Statement of Basis

Tier I Operating Permit No. T1-2015.0038
Project ID 61569

Kootenai County Farm Landfill
Coeur d'Alene, Idaho

Facility ID 055-00044

Final

October 25, 2016
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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
Btu	British thermal unit
CAM	Compliance Assurance Monitoring
CFR	Code of Federal Regulations
CI	compression ignition
CO	carbon monoxide
DEQ	Department of Environmental Quality
dscf	dry standard cubic feet
EPA	U.S. Environmental Protection Agency
HAP	hazardous air pollutants
hp	horsepower
ICE	internal combustion engines
IDAPA	a numbering designation for all administrative rules in Idaho promulgated in accordance with the Idaho Administrative Procedures Act
km	kilometers
lb/hr	pounds per hour
LFG	Landfill Gas
MACT	Maximum Achievable Control Technology
MMBtu	million British thermal units
MMscf	million standard cubic feet
MRRR	Monitoring, Recordkeeping and Reporting Requirements
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
PSD	Prevention of Significant Deterioration
PTC	permit to construct
PTE	potential to emit
RICE	reciprocating internal combustion engines
Rules	*Rules for the Control of Air Pollution in Idaho*
scf	standard cubic feet
SIP	State Implementation Plan
SO_2	sulfur dioxide
SO_x	sulfur oxides
T/yr	tons per consecutive 12 calendar month period
T1	Tier I operating permit
U.S.C.	United States Code
VOC	volatile organic compound

2. INTRODUCTION AND APPLICABILITY

Kootenai County Farm Landfill is a municipal waste landfill, and is located at 22089 South Highway 95, Coeur d' Alene. The facility is required to obtain a Tier I operating permit because 40 CFR 60 Subpart WWW (Standards of Performance for Municipal Solid Waste Landfills) is applicable to the facility. 40 CFR 60.752(b) specifies that owners of Municipal Solid Waste landfills having a design capacity of equal to or greater than 2.5 megagrams and 2.5 million cubic meters is subject to part 70 (i.e. Tier I or Title V) permitting requirements. The applicant has certified in the application that the facility meets these criteria and that Tier I operating permit is required. The design capacity of the landfill is stated to be 7.9 megagrams. Also, the facility is required to obtain a Tier I operating permit as specified by IDAPA 58.01.01.859.04, because the facility was an existing landfill with a modification after May 30, 1991. IDAPA 58.01.01.859.04 states "all owners or operators of landfills subject to Section 859 must comply with Federal Operating Permit Requirements (Title V) as specified in Section 300 through 399 of IDAPA 58.01.01 (Rules).

The format of this Statement of Basis follows that of the permit with the exception of the facility's information discussed first followed by the scope, the applicable requirements and permit shield, and finally the general provisions.

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 sufficient to assure compliance with each permit condition follows the permit condition.

Sections 4 through 6 – Landfill

The emissions unit-specific sections of the permit contain the applicable requirements that specially 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. As with the facility-wide conditions, monitoring, recordkeeping and reporting requirements sufficient to assure compliance with each applicable requirement immediately follows the applicable requirement.

Section 7 - 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 sources. These conditions have been reviewed by EPA and contain all terms required by IDAPA 58.01.01 et al as well as requirements from other air quality laws 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 the rule or permit, the rule or permit shall govern.

3. FACILITY INFORMATION

3.1 Facility Description

Kootenai County Farm Landfill operation presently consists of the original Landfill and the East Expansion Landfill Phases 1 and 2. The present landfill encompasses an area of approximately 60 acres

of a 440 acre parcel of land with a design capacity of 2.33 million tons. The East Expansion Cell is designed to expand to the east of the Landfill. The original landfill is temporarily closed and covered; the East Expansion Cell will be expanded back so that it will eventually be built on top of the original Landfill. The entire facility will have a total capacity of 8.72 million tons and is anticipated to be closed in 2040. The active landfill, including the original Landfill and East Expansion Landfill will encompass an area of approximately 80 acres.

Kootenai County Farm Landfill operation generates potentially odorous landfill gas (LFG). LFG is a byproduct produced from decomposition of organic material in the municipal solid waste landfill. LFG is typically a mixture of approximately 50% methane and 50% carbon dioxide, and a minor amount of non-methane organic compounds (NMOC). Within the NMOC are some hazardous air pollutants (HAPs). A trace amount of hydrogen sulfide gas is also found in the LFG. Landfills may continue to generate LFG for 10 to 20 years, or longer, after waste disposal has ceased.

3.2 Facility Permitting History

Tier I Operating Permit History - Previous 5-year permit term

The following information is the permitting history of this Tier I facility during the previous five-year permit term which was from January 14, 2011 to January 14, 2016. This information was derived from a review of the permit files available to DEQ. Permit status is noted as active and in effect (A) or superseded (S).

September 23, 2011	T1-2010.0028, Amended Tier I permit, Permit status (A, but will be superseded by this permit)
January 14, 2011	T1-2010.0028, Initial Tier I permit, Permit status or (S)

Underlying Permit History - Includes every underlying permit issued to this facility

The following information is the comprehensive permitting history of all underlying applicable permits issued to this Tier I facility. This information was derived from a review of the permit files available to DEQ. Permit status is noted as active and in effect (A) or superseded (S).

March 24, 2003	P- P-020100, Amended Permit for Flare #1, Permit status (A)
December 13, 1999	Permit No. 055-00044, Initial Permit for Flare #2, Permit status (A)
April 6, 1994	Permit No. 055-00044, Initial Permit for Flare #1, Permit status (S)

4. APPLICATION SCOPE AND APPLICATION CHRONOLOGY

4.1 Application Scope

This permit is the renewal of the facility's currently effective Tier I operating permit. There are no new substantive requirements.

4.2 Application Chronology

August 3, 2015	DEQ received an application.
September 30, 2015	DEQ determined that the application was complete.
August 10, 2016	DEQ made available the draft permit and statement of basis for peer and regional office review.
August 22, 2016	DEQ made available the draft permit and statement of basis for applicant review.
September 12 – October 12, 2016	DEQ provided a public comment period on the proposed action.

