	1.130E+02
2073	4.116E+03	3.296E+06	2.214E+02	1.099E+03	1.648E+06	1.107E+02
2074	4.034E+03	3.230E+06	2.170E+02	1.078E+03	1.615E+06	1.085E+02
2075	3.954E+03	3.166E+06	2.128E+02	1.058E+03	1.583E+06	1.064E+02
2076	3.876E+03	3.104E+06	2.085E+02	1.035E+03	1.552E+06	1.043E+02
2077	3.799E+03	3.042E+06	2.044E+02	1.015E+03	1.521E+06	1.022E+02
2078	3.724E+03	2.982E+06	2.004E+02	9.947E+02	1.491E+06	1.002E+02
2079	3.650E+03	2.923E+06	1.964E+02	9.750E+02	1.461E+06	9.820E+01
2080	3.578E+03	2.865E+06	1.925E+02	9.557E+02	1.433E+06	9.625E+01
2081	3.507E+03	2.808E+06	1.887E+02	9.368E+02	1.404E+06	9.435E+01
2082	3.438E+03	2.753E+06	1.850E+02	9.182E+02	1.376E+06	9.248E+01
2083	3.370E+03	2.698E+06	1.813E+02	9.001E+02	1.349E+06	9.065E+01
2084	3.303E+03	2.645E+06	1.777E+02	8.822E+02	1.322E+06	8.885E+01
2085	3.238E+03	2.592E+06	1.742E+02	8.648E+02	1.296E+06	8.709E+01
2086	3.173E+03	2.541E+06	1.707E+02	8.477E+02	1.271E+06	8.537E+01
2087	3.111E+03	2.491E+06	1.674E+02	8.309E+02	1.245E+06	8.368E+01
2088	3.049E+03	2.441E+06	1.640E+02	8.144E+02	1.221E+06	8.202E+01
2089	2.989E+03	2.393E+06	1.608E+02	7.983E+02	1.197E+06	8.040E+01
2090	2.929E+03	2.346E+06	1.576E+02	7.825E+02	1.173E+06	7.881E+01
2091	2.871E+03	2.299E+06	1.545E+02	7.670E+02	1.150E+06	7.724E+01
2092	2.815E+03	2.254E+06	1.514E+02	7.518E+02	1.127E+06	7.572E+01
2093	2.759E+03	2.209E+06	1.484E+02	7.369E+02	1.105E+06	7.422E+01
2094	2.704E+03	2.165E+06	1.455E+02	7.223E+02	1.083E+06	7.275E+01

Results (Continued)

Year	Total landfill gas			Methane		
	(Mg/year)	(m ³ /year)	(av ft ³ /min)	(Mg/year)	(m ³ /year)	(av ft ³ /min)
2095	2.651E+03	2.123E+06	1.426E+02	7.080E+02	1.061E+06	7.131E+01
2096	2.598E+03	2.080E+06	1.398E+02	6.940E+02	1.040E+06	6.989E+01
2097	2.547E+03	2.039E+06	1.370E+02	6.803E+02	1.020E+06	6.851E+01
2098	2.496E+03	1.999E+06	1.343E+02	6.668E+02	9.995E+05	6.715E+01
2099	2.447E+03	1.959E+06	1.316E+02	6.536E+02	9.797E+05	6.582E+01
2100	2.398E+03	1.921E+06	1.290E+02	6.406E+02	9.603E+05	6.452E+01
2101	2.351E+03	1.883E+06	1.265E+02	6.280E+02	9.413E+05	6.324E+01
2102	2.304E+03	1.845E+06	1.240E+02	6.155E+02	9.226E+05	6.199E+01
2103	2.259E+03	1.809E+06	1.215E+02	6.033E+02	9.043E+05	6.076E+01
2104	2.214E+03	1.773E+06	1.191E+02	5.914E+02	8.864E+05	5.956E+01
2105	2.170E+03	1.738E+06	1.168E+02	5.797E+02	8.689E+05	5.838E+01
2106	2.127E+03	1.703E+06	1.144E+02	5.682E+02	8.517E+05	5.722E+01
2107	2.085E+03	1.670E+06	1.122E+02	5.569E+02	8.348E+05	5.609E+01
2108	2.044E+03	1.637E+06	1.100E+02	5.459E+02	8.183E+05	5.498E+01
2109	2.003E+03	1.604E+06	1.078E+02	5.351E+02	8.021E+05	5.389E+01
2110	1.964E+03	1.572E+06	1.056E+02	5.245E+02	7.862E+05	5.282E+01
2111	1.925E+03	1.541E+06	1.036E+02	5.141E+02	7.706E+05	5.178E+01
2112	1.887E+03	1.511E+06	1.015E+02	5.039E+02	7.554E+05	5.075E+01
2113	1.849E+03	1.481E+06	9.950E+01	4.940E+02	7.404E+05	4.975E+01
2114	1.813E+03	1.452E+06	9.753E+01	4.842E+02	7.258E+05	4.876E+01
2115	1.777E+03	1.423E+06	9.560E+01	4.746E+02	7.114E+05	4.780E+01
2116	1.742E+03	1.395E+06	9.370E+01	4.652E+02	6.973E+05	4.685E+01
2117	1.707E+03	1.367E+06	9.185E+01	4.560E+02	6.835E+05	4.592E+01
2118	1.673E+03	1.340E+06	9.003E+01	4.470E+02	6.700E+05	4.501E+01
2119	1.640E+03	1.313E+06	8.825E+01	4.381E+02	6.567E+05	4.412E+01
2120	1.608E+03	1.287E+06	8.650E+01	4.294E+02	6.437E+05	4.325E+01
2121	1.576E+03	1.262E+06	8.479E+01	4.209E+02	6.309E+05	4.239E+01
2122	1.545E+03	1.237E+06	8.311E+01	4.126E+02	6.184E+05	4.155E+01
2123	1.514E+03	1.212E+06	8.146E+01	4.044E+02	6.062E+05	4.073E+01
2124	1.484E+03	1.188E+06	7.985E+01	3.964E+02	5.942E+05	3.992E+01
2125	1.455E+03	1.165E+06	7.827E+01	3.886E+02	5.824E+05	3.913E+01
2126	1.426E+03	1.142E+06	7.672E+01	3.809E+02	5.709E+05	3.836E+01
2127	1.398E+03	1.119E+06	7.520E+01	3.733E+02	5.596E+05	3.760E+01
2128	1.370E+03	1.097E+06	7.371E+01	3.659E+02	5.485E+05	3.685E+01
2129	1.343E+03	1.075E+06	7.225E+01	3.587E+02	5.377E+05	3.612E+01
2130	1.316E+03	1.054E+06	7.082E+01	3.516E+02	5.270E+05	3.541E+01
2131	1.290E+03	1.033E+06	6.942E+01	3.446E+02	5.166E+05	3.471E+01
2132	1.265E+03	1.013E+06	6.804E+01	3.378E+02	5.063E+05	3.402E+01
2133	1.240E+03	9.926E+05	6.669E+01	3.311E+02	4.963E+05	3.335E+01
2134	1.215E+03	9.730E+05	6.537E+01	3.246E+02	4.865E+05	3.269E+01

Results (Continued)