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 - Landfill

Table 5.1 lists the emissions units and control devices associated with municipal waste Landfill gas collection system that is required to be operated in accordance with 40 CFR 63 Subpart WWW.

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

Emissions Unit Description	Control Device (if applicable)
Landfill Gas Flare #1 Manufacturer: John Zink Capacity: 24.8 MMBtu/hr	Incineration of Landfill gases in an enclosed flare
Landfill Gas Flare #2 Manufacturer: Callidus Capacity: 32.5 MMBtu/hr	Incineration of Landfill gases in an enclosed flare

The present Landfill encompasses an area of approximately 60 acres of a 440 acre parcel of land with a design capacity of 2.33 million tons. The East Expansion Cell is designed to expand to the east of the Landfill. The original Landfill is temporarily closed and covered; the East Expansion Cell will be expanded back so that it will eventually be built on top of the original Landfill. The entire facility will have a total capacity of 8.72 million tons and is anticipated to be closed in 2040. The active Landfill, including the original Landfill and East Expansion Landfill will encompass an area of approximately 80 acres.

Kootenai County Landfill operation generates potentially odorous Landfill gas (LFG). LFG is a byproduct produced from decomposition of organic material in the municipal solid waste Landfill. LFG is typically a mixture of approximately 50% methane and 50% carbon dioxide, and a minor amount of non-methane organic compounds (NMOC). Within the NMOC are some hazardous air pollutants (HAPs). A trace amount of hydrogen sulfide gas is also found in the LFG. Collected LFG will be combusted in one of two flares located at the facility.

5.2 Process No. 2 - Engines

Table 5.2 lists the emissions units and control devices associated with miscellaneous non-road internal combustion engines.

Table 5.2 EMISSIONS UNITS, CONTROL DEVICE, AND DISCHARGE POINT INFORMATION

Emissions Unit Description	Control Device (if applicable)
Gasoline Generator, Diesel Manufacturer: Multiquip Model: CDA25 Rating: 20kw	None
Diesel Generators, Gasoline Manufacturer: Honda Model: Unknown Rating: 5 kw	None
Pumps (3) Gasoline Manufacturer: Wacker Rating: 16 hp each	None

5.3 Insignificant Emissions Units Based on Size or Production Rate

No emissions unit or activity subject to an applicable requirement may qualify as an insignificant emissions unit or activity. As required by IDAPA 58.01.01.317.01.b, insignificant emissions units (IEU's) based on size or production rate must be listed in the permit application. Table 5. lists the IEU's identified in the permit application that meet this criteria. Also summarized is the regulatory authority or justification for each IEU.

Table 5.3 INSIGNIFICANT EMISSION UNITS AND REGULATORY AUTHORITY/JUSTIFICATION

Emissions Unit / Activity	Regulatory Authority / Justification
Farley's Challenger VI pressure washer, fueled by stove oil (2.75 gal/hr * 138,000 Btu/gal)	IDAPA 58.01.01.317.01.b.i.(7); Combustion source, < 1,000,000 Btu/hr, using kerosene, No. 1, or No. 2 fuel.
Portable heaters, diesel-fired, (3 @ 150,000 Btu/hr, 1 @ 80,000 Btu/hr)	IDAPA 58.01.01.317.01.b.i.(7); Combustion source, < 1,000,000 Btu/hr, using kerosene, No. 1, or No. 2 fuel.
Shop heaters, diesel-fired (1 @ 500,000 btu/hr, 1 @ 170,000 btu/hr)	IDAPA 58.01.01.317.01.b.i.(7); Combustion source, < 1,000,000 Btu/hr, using kerosene, No. 1, or No. 2 fuel.
Leachate evaporator, LFG-fired, 4,800,000 Btu/hr	IDAPA 58.01.01.317.01.b.i.(30); emissions less than 10% of significant

5.4 Emissions Inventory

Table 5.4 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 A of this statement of basis.

Table 5.4 EMISSIONS INVENTORY – POTENTIAL TO EMIT (T/yr)

Source Description	PM_{10} T/yr	NO_x T/yr	SO_2 T/yr	CO T/yr	VOC T/yr	Total HAP T/yr
Flare No. 1	3.25	7.39	~7.0[a]	40.19	0.52	0.57
Flare No. 2	4.73	9.68		52.67	0.68	
Wacker Pumps (3) gas engines	0.05	0.77	0.04	0.49	0.46	< 0.5
Landfill Fugitive	NA				NA[b]	20.1[c]
Leachate Evaporator	0.07	1.05		0.17		
Total Emissions	8.1	18.9	<10	93.5	1.7	<22[d]

a) The applicant estimated that 2.74 tons per year of hydrogen sulfide would be captured and combusted. From stoichiometry this results in ~ 5.2 tons per year of sulfur dioxide. Also 1.08 tons per of dimethyl sulfide will be combusted, resulting in ~ 1.11 ton per year of sulfur dioxide. Trace amount of other sulfur compounds will also be combusted.
b) Fugitive emissions that remain after a gas collection system is in place which is designed to maximize to the greatest extent possible, the capture of air pollutants (as required by 40 CFR 60 Subpart WWW) are fugitive emissions that do not count towards major facility thresholds. John S. Seitz, Director, EPA Memorandum dated October 21, 1994.
c) Fugitive HAP emissions count towards major facility thresholds (40 CFR 63.2 Definitions – *Fugitive Emissions*)
d) Maximum individual HAP is toluene at 5.5 tons per year.

6. EMISSIONS LIMITS AND MRRR

This section contains the applicable requirements for this major facility. Where applicable, monitoring, recordkeeping and reporting requirements (MRRR) follow the applicable requirement and state how compliance with the applicable requirement is to be demonstrated.

This section is divided into several subsections. The first subsection lists the requirements that apply facility wide. The next subsection lists the emissions units- and emissions activities-specific applicable requirements. The final subsection contains the general provisions that apply to all major facilities subject to Idaho DEQ's Tier I operating permit requirements.

This section contains the following subsections:

- Facility-Wide Conditions;
- 40 CFR 60 Subpart WWW;
- 40 CFR 63 Subpart AAAA;
- Landfill Flares #1 & #2;
- Tier I Operating Permit General Provisions.

MRRR

Immediately following each applicable requirement (permit condition) is the periodic monitoring regime upon which compliance with the underlying applicable requirement is assured. A periodic monitoring regime consists of monitoring, recordkeeping and reporting requirements for each applicable requirement. If an applicable requirement does not include sufficient monitoring, recordkeeping and reporting 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 assurance of compliance with the permit. This is known as gap filling. In addition to the specific MRRR described under each permit condition, generally applicable facility-wide conditions and general provisions may also be required, such as monitoring, recordkeeping, performance testing, reporting, and certification requirements.

The discussion of each permit condition includes the legal and factual basis for the permit condition. If a permit condition was changed due to facility draft or public comments, a description of why and how the condition was changed 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.

Underlying Permit Conditions

Appendix D includes the permits to construct issued to the facility along with how each provision is addressed in this Tier I operating permit.

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 - 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.
- 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, SO_2 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 3.16)

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 3.17 - 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 3.18 - 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 3.19 - Accidental Release Prevention

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)]

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 - 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 3.21 through 3.22- NSPS/NESHAP General Provisions

This facility is subject to NSPS/NESHAP Subparts WWW/AAAA, and is therefore required to comply with applicable General Provisions.

[40 CFR 60, 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 3.23 - 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 3.24 through 3.27 - 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]

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 3.28 - 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 3.29 - 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 40 CFR 60 Subpart WWW – Permit Section 4

The sole purpose of this section is to incorporate the applicable requirements of New Source Performance Standards (NSPS40 CFR 60 Subpart WWW – Standards of Performance for Municipal Solid Waste Landfills. These requirements are included in the previous permit and are included in the renewed permit without substantive change except they have been renumbered.

MRRR

This subpart has sufficient monitoring to reasonably assure compliance with all applicable emissions standards and operating requirements. This Subpart was promulgated on March 12, 1996 which is after November 15, 1990, a date that would exempt the source from Compliance Assurance Monitoring Requirements (40 CFR 64) had the source otherwise been applicable to the compliance assurance monitoring requirements. This is relevant in that EPA asserts that NSPS standards promulgated after November 15, 1990 include sufficient monitoring requirements to assure the source complies with the applicable requirements. No additional monitoring requirements are needed beyond what the NSPS requires.

6.3 40 CFR 63 Subpart AAAA – Permit Section 5

The sole purpose of this section is to incorporate the applicable requirements of National Emission Standards for Hazardous Air Pollutants (NESHAP 40 CFR 63 Subpart AAAA – Municipal Solid Waste Landfills. These requirements are included in the previous permit and are included in the renewed permit without substantive change except they have been renumbered.

MRRR

This subpart has sufficient monitoring to reasonably assure compliance with all applicable emissions standards and operating requirements. This Subpart was promulgated on January 16, 2003 which is after November 15, 1990, a date that would exempt the source from Compliance Assurance Monitoring Requirements (40 CFR 64) had the source otherwise been applicable to the compliance assurance monitoring requirements. This is relevant in that EPA asserts that NESHAP standards promulgated after November 15, 1990 include sufficient monitoring requirements to assure the source complies with the applicable requirements. No additional monitoring requirements are needed beyond what the NESHAP requires.

6.4 Landfill Flares #1 & 2 – Permit Section 6

Permit Condition 6.1

A pilot flame shall be maintained at Flare No. 1 and No. 2 at all times when landfill gas is routed to the flares.

MRRR

Permit Condition 6.6

The permittee shall install, calibrate, maintain, and operate according to manufacturer specifications, a heat sensing device at the pilot light on Flare No. 1and No. 2 to detect the continuous presence of a flame.

Underlying Permit to Construct No. P-020100, issued March 24, 2003 contains this specific monitoring requirement for Flare No. 1. This same monitoring requirement was added for Flare No. 2 under the athority of IDAPA 58.01.01.322.06. The monitroing requirement for Flare No. 2 has been required to assure compliance with the requirement to maintain a pilot flame on Flare No. 2.

Permit Condition 6.7

For Flare No. 1 and Flare No. 2 the permittee shall record all periods when the pilot flame or flare was absent and when the control device was not operating. Records shall remain onsite for a period of five years and shall be made available to inspection personnel upon request.

Permit Condition 6.2

The combustion temperature of Flare No. 1 shall be maintained at a minimum of 1500 ^{O}F. Combustion temperature shall be maintained at or above the temperature recorded during the most recent source test that demonstrated compliance with NSPS emission limits.

Permit Condition 6.3

Combustion temperature of Flare No. 2 shall be maintained at greater than or equal to an hourly average of 1,500 degrees Fahrenheit.

MRRR

Permit Condition 4.31

In accordance with 40 CFR 60.756(b)(1) the permittee shall calibrate, maintain, and operate according to the manufacturer's specifications, a temperature monitoring device equipped with a continuous recorder and having a minimum accuracy of ±l percent of the temperature being measured expressed in degrees Celsius or ±0.5 degrees Celsius, whichever is greater.

This monitoring requirement statisfies the termperature monitoring requirement included in underlying permit No. P-055-00044, issued December 13, 1999 and underlying permit No. P-020100, issued March 24, 2003. Underlying permit No. P-020100 specifies that the temperature monitoring device shall be accurate within ± 46.7°F of the temperature being monitoring monitored whereas the 40 CFR 60.756(b)(1) accuracy requiremente is ± 1% of the termperature being monitored which is more stringent up to a temperature of 4,670 °F, a temperature well above the operating temperature of landfill gas flares.

Permit Condition 6.8

The permittee shall submit a quarterly report to DEQ of all instances when the average hourly temperature of Flare No. 2 was less than 1,500 degrees Fahrenheit.

Permit Condition 6.4

Landfill gas flowrate to Flare No. 1 shall not exceed the 825 acfm design capacity of the enclosed flare.

MRRR

Permit Condition 4.31

In accordance with 40 CFR 60.756(b)(2)(i) the permittee shall install, calibrate, and maintain a gas flow rate measuring device that shall record the flow to the control device at least every 15 minutes.