Year	Carbon dioxide			NMOC		
	(Mg/year)	(m ³ /year)	(av ft ³ /min)	(Mg/year)	(m ³ /year)	(av ft ³ /min)
1994	0	0	0	0	0	0
1995	3.273E+02	1.788E+05	1.201E+01	9.337E-01	2.605E+02	1.750E-02
1996	6.289E+02	3.436E+05	2.308E+01	1.794E+00	5.006E+02	3.363E-02
1997	9.093E+02	4.968E+05	3.338E+01	2.594E+00	7.238E+02	4.863E-02
1998	1.207E+03	6.595E+05	4.431E+01	3.444E+00	9.609E+02	6.456E-02
1999	1.511E+03	8.253E+05	5.545E+01	4.310E+00	1.203E+03	8.080E-02
2000	1.809E+03	9.882E+05	6.640E+01	5.161E+00	1.440E+03	9.674E-02
2001	2.104E+03	1.149E+06	7.722E+01	6.002E+00	1.674E+03	1.125E-01
2002	2.395E+03	1.308E+06	8.791E+01	6.833E+00	1.906E+03	1.281E-01
2003	2.703E+03	1.477E+06	9.921E+01	7.711E+00	2.151E+03	1.445E-01
2004	3.027E+03	1.654E+06	1.111E+02	8.637E+00	2.410E+03	1.619E-01
2005	3.405E+03	1.860E+06	1.250E+02	9.715E+00	2.710E+03	1.821E-01
2006	3.787E+03	2.069E+06	1.390E+02	1.081E+01	3.014E+03	2.025E-01
2007	4.179E+03	2.283E+06	1.534E+02	1.192E+01	3.327E+03	2.235E-01
2008	4.600E+03	2.513E+06	1.689E+02	1.312E+01	3.662E+03	2.460E-01
2009	5.014E+03	2.739E+06	1.840E+02	1.431E+01	3.991E+03	2.681E-01
2010	5.394E+03	2.947E+06	1.980E+02	1.539E+01	4.293E+03	2.884E-01
2011	5.751E+03	3.142E+06	2.111E+02	1.641E+01	4.577E+03	3.075E-01
2012	6.103E+03	3.334E+06	2.240E+02	1.741E+01	4.858E+03	3.264E-01
2013	6.614E+03	3.613E+06	2.428E+02	1.887E+01	5.264E+03	3.537E-01
2014	7.213E+03	3.940E+06	2.647E+02	2.058E+01	5.741E+03	3.857E-01
2015	7.767E+03	4.243E+06	2.851E+02	2.216E+01	6.182E+03	4.154E-01
2016	8.314E+03	4.542E+06	3.052E+02	2.372E+01	6.618E+03	4.447E-01
2017	8.832E+03	4.825E+06	3.242E+02	2.520E+01	7.030E+03	4.723E-01
2018	9.062E+03	4.950E+06	3.326E+02	2.585E+01	7.213E+03	4.846E-01
2019	8.882E+03	4.852E+06	3.260E+02	2.534E+01	7.070E+03	4.750E-01
2020	8.706E+03	4.756E+06	3.196E+02	2.484E+01	6.930E+03	4.656E-01
2021	8.534E+03	4.662E+06	3.132E+02	2.435E+01	6.793E+03	4.564E-01
2022	8.365E+03	4.570E+06	3.070E+02	2.387E+01	6.658E+03	4.474E-01
2023	8.199E+03	4.479E+06	3.010E+02	2.339E+01	6.526E+03	4.385E-01
2024	8.037E+03	4.391E+06	2.950E+02	2.293E+01	6.397E+03	4.298E-01
2025	7.878E+03	4.304E+06	2.892E+02	2.248E+01	6.270E+03	4.213E-01
2026	7.722E+03	4.218E+06	2.834E+02	2.203E+01	6.146E+03	4.130E-01
2027	7.569E+03	4.135E+06	2.778E+02	2.159E+01	6.025E+03	4.048E-01
2028	7.419E+03	4.053E+06	2.723E+02	2.117E+01	5.905E+03	3.968E-01
2029	7.272E+03	3.973E+06	2.669E+02	2.075E+01	5.788E+03	3.889E-01
2030	7.128E+03	3.894E+06	2.616E+02	2.034E+01	5.674E+03	3.812E-01
2031	6.987E+03	3.817E+06	2.565E+02	1.993E+01	5.561E+03	3.737E-01
2032	6.849E+03	3.741E+06	2.514E+02	1.954E+01	5.451E+03	3.663E-01
2033	6.713E+03	3.667E+06	2.464E+02	1.915E+01	5.343E+03	3.590E-01
2034	6.580E+03	3.595E+06	2.415E+02	1.877E+01	5.237E+03	3.519E-01
2035	6.450E+03	3.524E+06	2.367E+02	1.840E+01	5.134E+03	3.449E-01
2036	6.322E+03	3.454E+06	2.321E+02	1.804E+01	5.032E+03	3.381E-01
2037	6.197E+03	3.385E+06	2.275E+02	1.768E+01	4.932E+03	3.314E-01
2038	6.074E+03	3.318E+06	2.230E+02	1.733E+01	4.835E+03	3.248E-01
2039	5.954E+03	3.253E+06	2.185E+02	1.699E+01	4.739E+03	3.184E-01
2040	5.836E+03	3.188E+06	2.142E+02	1.665E+01	4.645E+03	3.121E-01
2041	5.720E+03	3.125E+06	2.100E+02	1.632E+01	4.553E+03	3.059E-01
2042	5.607E+03	3.063E+06	2.058E+02	1.600E+01	4.463E+03	2.999E-01
2043	5.496E+03	3.003E+06	2.017E+02	1.568E+01	4.375E+03	2.939E-01

Results (Continued)

Year	Carbon dioxide			NMOC		
	(Mg/year)	(m ³ /year)	(av ft ³ /min)	(Mg/year)	(m ³ /year)	(av ft ³ /min)
2044	5.387E+03	2.943E+06	1.977E+02	1.537E+01	4.288E+03	2.881E-01
2045	5.281E+03	2.885E+06	1.938E+02	1.507E+01	4.203E+03	2.824E-01
2046	5.176E+03	2.828E+06	1.900E+02	1.477E+01	4.120E+03	2.768E-01
2047	5.074E+03	2.772E+06	1.862E+02	1.448E+01	4.038E+03	2.713E-01
2048	4.973E+03	2.717E+06	1.825E+02	1.419E+01	3.958E+03	2.660E-01
2049	4.875E+03	2.663E+06	1.789E+02	1.391E+01	3.880E+03	2.607E-01
2050	4.778E+03	2.610E+06	1.754E+02	1.363E+01	3.803E+03	2.555E-01
2051	4.683E+03	2.559E+06	1.719E+02	1.336E+01	3.728E+03	2.505E-01
2052	4.591E+03	2.508E+06	1.685E+02	1.310E+01	3.654E+03	2.455E-01
2053	4.500E+03	2.458E+06	1.652E+02	1.284E+01	3.582E+03	2.407E-01
2054	4.411E+03	2.410E+06	1.619E+02	1.258E+01	3.511E+03	2.359E-01
2055	4.323E+03	2.362E+06	1.587E+02	1.234E+01	3.441E+03	2.312E-01
2056	4.238E+03	2.315E+06	1.556E+02	1.209E+01	3.373E+03	2.266E-01
2057	4.154E+03	2.269E+06	1.525E+02	1.185E+01	3.306E+03	2.222E-01
2058	4.072E+03	2.224E+06	1.495E+02	1.162E+01	3.241E+03	2.178E-01
2059	3.991E+03	2.180E+06	1.465E+02	1.139E+01	3.177E+03	2.134E-01
2060	3.912E+03	2.137E+06	1.436E+02	1.116E+01	3.114E+03	2.092E-01
2061	3.835E+03	2.095E+06	1.407E+02	1.094E+01	3.052E+03	2.051E-01
2062	3.759E+03	2.053E+06	1.380E+02	1.072E+01	2.992E+03	2.010E-01
2063	3.684E+03	2.013E+06	1.352E+02	1.051E+01	2.932E+03	1.970E-01
2064	3.611E+03	1.973E+06	1.326E+02	1.030E+01	2.874E+03	1.931E-01
2065	3.540E+03	1.934E+06	1.299E+02	1.010E+01	2.817E+03	1.893E-01
2066	3.470E+03	1.895E+06	1.274E+02	9.899E+00	2.762E+03	1.856E-01
2067	3.401E+03	1.858E+06	1.248E+02	9.703E+00	2.707E+03	1.819E-01
2068	3.334E+03	1.821E+06	1.224E+02	9.511E+00	2.653E+03	1.783E-01
2069	3.268E+03	1.785E+06	1.199E+02	9.323E+00	2.601E+03	1.748E-01
2070	3.203E+03	1.750E+06	1.176E+02	9.138E+00	2.549E+03	1.713E-01
2071	3.139E+03	1.715E+06	1.152E+02	8.957E+00	2.499E+03	1.679E-01
2072	3.077E+03	1.681E+06	1.130E+02	8.780E+00	2.449E+03	1.646E-01
2073	3.016E+03	1.648E+06	1.107E+02	8.606E+00	2.401E+03	1.613E-01
2074	2.957E+03	1.615E+06	1.085E+02	8.435E+00	2.353E+03	1.581E-01
2075	2.898E+03	1.583E+06	1.064E+02	8.268E+00	2.307E+03	1.550E-01
2076	2.841E+03	1.552E+06	1.043E+02	8.105E+00	2.261E+03	1.519E-01
2077	2.784E+03	1.521E+06	1.022E+02	7.944E+00	2.216E+03	1.489E-01
2078	2.729E+03	1.491E+06	1.002E+02	7.787E+00	2.172E+03	1.460E-01
2079	2.675E+03	1.461E+06	9.820E+01	7.633E+00	2.129E+03	1.431E-01
2080	2.622E+03	1.433E+06	9.625E+01	7.482E+00	2.087E+03	1.402E-01
2081	2.570E+03	1.404E+06	9.435E+01	7.333E+00	2.046E+03	1.375E-01
2082	2.519E+03	1.376E+06	9.248E+01	7.188E+00	2.005E+03	1.347E-01
2083	2.470E+03	1.349E+06	9.065E+01	7.046E+00	1.966E+03	1.321E-01
2084	2.421E+03	1.322E+06	8.885E+01	6.906E+00	1.927E+03	1.295E-01
2085	2.373E+03	1.296E+06	8.709E+01	6.770E+00	1.889E+03	1.269E-01
2086	2.326E+03	1.271E+06	8.537E+01	6.636E+00	1.851E+03	1.244E-01
2087	2.280E+03	1.245E+06	8.368E+01	6.504E+00	1.815E+03	1.219E-01
2088	2.235E+03	1.221E+06	8.202E+01	6.375E+00	1.779E+03	1.195E-01
2089	2.190E+03	1.197E+06	8.040E+01	6.249E+00	1.743E+03	1.171E-01
2090	2.147E+03	1.173E+06	7.881E+01	6.125E+00	1.709E+03	1.148E-01
2091	2.104E+03	1.150E+06	7.724E+01	6.004E+00	1.675E+03	1.125E-01
2092	2.063E+03	1.127E+06	7.572E+01	5.885E+00	1.642E+03	1.103E-01
2093	2.022E+03	1.105E+06	7.422E+01	5.769E+00	1.609E+03	1.081E-01
2094	1.982E+03	1.083E+06	7.275E+01	5.654E+00	1.577E+03	1.060E-01

Results (Continued)

Year	Carbon dioxide			NMOC		
	(Mg/year)	(m ³ /year)	(av ft ³ /min)	(Mg/year)	(m ³ /year)	(av ft ³ /min)
2095	1.943E+03	1.061E+06	7.131E+01	5.542E+00	1.546E+03	1.039E-01
2096	1.904E+03	1.040E+06	6.989E+01	5.433E+00	1.516E+03	1.018E-01
2097	1.866E+03	1.020E+06	6.851E+01	5.325E+00	1.486E+03	9.982E-02
2098	1.830E+03	9.995E+05	6.715E+01	5.220E+00	1.456E+03	9.784E-02
2099	1.793E+03	9.797E+05	6.582E+01	5.116E+00	1.427E+03	9.590E-02
2100	1.758E+03	9.603E+05	6.452E+01	5.015E+00	1.399E+03	9.401E-02
2101	1.723E+03	9.413E+05	6.324E+01	4.916E+00	1.371E+03	9.214E-02
2102	1.689E+03	9.226E+05	6.199E+01	4.818E+00	1.344E+03	9.032E-02
2103	1.655E+03	9.043E+05	6.076E+01	4.723E+00	1.318E+03	8.853E-02
2104	1.623E+03	8.864E+05	5.956E+01	4.629E+00	1.292E+03	8.678E-02
2105	1.590E+03	8.689E+05	5.838E+01	4.538E+00	1.266E+03	8.506E-02
2106	1.559E+03	8.517E+05	5.722E+01	4.448E+00	1.241E+03	8.338E-02
2107	1.528E+03	8.348E+05	5.609E+01	4.360E+00	1.216E+03	8.172E-02
2108	1.498E+03	8.183E+05	5.498E+01	4.274E+00	1.192E+03	8.011E-02
2109	1.468E+03	8.021E+05	5.389E+01	4.189E+00	1.169E+03	7.852E-02
2110	1.439E+03	7.862E+05	5.282E+01	4.106E+00	1.145E+03	7.697E-02
2111	1.411E+03	7.706E+05	5.178E+01	4.025E+00	1.123E+03	7.544E-02
2112	1.383E+03	7.554E+05	5.075E+01	3.945E+00	1.101E+03	7.395E-02
2113	1.355E+03	7.404E+05	4.975E+01	3.867E+00	1.079E+03	7.248E-02
2114	1.328E+03	7.258E+05	4.876E+01	3.790E+00	1.057E+03	7.105E-02
2115	1.302E+03	7.114E+05	4.780E+01	3.715E+00	1.036E+03	6.964E-02
2116	1.276E+03	6.973E+05	4.685E+01	3.642E+00	1.016E+03	6.826E-02
2117	1.251E+03	6.835E+05	4.592E+01	3.570E+00	9.958E+02	6.691E-02
2118	1.226E+03	6.700E+05	4.501E+01	3.499E+00	9.761E+02	6.559E-02
2119	1.202E+03	6.567E+05	4.412E+01	3.430E+00	9.568E+02	6.429E-02
2120	1.178E+03	6.437E+05	4.325E+01	3.362E+00	9.379E+02	6.301E-02
2121	1.155E+03	6.309E+05	4.239E+01	3.295E+00	9.193E+02	6.177E-02
2122	1.132E+03	6.184E+05	4.155E+01	3.230E+00	9.011E+02	6.054E-02
2123	1.110E+03	6.062E+05	4.073E+01	3.166E+00	8.832E+02	5.934E-02
2124	1.088E+03	5.942E+05	3.992E+01	3.103E+00	8.657E+02	5.817E-02
2125	1.066E+03	5.824E+05	3.913E+01	3.042E+00	8.486E+02	5.702E-02
2126	1.045E+03	5.709E+05	3.836E+01	2.982E+00	8.318E+02	5.589E-02
2127	1.024E+03	5.596E+05	3.760E+01	2.923E+00	8.153E+02	5.478E-02
2128	1.004E+03	5.485E+05	3.685E+01	2.865E+00	7.992E+02	5.370E-02
2129	9.842E+02	5.377E+05	3.612E+01	2.808E+00	7.834E+02	5.263E-02
2130	9.647E+02	5.270E+05	3.541E+01	2.752E+00	7.678E+02	5.159E-02
2131	9.456E+02	5.166E+05	3.471E+01	2.698E+00	7.526E+02	5.057E-02
2132	9.269E+02	5.063E+05	3.402E+01	2.644E+00	7.377E+02	4.957E-02
2133	9.085E+02	4.963E+05	3.335E+01	2.592E+00	7.231E+02	4.859E-02
2134	8.905E+02	4.865E+05	3.269E+01	2.541E+00	7.088E+02	4.762E-02