Permit Condition 6.5

The permittee shall maintain onsite an Operations and Maintenance (O&M) Manual for gas Flare No. 2 which describes the procedures that will be followed to at all times maintain the flare in good working order and to assure that is operated as efficiently as practicable.

MRRR

There are no specific monitoring requirements for this permit condition. Permit Condition 3.23 specifies that the permittee shall maintain records to ensure compliance.

6.5 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.

[IDAPA 58.01.01.125, 3/23/98]

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 Kootenai which is designated as attainment or unclassifiable for PM_{10}, $PM_{2.5}$, CO, NO_2, SO_x, and Ozone. Reference 40 CFR 81.313.

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

40 CFR 60.752(b) specifies that owners of Municipal Solid Waste landfills having a design capacity of equal to or greater than 2.5 megagrams and 2.5 million cubic meters is subject to part 70 (i.e. Tier I or Title V) permitting requirements. The applicant has certified in the application that the facility meets these criteria and that Tier I operating permit is required. The design capacity of the landfill is stated to be 7.9 megagrams. Also, the facility is required to obtain a Tier I operating permit as specified by IDAPA 58.01.01.859.04, because the facility was an existing landfill with a modification after May 30, 1991. IDAPA 58.01.01.859.04 states "all owners or operators of landfills subject to Section 859 must comply with Federal Operating Permit Requirements (Title V) as specified in Section 300 through 399 of IDAPA 58.01.01 (Rules). The sources potentail to emit is below Tier I major source thresholds for all criteria air pollutants and below the major facility thresholds for hazardous air pollutants.

7.3 NSPS Applicability (40 CFR 60)

The facility is a 40 CFR 60 Subpart WWW affected source. These requirements were included in the previous permit and are carried over to this renewed permit without any substantive change except that the permit conditions have been renumbered. A detailed breakdown of the regulations applicability is included in Appendix B.

40 CFR 60 Subpart IIII – Standards of Performance for Stationary Compression Ignition Internal Combustion Engines and 40 CFR 60 Subpart JJJJ – Standards of Performance for Stationary Spark Ignition Internal Combustion Engines are potentially applicable Subparts. However, neither of these regulations for stationary engines are applicable because each of the regulations defines a "stationary" engine to exclude non-road engines. On August 8, 2016 the applicant certified that all engines at the facility qualify as mobile or non-road engines (i.e. all engines are removed from the site at least once a year).

EPA provided notice on July 17, 2016 that they were going to publish 40 CFR 60 Subpart XXX. This new subpart will be applicable to landfill sources which commence construction or modification after July 17, 2014. Kootenai County Farm Landfill has not commenced construction or modification after this date and will not be subject to this subpart after it is published unless it modifies in the future.

7.4 NESHAP Applicability (40 CFR 61)

The facility does not have any emissions units that are subject to 40 CFR 61.

7.5 MACT Applicability (40 CFR 63)

The facility is a 40 CFR 63 Subpart AAAA affected source. These requirements were included in the previous permit and are carried over to this renewed permit without any substantive change except that the permit conditions have been renumbered. A detailed breakdown of the regulations applicability is included in Appendix C.

40 CFR 63 Subpart ZZZZ – National Emissions Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines is potentially applicable Subpart. However, this regulation for stationary engines is not applicable because the regulation defines a "stationary" engine, for which the regulation is applicable, to exclude non-road engines. On August 8, 2016 the applicant certified that all

engines at the facility qualify as mobile or non-road engines (i.e. all engines are removed from the site at least once a year).

7.6 CAM Applicability (40 CFR 64)

The flares at the Kootenai County Farm Landfill are not subject "Compliance Assurance Monitoring," (CAM) Rule at 40 CFR Part 64. 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 application.

7.7 Acid Rain Permit (40 CFR 72-75)

The source is not subject to acid rain requirements.

8. PUBLIC COMMENT

As required by IDAPA 58.01.01.364, a comment period was made available from September 12 – October 12, 2016. During this time, comments were submitted in response to DEQ's proposed action. A response to public comments document has been crafted by DEQ based on comments submitted during the public comment period. That document is part of the final permit package for this permitting action.

In addition to the public comment period, DEQ also provide an opportunity for a public hearing for persons interested to appear and submit written or oral comments. A public hearing was not requested

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 October 18, 2016 via e-mail. On October 18, 2016 EPA Region 10 responded to DEQ via e-mail indicating that DEQ may issue the final permit.

Appendix A - Emissions Inventory

Potential to emit, 10 kW generators:

Generators, 10 kW (3), diesel (Assume engine 18.5 hp, based on similar generators)

	Factor, lb/hp-hr	PTE, ton/yr	§ 006 level, ton/yr
NO_X	0.031	2.51	100
CO	0.00668	0.54	40
SO_X	0.00205	0.17	40
PM_{10}	0.0022	0.18	15
TOC	0.0025141	0.20	40
PTE for all pollutants is < 58.01.01.317.b.i.(30) criteria			

Potential to emit, Wacker pumps

Wacker pumps are powered by 16-hp gasoline engines

	Factor, lb/hp-hr	PTE, ton/yr	§ 006 level, ton/yr
NO_X	0.011	0.78	100
CO	0.00696	0.49	40
SO_X	0.000591	0.04	40
PM_{10}	0.000721	0.05	15
TOC	0.006591	0.46	40
PTE for all pollutants is < 58.01.01.317.b.i.(30) criteria			

Note: Factors for both engine types taken from AP-42, Table 3.3-1
Engine operation is assumed to be 8,760 hours per year

Potential to emit (uncontrolled), Leachate evaporator

Leachate evaporator, rated heat input: 4.8 MMBtu/hr
Methane heat content: 0.841 (U.S. Energy Information Administration)
Fuel combustion rate = 4.8 MMBtu/hr / 0.841 MMBtu/10^3 ft^3 = 5.7075 10^3 ft^3/hr

	Factor, lb/10^6 gal	PTE, ton/yr	§ 006 level, ton/yr
NO_X	42	1.05	100
CO	7	0.17	40
PM_{10}	3	0.07	15
Dioxin/Furan	3.20×10^{-7}	3.20×10^{-9}	1
PTE for all pollutants is < 58.01.01.317.b.i.(30) criteria			

Note: Factors taken from AP-42, Table 2.4-4, revised, draft
Leachate evaporator operation assumed to be 8,760 hours per year
All filterable PM assumed to be PM_{10}
Exhaust from leachate evaporator is routed to flare. CO, and organic compounds will be combusted.

Potential to emit, Landfill

Emissions from the landfill are the sum of landfill gases (LFG) that escape from the collection system (fugitive emissions), and emissions of combusted LFG and other by-products, such as oxides of nitrogen, from the flare.

Landfill gas generated by the landfill (uncontrolled).

Landfill gas model (LandGEM) calculated emissions for 2015 (year of permit renewal), and 2035 (peak year of emissions following planned shutdown in 2040)

	2015		2035 (peak)	
Gas / Pollutant	Captured, tpy	**Fugitive, tpy**	Captured, tpy	**Fugitive, tpy**
Total landfill gas	26,221	8,740	66,985	22,328
Methane	7,004	2,335	17,892	5,964
Carbon dioxide	19,217	6,406	49,092	16,364
NMOC	301	100	769	256
1,1,1-Trichloroethane (methyl chloroform) - HAP	5.59E-02	1.86E-02	1.43E-01	4.76E-02
1,1,2,2-Tetrachloroethane - HAP/VOC	1.61E-01	5.37E-02	4.12E-01	1.37E-01
1,1-Dichloroethane (ethylidene dichloride) - HAP/VOC	2.07E-01	6.91E-02	5.30E-01	1.77E-01
1,1-Dichloroethene (vinylidene chloride) - HAP/VOC	1.69E-02	5.64E-03	4.33E-02	1.44E-02
1,2-Dichloroethane (ethylene dichloride) - HAP/VOC	3.54E-02	1.18E-02	9.05E-02	3.02E-02
1,2-Dichloropropane (propylene dichloride) - HAP/VOC	1.78E-02	5.92E-03	4.54E-02	1.51E-02
2-Propanol (isopropyl alcohol) - VOC	2.62E+00	8.75E-01	6.71E+00	2.24E+00
Acetone	3.55E-01	1.18E-01	9.07E-01	3.02E-01
Acrylonitrile - HAP/VOC	2.92E-01	9.73E-02	7.46E-01	2.49E-01
Benzene - No or Unknown Co-disposal - HAP/VOC	1.30E-01	4.32E-02	3.31E-01	1.10E-01
Benzene - Co-disposal - HAP/VOC	7.50E-01	2.50E-01	1.92E+00	6.39E-01
Bromodichloromethane - VOC	4.44E-01	1.48E-01	1.13E+00	3.78E-01
Butane - VOC	2.54E-01	8.46E-02	6.48E-01	2.16E-01
Carbon disulfide - HAP/VOC	3.86E-02	1.29E-02	9.85E-02	3.28E-02
Carbon monoxide	3.42E+00	1.14E+00	8.75E+00	2.92E+00
Carbon tetrachloride - HAP/VOC	5.37E-04	1.79E-04	1.37E-03	4.58E-04
Carbonyl sulfide - HAP/VOC	2.57E-02	8.57E-03	6.57E-02	2.19E-02
Chlorobenzene - HAP/VOC	2.46E-02	8.19E-03	6.28E-02	2.09E-02
Chlorodifluoromethane	9.82E-02	3.27E-02	2.51E-01	8.36E-02
Chloroethane (ethyl chloride) - HAP/VOC	7.32E-02	2.44E-02	1.87E-01	6.24E-02
Chloroform - HAP/VOC	3.13E-03	1.04E-03	7.99E-03	2.66E-03
Chloromethane - VOC	5.29E-02	1.76E-02	1.35E-01	4.51E-02
Dichlorobenzene - (HAP for para isomer/VOC)	2.70E-02	8.99E-03	6.89E-02	2.30E-02
Dichlorodifluoromethane	1.69E+00	5.63E-01	4.32E+00	1.44E+00
Dichlorofluoromethane - VOC	2.34E-01	7.79E-02	5.97E-01	1.99E-01

Gas / Pollutant	2015		2035 (peak)	
	Captured, tpy	Fugitive, tpy	Captured, tpy	Fugitive, tpy
Dichloromethane (methylene chloride) - HAP	1.04E+00	3.46E-01	2.65E+00	8.84E-01
Dimethyl sulfide (methyl sulfide) - VOC	4.23E-01	1.41E-01	1.08E+00	3.60E-01
Ethane	2.34E+01	7.79E+00	5.97E+01	1.99E+01
Ethanol - VOC	1.09E+00	3.62E-01	2.78E+00	9.25E-01
Ethyl mercaptan (ethanethiol) - VOC	1.25E-01	4.16E-02	3.19E-01	1.06E-01
Ethylbenzene - HAP/VOC	4.26E-01	1.42E-01	1.09E+00	3.63E-01
Ethylene dibromide - HAP/VOC	1.64E-04	5.47E-05	4.19E-04	1.40E-04
Fluorotrichloromethane - VOC	9.12E-02	3.04E-02	2.33E-01	7.76E-02
Hexane - HAP/VOC	4.97E-01	1.66E-01	1.27E+00	4.23E-01
Hydrogen sulfide	1.07E+00	3.57E-01	2.74E+00	9.12E-01
Mercury (total) - HAP	5.08E-05	1.69E-05	1.30E-04	4.33E-05
Methyl ethyl ketone - HAP/VOC	4.47E-01	1.49E-01	1.14E+00	3.81E-01
Methyl isobutyl ketone - HAP/VOC	1.66E-01	5.54E-02	4.25E-01	1.42E-01
Methyl mercaptan - VOC	1.05E-01	3.50E-02	2.68E-01	8.94E-02
Pentane - VOC	2.08E-01	6.93E-02	5.31E-01	1.77E-01
Perchloroethylene (tetrachloroethylene) - HAP	5.36E-01	1.79E-01	1.37E+00	4.56E-01
Propane - VOC	4.24E-01	1.41E-01	1.08E+00	3.61E-01
t-1,2-Dichloroethene - VOC	2.37E-01	7.90E-02	6.06E-01	2.02E-01
Toluene - No or Unknown Co-disposal - HAP/VOC	3.14E+00	1.05E+00	8.02E+00	2.67E+00
Toluene - Co-disposal - HAP/VOC	1.37E+01	4.56E+00	3.49E+01	1.16E+01
Trichloroethylene (trichloroethene) - HAP/VOC	3.21E-01	1.07E-01	8.21E-01	2.74E-01
Vinyl chloride - HAP/VOC	3.98E-01	1.33E-01	1.02E+00	3.39E-01
Xylenes - HAP/VOC	1.11E+00	3.71E-01	2.84E+00	9.47E-01
Total HAP	23.6	**7.87**	60.3	**20.1**
Total VOC	28.3	**9.42**	72.2	**24.1**