FUGITIVE LANDFILL GAS EMISSIONS (EU-1)

Hazardous Air Pollutants (HAPs) Summary

Bonneville County - Peterson Hill Landfill

2017 Tier I Operating Permit Application

Calculated By: Travis Pyle, PE/Great West

Date: 1-Dec-17

Checked By: Maureen McGraw, PE/Tetra Tech

Date: 7-Dec-17

Enter year of emissions inventory: 2017

<Copied from LandGEM Model Inventory Worksheet>

HAP Pollutant	Emission Rate (Potential to Emit - PTE)				
	(Mg/year)	(m ³ /year)	(av ft ³ /min)	(ft ³ /year)	(tons/year)
1,1,1-Trichloroethane (methyl chloroform) - HAP	2.570E-02	4.632E+00	3.112E-04	1.636E+02	2.827E-02
1,1,2,2-Tetrachloroethane - HAP/VOC	7.411E-02	1.061E+01	7.132E-04	3.749E+02	8.152E-02
1,1-Dichloroethane (ethylidene dichloride) - HAP/VOC	9.534E-02	2.316E+01	1.556E-03	8.179E+02	1.049E-01
1,1-Dichloroethene (vinylidene chloride) - HAP/VOC	7.782E-03	1.930E+00	1.297E-04	6.816E+01	8.560E-03
1,2-Dichloroethane (ethylene dichloride) - HAP/VOC	1.629E-02	3.956E+00	2.658E-04	1.397E+02	1.791E-02
1,2-Dichloropropane (propylene dichloride) - HAP/VOC	8.183E-03	1.737E+00	1.167E-04	6.134E+01	8.979E-03
2-Propanol (isopropyl alcohol) - VOC	1.206E+00	4.825E+02	3.242E-02	1.704E+04	1.327E+00
Acetone	1.632E-01	6.755E+01	4.539E-03	2.386E+03	1.795E-01
Acrylonitrile - HAP/VOC	1.342E-01	6.079E+01	4.085E-03	2.147E+03	1.476E-01
Benzene - No or Unknown Co-disposal - HAP/VOC	5.957E-02	1.833E+01	1.232E-03	6.475E+02	6.552E-02
Benzene - Co-disposal - HAP/VOC	3.449E-01	1.061E+02	7.132E-03	3.749E+03	3.793E-01
Bromodichloromethane - VOC	2.038E-01	2.991E+01	2.010E-03	1.056E+03	2.242E-01
Butane - VOC	1.166E-01	4.825E+01	3.242E-03	1.704E+03	1.283E-01
Carbon disulfide - HAP/VOC	1.772E-02	5.597E+00	3.761E-04	1.977E+02	1.949E-02
Carbon monoxide	1.574E+00	1.351E+03	9.077E-02	4.771E+04	1.731E+00
Carbon tetrachloride - HAP/VOC	2.470E-04	3.860E-02	2.594E-06	1.363E+00	2.717E-04
Carbonyl sulfide - HAP/VOC	1.181E-02	4.728E+00	3.177E-04	1.670E+02	1.300E-02
Chlorobenzene - HAP/VOC	1.129E-02	2.412E+00	1.621E-04	8.520E+01	1.242E-02
Chlorodifluoromethane	4.512E-02	1.254E+01	8.429E-04	4.430E+02	4.963E-02
Chloroethane (ethyl chloride) - HAP/VOC	3.367E-02	1.254E+01	8.429E-04	4.430E+02	3.703E-02
Chloroform - HAP/VOC	1.438E-03	2.895E-01	1.945E-05	1.022E+01	1.581E-03
Chloromethane - VOC	2.432E-02	1.158E+01	7.781E-04	4.089E+02	2.675E-02
Dichlorobenzene - (HAP for para isomer/VOC)	1.239E-02	2.026E+00	1.362E-04	7.157E+01	1.363E-02
Dichlorodifluoromethane	7.765E-01	1.544E+02	1.037E-02	5.453E+03	8.541E-01
Dichlorofluoromethane - VOC	1.074E-01	2.509E+01	1.686E-03	8.861E+02	1.181E-01
Dichloromethane (methylene chloride) - HAP	4.773E-01	1.351E+02	9.077E-03	4.771E+03	5.250E-01
Dimethyl sulfide (methyl sulfide) - VOC	1.945E-01	7.527E+01	5.057E-03	2.658E+03	2.140E-01
Ethane	1.074E+01	8.588E+03	5.771E-01	3.033E+05	1.182E+01
Ethanol - VOC	4.994E-01	2.605E+02	1.751E-02	9.201E+03	5.493E-01
Ethyl mercaptan (ethanethiol) - VOC	5.736E-02	2.219E+01	1.491E-03	7.838E+02	6.309E-02
Ethylbenzene - HAP/VOC	1.960E-01	4.439E+01	2.983E-03	1.568E+03	2.156E-01
Ethylene dibromide - HAP/VOC	7.541E-05	9.650E-03	6.484E-07	3.408E-01	8.295E-05
Fluorotrichloromethane - VOC	4.191E-02	7.334E+00	4.928E-04	2.590E+02	4.610E-02
Hexane - HAP/VOC	2.283E-01	6.369E+01	4.279E-03	2.249E+03	2.511E-01
Hydrogen sulfide	4.924E-01	3.474E+02	2.334E-02	1.227E+04	5.417E-01
Mercury (total) - HAP	2.335E-05	2.798E-03	1.880E-07	9.883E-02	2.569E-05
Methyl ethyl ketone - HAP/VOC	2.055E-01	6.851E+01	4.604E-03	2.420E+03	2.260E-01
Methyl isobutyl ketone - HAP/VOC	7.638E-02	1.833E+01	1.232E-03	6.475E+02	8.402E-02
Methyl mercaptan - VOC	4.827E-02	2.412E+01	1.621E-03	8.520E+02	5.310E-02
Pentane - VOC	9.558E-02	3.184E+01	2.140E-03	1.125E+03	1.051E-01
Perchloroethylene (tetrachloroethylene) - HAP	2.463E-01	3.570E+01	2.399E-03	1.261E+03	2.709E-01
Propane - VOC	1.947E-01	1.061E+02	7.132E-03	3.749E+03	2.141E-01
1,2-Dichloroethene - VOC	1.089E-01	2.702E+01	1.815E-03	9.542E+02	1.198E-01
Toluene - No or Unknown Co-disposal - HAP/VOC	1.442E+00	3.763E+02	2.529E-02	1.329E+04	1.586E+00
Toluene - Co-disposal - HAP/VOC	6.286E+00	1.640E+03	1.102E-01	5.793E+04	6.915E+00
Trichloroethylene (trichloroethene) - HAP/VOC	1.477E-01	2.702E+01	1.815E-03	9.542E+02	1.624E-01
Vinyl chloride - HAP/VOC	1.831E-01	7.044E+01	4.733E-03	2.488E+03	2.014E-01
Xylenes - HAP/VOC	5.113E-01	1.158E+02	7.781E-03	4.089E+03	5.624E-01
Total HAPs/VOCs (Combination)					30.30
HAPs - Only					11.94
VOCs - Only					3.19

VOCs - Only DEQ Corrected 4/2/2018	14.31
Total HAPs/VOCs (Combination) DEQ Corrected 4/2/2018	15.13

Note: Applicant has included non HAPs/VOC chemicals in original "Total HAPs/VOCs (Combination) estimate, such as Carbon Monoxide. This has been corrected. In addition, applicant has not included all chemicals tagged as "VOC" or "HAP/VOC" in "VOCs - Only" estimate, only those tagged as "VOC". This has been corrected to include both designations in estimate total.

FUGITIVE DUST EMISSIONS (EU-2)

EU-2 (Fugitive Dust) Emissions Calculation Estimate R1 (To Equipment Building)

Bonneville County - Peterson Hill Landfill

2017 Tier I Operations Permit Application

Calculated By: Travis Pyle, PE/Great West

Checked By: Maureen McGraw, PE/Tetra Tech

Date: 1-Dec-17

Date: 7-Dec-17

I. Paved Roads: (Assumed None - RAP Covered with Dirt)

Calculate Fugitive Dust Emissions using AP-42, 13.2.1.3 Equation 1:

$$E = k (sL) E = k (sL)^{0.91} \times (W)^{1.02}$$

where,

E = particulate emission factor (units matching k)
 k = is an empirical constant (per AP-42 Table 13.2.1-1)
 sL = road surface silt loading (g/m²)
 W = average vehicle weight (tons)

Vehicles Miles Traveled (VMT):

Days Open Per Year =	261	Closed Weekends and Federal Holidays
Trips per day =	0	assumed daily average traffic to and from
Road Section Miles =	0.47	measured from E. Sunnyside Rd (round trip)
VMT =	0	per year

1. Calculate PM₁₀ Emissions:

k = 0.0022 lbs/VMT
 sL = 7.4 g/m² (per AP-42 Table 13.2.1-3)
 W = 2 tons

Result,

E (PM₁₀) = 0.03 lb/VMT

VMT = 0 vehicle miles traveled
 Control Eff. = 0% (worst-case - no moisture/wetting)

Annual E (PM₁₀) =	0.000 tons/yr
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2. Calculate PM-2.5 Emissions

Inputs,

k = 0.00054 lbs/VMT
 sL = 7.4 g/m² (per AP-42 Table 13.2.1-3)
 W = 2 tons

Result,

E (PM_{2.5}) = 0.01 lb/VMT

VMT = 0 vehicle miles traveled

Control Eff. = 0% (worst-case - no moisture/wetting)

Annual E (PM_{2.5}) = 0.000 tons/yr

3. Calculate PM-30 = Total Suspended Particulate (TSP) Matter Emissions

Inputs,

k = 0.01100 lbs/VMT

sL = 7.4 g/m² (per AP-42 Table 13.2.1-3)

W = 2 tons

Result,

E (PM₃₀) = 0.14 lb/VMT

VMT = 0 vehicle miles traveled

Control Eff. = 0% (worst-case - no moisture/wetting)

Annual E (PM₃₀ = TSP) = 0.000 tons/yr

II. Unpaved Roads:

Calculate Fugitive Dust Emissions using AP-42, 13.2.2 Equation 1a and Equation 2:

$$E = k (s/12)^a (W/3)^b \quad \text{Eq. 1a}$$

where,

k, a, b, and c are empirical constants - see AP-42 Tables

E = size-specific emission factor (lb/VMT)

s = surface material silt content (%)

W = mean vehicle weight (tons)

Vehicles Miles Traveled (VMT):

Days Open Per Year =	261	Closed Sundays and Major Holidays
Trips per day =	1	assumed daily average traffic to and from
Road Section Miles =	0.11	measured from E. Sunnyside Rd (round trip)
VMT =	30	per year

1. Calculate PM₁₀ Emissions:

Inputs,

k = 1.5 lb/VMT (Table 13.2.2-2)

a = 0.9

b = 0.45

s = 6.4 <per Table 13.2.2-1>

W = 2 tons (passenger truck)

Result,

E (PM₁₀) = 0.710 lb/VMT

VMT = 30 vehicle miles traveled

Control Eff. = 25%

Annual E (PM₁₀) = 0.008 tons/yr

2. Calculate PM-2.5 Emissions

Inputs,

k = 0.15 lb/VMT (Table 13.2.2-2)
a = 0.9
b = 0.45
s = 6.4 <per Table 13.2.2-1>
W = 2 tons (passenger truck)

Result,

E (PM-2.5) = 0.071 lb/VMT

VMT = 30 vehicle miles traveled
Control Eff. = 25%

Annual E (PM-2.5) = 0.001 tons/yr

3. Calculate PM-30 = Total Suspended Particulate (TSP) Matter Emissions

Inputs,

k = 4.9 lb/VMT (Table 13.2.2-2)
a = 0.7
b = 0.45
s = 6.4 <per Table 13.2.2-1>
W = 2 tons (passenger truck)

Result,

E (TSP) = 2.63 lb/VMT

VMT = 30 vehicle miles traveled
Control Eff. = 25%

Annual E (PM₃₀ = TSP) = 0.029 tons/yr

EU-2 (Fugitive Dust) Emissions Calculation Estimate R2 (To Dead Animal Pit)