Note: Factors taken from LandGEM 2 model
"Captured" is LFG that has been collected and combusted by flares.
"Fugitive" is LFG that has not been collected by the LFG system.

Potential to emit VOC, Flares

Bill Rogers of Idaho DEQ stated that the permitted volatile organic compound (VOC) emission limit should be used as the end result of the LFG that is collected and burned by the flare. The VOC emission limit is 20 ppmdv, corrected to 3% O_2, (PTC No. P-020100, Section 2.1 (3/24/03)).

Equation 1 Total flare Flowrate

$$Q_{actual} = Q_{Flare\,1} + Q_{Flare\,2} = 824\,acfm + 12{,}000\,acfm = 12{,}824\,acfm$$

Equation 2 Stack flow correction for temperature and pressure

$$Q_d = 12{,}824 \times \frac{(68+460)}{(1{,}500+460)} \times \frac{27.26}{29.92} = 3{,}147\,dscfm$$

Equation 3 Calculation of emission rate

$$E = 20\,ppm \times 10^{-6} \times 3{,}147\frac{ft^3}{min} \times 60\frac{min}{hr} \times \frac{86.19\,\frac{lb}{lb-mole}}{385.3\,\frac{ft^3}{lb-mole}} = 0.84\frac{lb}{hr} \times \frac{8{,}760\frac{hr}{yr}}{2{,}000\frac{lb}{ton}}$$

$$= 3.70\frac{ton}{yr}$$

The potential to emit VOC of 3.70 tpy was used in Table 2-2.

Item	Exempt?	Notes
Caterpillar 143H grader, diesel	IDAPA 58.01.01.317.01.a.i.(10)	Internal combustion engines for propelling or powering a vehicle.
Caterpillar 330C excavator (track hoe), diesel	IDAPA 58.01.01.317.01.a.i.(10)	Internal combustion engines for propelling or powering a vehicle.
Caterpillar 826G compactor (2), diesel	IDAPA 58.01.01.317.01.a.i.(10)	Internal combustion engines for propelling or powering a vehicle.
Caterpillar 963C tracked front loader, diesel	IDAPA 58.01.01.317.01.a.i.(10)	Internal combustion engines for propelling or powering a vehicle.
Caterpillar D5M roller & scraper, diesel	IDAPA 58.01.01.317.01.a.i.(10)	Internal combustion engines for propelling or powering a vehicle.
Caterpillar D8R dozer (2), diesel	IDAPA 58.01.01.317.01.a.i.(10)	Internal combustion engines for propelling or powering a vehicle.
Clark fork lift	IDAPA 58.01.01.317.01.a.i.(10)	Internal combustion engines for propelling or powering a vehicle.
Cover Machine (hydro seeder) w/small diesel engine, towed by 644E	IDAPA 58.01.01.317.01.a.i.(10)	Internal combustion engines for propelling or powering a vehicle.
Dump trucks, doubles, (1 Stirling, 1 Ford), diesel	IDAPA 58.01.01.317.01.a.i.(10)	Internal combustion engines for propelling or powering a vehicle.
Fuel truck, Ford L9000, diesel	IDAPA 58.01.01.317.01.a.i.(10)	Internal combustion engines for propelling or powering a vehicle.
Honda Foreman ES quad, gasoline	IDAPA 58.01.01.317.01.a.i.(10)	Internal combustion engines for propelling or powering a vehicle.
John Deer 644E loader, diesel	IDAPA 58.01.01.317.01.a.i.(10)	Internal combustion engines for propelling or powering a vehicle.
John Deer Gator 6X4 small utility vehicle, gasoline	IDAPA 58.01.01.317.01.a.i.(10)	Internal combustion engines for propelling or powering a vehicle.
Lull 824 extendable fork lift, diesel	IDAPA 58.01.01.317.01.a.i.(10)	Internal combustion engines for propelling or powering a vehicle.
New Holland 675E small back hoe, diesel	IDAPA 58.01.01.317.01.a.i.(10)	Internal combustion engines for propelling or powering a vehicle.
Pickup trucks (5), gasoline engine, used on-site exclusively	IDAPA 58.01.01.317.01.a.i.(10)	Internal combustion engines for propelling or powering a vehicle.
Tree planter, towed behind truck, diesel-powered hydraulic system	IDAPA 58.01.01.317.01.a.i.(10)	Internal combustion engines for propelling or powering a vehicle.
Water truck, Freightliner, diesel	IDAPA 58.01.01.317.01.a.i.(10)	Internal combustion engines for propelling or powering a vehicle.
Honda generators, EU 2000i, (4), gasoline	IDAPA 58.01.01.317.01.a.i.(19)	Portable electrical generators that can be moved by hand.
Plant maintenance and upkeep	IDAPA 58.01.01.317.01.a.i.(28)	Plant maintenance and upkeep
General vehicle maintenance	IDAPA 58.01.01.317.01.a.i.(40)	General vehicle maintenance
Leachate pond and collection system (process waste water and ponds)	IDAPA 58.01.01.317.01.a.i.(109)	Process waste water and ponds.
Farley's Challenger VI pressure washer, fueled by stove oil (2.75 gal/hr * 138,000 Btu/gal)	IDAPA 58.01.01.317.01.b.i.(7)	Combustion source, < 1,000,000 Btu/hr, using kerosene, No. 1, or No. 2 fuel.
Portable heaters, diesel-fired, (3 @ 150,000 Btu/hr, 1 @ 80,000 Btu/hr)	IDAPA 58.01.01.317.01.b.i.(7)	Combustion source, < 1,000,000 Btu/hr, using kerosene, No. 1, or No. 2 fuel.
Shop heaters, diesel-fired	IDAPA 58.01.01.317.01.b.i.(7)	Combustion source, < 1,000,000 Btu/hr, using kerosene, No. 1, or No. 2 fuel.
Generators, 10 kW (3), diesel, approx. 18.5 hp each	IDAPA 58.01.01.317.01.b.i.(30)	Emission unit with PTE < values in § 006 and actual emissions < 10% values in § 006.
Wacker pumps (3), each powered by 16-hp gasoline engine	IDAPA 58.01.01.317.01.b.i.(30)	Emission unit with PTE < values in § 006 and actual emissions < 10% values in § 006.
Leachate evaporator, diesel-fired, 4,800,000 Btu/hr	IDAPA 58.01.01.317.01.b.i.(30)	Emission unit with PTE < values in § 006 and actual emissions < 10% values in § 006.
Landfill (controlled by landfill gas collection system and flares)		
Control device: Flare No. 1 - John Zink s/n A05292, 825 acfm		
Control device: Flare No. 2 - Callidus, 12,000 acfm		