Bonneville County - Peterson Hill Landfill

2017 Tier I Operations Permit Application

Calculated By: Travis Pyle, PE/Great West

Checked By: Maureen McGraw, PE/Tetra Tech

Date: 1-Dec-17

Date: 7-Dec-17

I. Paved Roads: (Assumed None - RAP Covered with Dirt)

Calculate Fugitive Dust Emissions using AP-42, 13.2.1.3 Equation 1:

$$E = k (sL)^{0.91} \times (W)^{1.02}$$

where,

E = particulate emission factor (units matching k)
 k = is an empirical constant (per AP-42 Table 13.2.1-1)
 sL = road surface silt loading (g/m²)
 W = average vehicle weight (tons)

Vehicles Miles Traveled (VMT):

Days Open Per Year =	303	Closed Sundays and Major Holidays
Trips per day =	0	assumed daily average traffic to and from
Road Section Miles =	0.61	measured from E. Sunnyside Rd (round trip)
VMT =	0	per year

1. Calculate PM₁₀ Emissions:

k =	0.0022 lbs/VMT
sL =	7.4 g/m ² (per AP-42 Table 13.2.1-3)
W =	2 tons

Result,

E (PM₁₀) = 0.03 lb/VMT

VMT =	0 vehicle miles traveled
Control Eff. =	0% (worst-case - no moisture/wetting)

Annual E (PM ₁₀) =	0.000 tons/yr
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2. Calculate PM-2.5 Emissions

Inputs,

k =	0.00054 lbs/VMT
sL =	7.4 g/m ² (per AP-42 Table 13.2.1-3)
W =	2 tons

Result,

E (PM_{2.5}) = 0.01 lb/VMT

VMT =	0 vehicle miles traveled
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Control Eff. = 0% (worst-case - no moisture/wetting)

Annual E (PM_{2.5}) = 0.000 tons/yr

3. Calculate PM-30 = Total Suspended Particulate (TSP) Matter Emissions

Inputs,

k = 0.01100 lbs/VMT

sL = 7.4 g/m² (per AP-42 Table 13.2.1-3)

W = 2 tons

Result,

E (PM₃₀) = 0.14 lb/VMT

VMT = 0 vehicle miles traveled

Control Eff. = 0% (worst-case - no moisture/wetting)

Annual E (PM₃₀ = TSP) = 0.000 tons/yr

II. Unpaved Roads:

Calculate Fugitive Dust Emissions using AP-42, 13.2.2 Equation 1a and Equation 2:

$$E = k (s/12)^a (W/3)^b$$

Eq. 1a

where,

k, a, b, and c are empirical constants - see AP-42 Tables

E = size-specific emission factor (lb/VMT)

s = surface material silt content (%)

W = mean vehicle weight (tons)

Vehicles Miles Traveled (VMT):

Days Open Per Year =	261	Closed Sundays and Major Holidays
Trips per day =	5	assumed daily average traffic to and from
Road Section Miles =	0.61	measured from E. Sunnyside Rd (round trip)
VMT =	791	per year

1. Calculate PM₁₀ Emissions:

Inputs,

k = 1.5 lb/VMT (Table 13.2.2-2)

a = 0.9

b = 0.45

s = 6.4 <per Table 13.2.2-1>

W = 2.5 tons (passenger truck with dead animal one way)

Result,

E (PM₁₀) = 0.785 lb/VMT

VMT = 791 vehicle miles traveled

Control Eff. = 25%

Annual E (PM₁₀) = 0.233 tons/yr

2. Calculate PM-2.5 Emissions

Inputs,

k = 0.15 lb/VMT (Table 13.2.2-2)
a = 0.9
b = 0.45
s = 6.4 <per Table 13.2.2-1>
W = 2.5 tons (passenger truck with dead animal one way)

Result,

E (PM-2.5) = 0.078 lb/VMT

VMT = 791 vehicle miles traveled

Control Eff. = 25%

Annual E (PM-2.5) = 0.023 tons/yr

3. Calculate PM-30 = Total Suspended Particulate (TSP) Matter Emissions

Inputs,

k = 4.9 lb/VMT (Table 13.2.2-2)
a = 0.7
b = 0.45
s = 6.4 <per Table 13.2.2-1>
W = 2.5 tons (passenger truck with dead animal one way)

Result,

E (TSP) = 2.91 lb/VMT

VMT = 791 vehicle miles traveled

Control Eff. = 25%

Annual E (PM₃₀ = TSP) = 0.862 tons/yr

EU-2 (Fugitive Dust) Emissions Calculation Estimate R3 (To Phase 3)

Bonneville County - Peterson Hill Landfill

2017 Tier I Operations Permit Application

Calculated By: Travis Pyle, PE/Great West

Checked By: Maureen McGraw, PE/Tetra Tech

Date: 1-Dec-17

Date: 7-Dec-17

I. Paved Roads: (Assumed None - RAP Covered with Dirt)

Calculate Fugitive Dust Emissions using AP-42, 13.2.1.3 Equation 1:

$$E = k (s/L) E = k (sL)^{0.91} \times (W)^{1.02}$$

where,

E = particulate emission factor (units matching k)
 k = is an empirical constant (per AP-42 Table 13.2.1-1)
 sL = road surface silt loading (g/m²)
 W = average vehicle weight (tons)

Vehicles Miles Traveled (VMT):

Days Open Per Year =	261	Closed Sundays and Major Holidays
Trips per day =	0	assumed daily average traffic to and from
Road Section Miles =	0.47	measured from E. Sunnyside Rd (round trip)
VMT =	0	per year

1. Calculate PM₁₀ Emissions:

k = 0.0022 lbs/VMT
 sL = 7.4 g/m² (per AP-42 Table 13.2.1-3)
 W = 40 tons (transfer truck and trailer)

Result,

E (PM₁₀) = 0.59 lb/VMT

VMT = 0 vehicle miles traveled
 Control Eff. = 0% (worst-case - no moisture/wetting)

Annual E (PM₁₀) =	0.000 tons/yr
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2. Calculate PM-2.5 Emissions

Inputs,

k = 0.00054 lbs/VMT
 sL = 7.4 g/m² (per AP-42 Table 13.2.1-3)
 W = 40 tons (transfer truck and trailer)

Result,

E (PM_{2.5}) = 0.14 lb/VMT

VMT = 0 vehicle miles traveled

Control Eff. = 0% (worst-case - no moisture/wetting)

Annual E (PM_{2.5}) = 0.000 tons/yr

3. Calculate PM-30 = Total Suspended Particulate (TSP) Matter Emissions

Inputs,

k = 0.01100 lbs/VMT

sL = 7.4 g/m² (per AP-42 Table 13.2.1-3)

W = 40 tons (transfer truck and trailer)

Result,

E (PM₃₀) = 2.93 lb/VMT

VMT = 0 vehicle miles traveled

Control Eff. = 0% (worst-case - no moisture/wetting)

Annual E (PM₃₀ = TSP) = 0.000 tons/yr

II. Unpaved Roads:

Calculate Fugitive Dust Emissions using AP-42, 13.2.2 Equation 1a and Equation 2:

$$E = k (s/12)^a (W/3)^b \quad \text{Eq. 1a}$$

where,

k, a, b, and c are empirical constants - see AP-42 Tables

E = size-specific emission factor (lb/VMT)

s = surface material silt content (%)

W = mean vehicle weight (tons)

Vehicles Miles Traveled (VMT):