Generators, 10 kW (3), diesel

Assume, based on similar engines on web, 18.5 hp.

	lb/hp-hr	PTE, ton/yr	§ 006 level, ton/yr
NOX	0.031	2.51	100
CO	0.00668	0.54	40
SOX	0.00205	0.17	40
PM10	0.0022	0.18	15
TOC	0.0025141	0.20	40

Wacker pumps (3), each powered by 16-hp gasoline engine

	lb/hp-hr	PTE, ton/yr	§ 006 level, ton/yr
NOX	0.011	0.77	100
CO	0.00696	0.49	40
SOX	0.000591	0.04	40
PM10	0.000721	0.05	15
TOC	0.006591	0.46	40

Note: Factors for both engine types taken from AP-42, Table 3.3-1

Heat content values from US Energy Information Administration
http://www.eia.doe.gov/cneaf/solar.renewables/page/trends/table10.html

LFG heat content:	0.490	MMBtu/1,000 ft3
CH4 heat content:	0.841	MMBtu/1,000 ft3

Leachate evaporator, landfill gas-fired, 4.8 MMBtu/hr

Fuel rate, 1,000 ft3/hr	5.70749
Fuel rate, 1,000,000 ft3/hr	0.00571

	lb/1,000,000 ft3	PTE, ton/yr	§ 006 level, ton/yr
NOX	42	1.05	100
CO	7	0.17	40
PM10	3	0.07	15
Dioxin/Furan	3.20E-07	8.00E-09	40

Note: emission factors taken from AP-42, Table 2.4-4 (revised, draft)
All filterable PM assumed to be PM10

Flare emissions

John Zink ZTOF at 24.8 MMBtu/hr and Callidus at 32.5 MMBtu/hr
Emissions are due to combustion of propane and landfill gas, total of 57.3 MMBtu/hr

VOC Emissions due to landfill gas

VOC generated, 2035 (peak)	96.289	ton/yr
VOC captured	60.336	ton/yr
VOC fugitive	20.112	ton/yr
VOC combusted flare 1	0.522	ton/yr
VOC combusted flare 2	0.684	ton/yr

	lb/1,000,000 ft3	PTE, ton/yr	§ 006 level, ton/yr
NOX	39	1.18	
CO	46	1.39	
PM10	15	0.45	
Dioxin/Furan	4.20E-07	1.27E-08	

Note: emission factors taken from AP-42, Table 2.4-4 (revised, draft)

Emissions due to propane,		57.3 MMBtu/hr		
	lb/MMBtu	PTE, ton/yr	Flare 1 PTE, ton/yr	Flare 2 PTE, ton/yr
NOX	0.068	17.07	7.39	9.68
CO	0.370	92.86	40.19	52.67
Total HC	0.140	35.14	15.21	19.93

Note: emission factors from AP-42, Table 13.5-1.
All filterable PM assumed to be PM10