Days Open Per Year =	303	Closed Sundays and Major Holidays
Trips per day =	19	assumed daily average traffic to and from
Road Section Miles =	1.21	measured from E. Sunnyside Rd (round trip)
VMT =	6,978	per year

1. Calculate PM₁₀ Emissions:

Inputs,

k = 1.5 lb/VMT (Table 13.2.2-2)

a = 0.9

b = 0.45

s = 6.4 <per Table 13.2.2-1>

W = 40 tons

Result,

E (PM₁₀) = 2.733 lb/VMT

VMT = 6,978 vehicle miles traveled

Control Eff. = 25%

Annual E (PM₁₀) = 7.151 tons/yr

2. Calculate PM-2.5 Emissions

Inputs,

k = 0.15 lb/VMT (Table 13.2.2-2)
a = 0.9
b = 0.45
s = 6.4 <per Table 13.2.2-1>
W = 40 tons

Result,

E (PM-2.5) = 0.273 lb/VMT

VMT = 6,978 vehicle miles traveled
Control Eff. = 25%

Annual E (PM-2.5) = 0.715 tons/yr

3. Calculate PM-30 = Total Suspended Particulate (TSP) Matter Emissions

Inputs,

k = 4.9 lb/VMT (Table 13.2.2-2)
a = 0.7
b = 0.45
s = 6.4 <per Table 13.2.2-1>
W = 40 tons

Result,

E (TSP) = 10.12 lb/VMT

VMT = 6,978 vehicle miles traveled
Control Eff. = 25%

Annual E (PM₃₀ = TSP) = 26.491 tons/yr

EU-2 (Fugitive Dust) Emissions Calculation Estimate

Paved and Unpaved Roads: Summary

Bonneville County - Peterson Hill Landfill

2017 Tier I Operations Permit Application

Calculated By: Travis Pyle, PE/Great West

Checked By: Maureen McGraw, PE/Tetra Tech

Date: 1-Dec-17

Date: 7-Dec-17

Paved Roads: (None - Assumed all RAP Roads are covered with dirt)

Destination	Road ID	Annual VMT	Annual PM-10 (tons/yr)	Annual PM-2.5 (tons/yr)	Annual PM-30 (TSP) (tons/yr)
To Equipment Bldg	R1	0	0.000	0.000	0.000
To Dead Animal Pit	R2	0	0.000	0.000	0.000
To Phase 3	R3	0	0.000	0.000	0.000
Total		0	0.000	0.000	0.000

Unpaved Roads:

Destination	Road ID	Annual VMT	Annual PM-10 (tons/yr)	Annual PM-2.5 (tons/yr)	Annual PM-30 (TSP) (tons/yr)
To Equipment Bldg	R1	30	0.008	0.001	0.029
To Dead Animal Pit	R2	791	0.233	0.023	0.862
To Phase 3	R3	6,978	7.151	0.715	26.491
Total		7,799	7.392	0.739	27.382

Paved and Unpaved Roads:

Destination	Road ID	Annual VMT	Annual PM-10 (tons/yr)	Annual PM-2.5 (tons/yr)	Annual PM-30 (TSP) (tons/yr)
To Equipment Bldg	R1	30	0.008	0.001	0.029
To Dead Animal Pit	R2	791	0.233	0.023	0.862
To Phase 3	R3	6,978	7.151	0.715	26.491
Total		7,799	7.392	0.739	27.382

EU-2 (Fugitive Dust) Emissions Calculation Estimate

Landfill Operations - Dozing and Grading

Bonneville County - Peterson Hill Landfill

2017 Tier I Operations Permit Application

Calculated By: Travis Pyle, PE/Great West

Checked By: Maureen McGraw, PE/Tetra Tech

Date: 1-Dec-17

Date: 11-Dec-17

1. Dozing/Scraping Operations

Calculate Fugitive Dust Emissions using AP-42, Section 11.9 (Table 11.9-1)

1. Calculate PM₁₀ Emissions:

$$E = \frac{1.0 (s)^{1.5}}{(M)^{1.4}} \times SF$$

where,

E = particulate emission factor (lb/hr)

s = surface material silt content (%)

M = material moisture content

SF = Scaling Factor

Inputs,

s = 6.4 <MSW Landfills, per Table 13.2.2-1>

M = 7.9 <assumed moisture content>

SF = 0.75 <per Table 11.9-1>

Result,

E (PM₁₀) = 0.672 lb/hr

Hours of Ops = 10 hrs/day

2610 hrs/yr

Control Eff. = 0%

(261 days/yr x 8 hrs/day)

Annual E (PM₁₀) =	0.878 tons/yr
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2. Calculate PM-2.5 Emissions:

$$E = \frac{5.7 (s)^{1.2}}{(M)^{1.3}} \times SF$$

where,

E = particulate emission factor (lb/hr)

s = surface material silt content (%)

M = material moisture content

SF = Scaling Factor = 1.0 for TSP

Inputs,

s = 6.4 <MSW Landfills, per Table 13.2.2-1>

M = 7.9 <assumed moisture content>

SF = 0.105 <per Table 11.9-1>

Result,

E (PM-2.5) = 0.378 lb/hr

Hours of Ops = 10 hrs/day 2610 hrs/yr
Control Eff. = 0%

Annual E (PM_{2.5}) = 0.493 tons/yr

3. Calculate TSP Emissions:

$$E = \frac{5.7 (s)^{1.2}}{(M)^{1.3}}$$

where,

E = particulate emission factor (lb/hr)
s = surface material silt content (%)
M = material moisture content
SF = Scaling Factor = 1.0 for TSP

Inputs,

s = 6.4 <per Table 13.2.2-1>
M = 7.9 <assumed moisture content>

Result,

E (TSP) = 3.601 lb/hr

Hours of Ops = 10 hrs/day 2610 hrs/yr
Control Eff. = 0%

Annual E (TSP) = 4.70 tons/yr

2. Grading/Compacting Operations

Calculate Fugitive Dust Emissions using AP-42, Section 11.9 (Table 11.9.1)

1. Calculate PM₁₀ Emissions:

$$E = 0.051 (S)^{2.0} \times SF$$

where,

E = particulate emission factor (lb/hr)
s = surface material silt content (%)
SF = Scaling Factor

Inputs,

s = 6.4 <MSW Landfills, per Table 13.2.2-1>
SF = 0.60 <per Table 11.9-1>

Result,

E (PM-10) = 1.253 lb/hr

Hours of Ops = 10 hrs/day 2610 hrs/yr
Control Eff. = 0%

Annual E (PM-10) =	1.64 tons/yr
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2. Calculate PM-2.5 Emissions:

$$E = 0.040 (S)^{2.5} \times SF$$

where,

E = particulate emission factor (lb/hr)

s = surface material silt content (%)

SF = Scaling Factor

Inputs,

s = 6.4 <MSW Landfills, per Table 13.2.2-1>

SF = 0.031 <per Table 11.9-1>

Result,

E (PM-2.5) = 0.128 lb/hr

Hours of Ops = 10 hrs/day 2610 hrs/yr

Control Eff. = 0%

Annual E (PM_{2.5}) =	0.168 tons/yr
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3. Calculate TSP Emissions:

$$E = 0.040 (S)^{2.5}$$

where,

E = particulate emission factor (lb/hr)

s = surface material silt content (%)

SF = Scaling Factor

Inputs,

s = 6.4 <MSW Landfills, per Table 13.2.2-1>

Result,

E (PM-2.5) = 4.145 lb/hr

Hours of Ops = 10 hrs/day 2610 hrs/yr

Control Eff. = 0%

Annual E (TSP) =	5.41 tons/yr
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EU-2 (Fugitive Dust) Emissions Calculation Estimate

Landfill Operations: Summary

Bonneville County - Peterson Hill Landfill

2017 Tier I Operations Permit Application

Calculated By: Travis Pyle, PE/Great West

Date: 1-Dec-17

Checked By: Maureen McGraw, PE/Tetra Tech

Date: 11-Dec-17

Dozing/Scraping & Grading

Activity	Annual Hours	Annual PM-10 (tons/yr)	Annual PM-2.5 (tons/yr)	Annual TSP (tons/yr)
Dozing/Scraping	2,610	0.878	0.493	4.699
Grading/Compacting	2,610	1.636	0.168	5.409
Total	5,220	2.513	0.661	10.108

USED OIL HEATER (IEU-1)

IEU-1 Emissions Calculation Estimate

Maintenance Shop Used Oil Heater

Bonneville County - Peterson Hill Landfill
 2017 Tier I Operations Permit Application

Calculated By: Travis Pyle, PE/Great West
 Date: 1-Dec-17

Checked By: Maureen McGraw, PE/Tetra Tech
 Date: 7-Dec-17

Input Data:

Fuel Combustion Rate	0.25	MMBtu/hr
Fuel Consumption Rate	1.7	gal/hr
Hours of operation/yr	8760	hr/yr
Fuel Usage	1.49E+04	gal/yr
Fuel High heating value	150	MMBtu/10 ³ gal
Weight % Ash in Fuel, A	5	%
Weight % Sulfur in Fuel, S	3.4	%
Conversion Factors	454	grams/lb
	2000	lb/ton

Source/Notes

Manufacturer's Data - Clean Burn Model 2500
 Manufacturer's Data
 Default Formula Requirement
 Calculated - gal/hr X 8760 hr/yr
 per AP-42 Section 1.11.3
 Assumed 5%
 Assumed 3.4%

Each Unit:

Pollutant (Atomizing Burner)	Emission Factor	Units	Emission Factor Reference	Emissions (lb/hr)	Emissions (tons/yr)
PM ^(a)	330	lb/10 ³ gal	AP-42 Table 1.11-1 (10/96)	5.50E-01	2.41E+00
PM-10 ^(b)	285	lb/10 ³ gal	AP-42 Table 1.11-1 (10/96)	4.75E-01	2.08E+00
Pb ^(c)	0.0	lb/10 ³ gal	AP-42 Table 1.11-1 (10/96)	0.00E+00	0.00E+00
NOx	16	lb/10 ³ gal	AP-42 Table 1.11-2 (10/96)	2.67E-02	1.17E-01
SOx ^(d)	363.8	lb/10 ³ gal	AP-42 Table 1.11-2 (10/96)	6.06E-01	2.66E+00
CO	2.1	lb/10 ³ gal	AP-42 Table 1.11-2 (10/96)	3.50E-03	1.53E-02
CO2	22000	lb/10 ³ gal	AP-42 Table 1.11-3 (10/96)	3.67E+01	1.61E+02
TOC	1	lb/10 ³ gal	AP-42 Table 1.11-3 (10/96)	1.67E-03	7.30E-03
Antimony	4.5E-03	lb/10 ³ gal	AP-42 Table 1.11-4 (10/96)	7.50E-06	3.29E-05
Arsenic	6.0E-02	lb/10 ³ gal	AP-42 Table 1.11-4 (10/96)	1.00E-04	4.38E-04
Beryllium	1.8E-03	lb/10 ³ gal	AP-42 Table 1.11-4 (10/96)	3.00E-06	1.31E-05
Cadmium	1.2E-02	lb/10 ³ gal	AP-42 Table 1.11-4 (10/96)	2.00E-05	8.76E-05
Chromium	1.8E-01	lb/10 ³ gal	AP-42 Table 1.11-4 (10/96)	3.00E-04	1.31E-03
Cobalt	5.2E-03	lb/10 ³ gal	AP-42 Table 1.11-4 (10/96)	8.67E-06	3.80E-05

Manganese	5.0E-02	lb/10 ³ gal	AP-42 Table 1.11-4 (10/96)	8.33E-05	3.65E-04
Nickel	1.6E-01	lb/10 ³ gal	AP-42 Table 1.11-4 (10/96)	2.67E-04	1.17E-03
Phenol	2.8E-05	lb/10 ³ gal	AP-42 Table 1.11-5 (10/96)	4.67E-08	2.04E-07
Naphthalene	9.2E-05	lb/10 ³ gal	AP-42 Table 1.11-5 (10/96)	1.53E-07	6.72E-07
Phenanthrene	1.0E-04	lb/10 ³ gal	AP-42 Table 1.11-5 (10/96)	1.67E-07	7.30E-07
Dibutylphthalate	3.4E-05	lb/10 ³ gal	AP-42 Table 1.11-5 (10/96)	5.67E-08	2.48E-07
Pyrene	8.3E-06	lb/10 ³ gal	AP-42 Table 1.11-5 (10/96)	1.38E-08	6.06E-08

^(a) Emission Factor is calculated = 66 x A (A= Weight % Ash in Fuel)

^(b) Emission Factor is calculated = 57 x A (A= Weight % Ash in Fuel)

^(c) Emission Factor is calculated = 50 x L (L=Weight % lead in Fuel)

^(d) Emission Factor is calculated = 107 x S (S= Weight % Sulfur in Fuel)

Example Calc:

NOx Emissions = (Emission Factor, lb/10³ gal) / (Fuel Heating Value, MMBtu/10³ gal) x (Fuel Combustion Rate MMBtu/hr)

NOx (lb/hr) = (16 lb/10³ gal) / (150 MMBtu/10³ gal) x (0.25 MMBtu/hr) = 2.67E-02 lb/hr

NOx (tons/yr) = (PM, lb/hr) x (8760 hr/yr) / (2000 lb/ton)

(0.0267 lb/hr) x (8760 hr/yr) / 2000 (lb/ton) = 1.17E-01 tons/yr

Appendix B - Facility Comments for Draft Permit

The following comments were received from the facility on March 1, 2018:

Facility Comment: In regards to draft permit condition 3.15 Fuel-Burning Equipment, “Is this applicable to PHL (Peterson Hill Landfill)? Used oil burner is categorically exempt”

DEQ Response: Language has been added to Draft Statement of Basis in order to clarify, page 10

“No specific monitoring is required for this facility-wide condition. As with all permit conditions, the permittee must certify compliance with this condition annually, which includes making a reasonable inquiry to determine if this requirement was met during the reporting period.

In addition, as long as the facility maintains the Used Oil Fired Heater (See Table 5.3) in accordance with IDAPA 58.01.01.220.02.h.i-v DEQ acknowledges the source as Category II exempt and requires no PTC. Furthermore, no monitoring is specifically required to show compliance with this facility wide condition for the Facility’s Used Oil Fired Heater if Category II exemption criteria are maintained”