Total flare emissions

	ton/yr
NOX	18.24
CO	94.25
Total HC	35.14
PM10	0.45
Dioxin/Furan	1.27E-08

NMOC destruction efficiency

generated	1.000	ton
collected	0.750	
combusted	0.735	
uncontrolled	0.265	

Emissions in 2035 from LandGEM2 model

Assumed landfill gas capture rate 75%

Gas / Pollutant	Mg/yr	m3/yr	Emission Rate ft3/min	ft3/yr	ton/yr	Captured, tpy	Fugitive, tpy
Total landfill gas	81,194	65,016,028	4,368	2,296,041,035	89,313	66,985	22,328
Methane	21,688	32,508,014	2,184	1,148,020,518	23,856	17,892	5,964
Carbon dioxide	59,506	32,508,014	2,184	1,148,020,518	65,456	49,092	16,364
NMOC	932	260,064	17	9,184,164	1,025	769	256
1,1,1-Trichloroethane (methyl chloroform) - HAP	1.73E-01	3.12E+01	2.10E-03	1.10E+03	1.90E-01	1.43E-01	4.76E-02
1,1,2,2-Tetrachloroethane - HAP/VOC	4.99E-01	7.15E+01	4.81E-03	2.53E+03	5.49E-01	4.12E-01	1.37E-01
1,1-Dichloroethane (ethylidene dichloride) - HAP/VOC	6.42E-01	1.56E+02	1.05E-02	5.51E+03	7.07E-01	5.30E-01	1.77E-01
1,1-Dichloroethene (vinylidene chloride) - HAP/VOC	5.24E-02	1.30E+01	8.74E-04	4.59E+02	5.77E-02	4.33E-02	1.44E-02
1,2-Dichloroethane (ethylene dichloride) - HAP/VOC	1.10E-01	2.67E+01	1.79E-03	9.41E+02	1.21E-01	9.05E-02	3.02E-02
1,2-Dichloropropane (propylene dichloride) - HAP/VOC	5.50E-02	1.17E+01	7.86E-04	4.13E+02	6.05E-02	4.54E-02	1.51E-02
2-Propanol (isopropyl alcohol) - VOC	8.13E+00	3.25E+03	2.18E-01	1.15E+05	8.94E+00	6.71E+00	2.24E+00
Acetone	1.10E+00	4.55E+02	3.06E-02	1.61E+04	1.21E+00	9.07E-01	3.02E-01
Acrylonitrile - HAP/VOC	9.04E-01	4.10E+02	2.75E-02	1.45E+04	9.94E-01	7.46E-01	2.49E-01
Benzene - No or Unknown Co-disposal - HAP/VOC	4.01E-01	1.24E+02	8.30E-03	4.36E+03	4.41E-01	3.31E-01	1.10E-01
Benzene - Co-disposal - HAP/VOC	2.32E+00	7.15E+02	4.81E-02	2.53E+04	2.56E+00	1.92E+00	6.39E-01
Bromodichloromethane - VOC	1.37E+00	2.02E+02	1.35E-02	7.12E+03	1.51E+00	1.13E+00	3.78E-01
Butane - VOC	7.86E-01	3.25E+02	2.18E-02	1.15E+04	8.64E-01	6.48E-01	2.16E-01
Carbon disulfide - HAP/VOC	1.19E-01	3.77E+01	2.53E-03	1.33E+03	1.31E-01	9.85E-02	3.28E-02
Carbon monoxide	1.06E+01	9.10E+03	6.12E-01	3.21E+05	1.17E+01	8.75E+00	2.92E+00
Carbon tetrachloride - HAP/VOC	1.66E-03	2.60E-01	1.75E-05	9.18E+00	1.83E-03	1.37E-03	4.58E-04
Carbonyl sulfide - HAP/VOC	7.96E-02	3.19E+01	2.14E-03	1.13E+03	8.76E-02	6.57E-02	2.19E-02
Chlorobenzene - HAP/VOC	7.61E-02	1.63E+01	1.09E-03	5.74E+02	8.37E-02	6.28E-02	2.09E-02
Chlorodifluoromethane	3.04E-01	8.45E+01	5.68E-03	2.98E+03	3.34E-01	2.51E-01	8.36E-02
Chloroethane (ethyl chloride) - HAP/VOC	2.27E-01	8.45E+01	5.68E-03	2.98E+03	2.49E-01	1.87E-01	6.24E-02
Chloroform - HAP/VOC	9.69E-03	1.95E+00	1.31E-04	6.89E+01	1.07E-02	7.99E-03	2.66E-03
Chloromethane - VOC	1.64E-01	7.80E+01	5.24E-03	2.76E+03	1.80E-01	1.35E-01	4.51E-02
Dichlorobenzene - (HAP for para isomer/VOC)	8.35E-02	1.37E+01	9.17E-04	4.82E+02	9.18E-02	6.89E-02	2.30E-02
Dichlorodifluoromethane	5.23E+00	1.04E+03	6.99E-02	3.67E+04	5.75E+00	4.32E+00	1.44E+00
Dichlorofluoromethane - VOC	7.24E-01	1.69E+02	1.14E-02	5.97E+03	7.96E-01	5.97E-01	1.99E-01
Dichloromethane (methylene chloride) - HAP	3.22E+00	9.10E+02	6.12E-02	3.21E+04	3.54E+00	2.65E+00	8.84E-01
Dimethyl sulfide (methyl sulfide) - VOC	1.31E+00	5.07E+02	3.41E-02	1.79E+04	1.44E+00	1.08E+00	3.60E-01
Ethane	7.24E+01	5.79E+04	3.89E+00	2.04E+06	7.96E+01	5.97E+01	1.99E+01
Ethanol - VOC	3.36E+00	1.76E+03	1.18E-01	6.20E+04	3.70E+00	2.78E+00	9.25E-01
Ethyl mercaptan (ethanethiol) - VOC	3.86E-01	1.50E+02	1.00E-02	5.28E+03	4.25E-01	3.19E-01	1.06E-01
Ethylbenzene - HAP/VOC	1.32E+00	2.99E+02	2.01E-02	1.06E+04	1.45E+00	1.09E+00	3.63E-01
Ethylene dibromide - HAP/VOC	5.08E-04	6.50E-02	4.37E-06	2.30E+00	5.59E-04	4.19E-04	1.40E-04
Fluorotrichloromethane - VOC	2.82E-01	4.94E+01	3.32E-03	1.74E+03	3.11E-01	2.33E-01	7.76E-02
Hexane - HAP/VOC	1.54E+00	4.29E+02	2.88E-02	1.52E+04	1.69E+00	1.27E+00	4.23E-01
Hydrogen sulfide	3.32E+00	2.34E+03	1.57E-01	8.27E+04	3.65E+00	2.74E+00	9.12E-01
Mercury (total) - HAP	1.57E-04	1.89E-02	1.27E-06	6.66E-01	1.73E-04	1.30E-04	4.33E-05
Methyl ethyl ketone - HAP/VOC	1.38E+00	4.62E+02	3.10E-02	1.63E+04	1.52E+00	1.14E+00	3.81E-01
Methyl isobutyl ketone - HAP/VOC	5.15E-01	1.24E+02	8.30E-03	4.36E+03	5.66E-01	4.25E-01	1.42E-01
Methyl mercaptan - VOC	3.25E-01	1.63E+02	1.09E-02	5.74E+03	3.58E-01	2.68E-01	8.94E-02
Pentane - VOC	6.44E-01	2.15E+02	1.44E-02	7.58E+03	7.08E-01	5.31E-01	1.77E-01
Perchloroethylene (tetrachloroethylene) - HAP	1.66E+00	2.41E+02	1.62E-02	8.50E+03	1.83E+00	1.37E+00	4.56E-01
Propane - VOC	1.31E+00	7.15E+02	4.81E-02	2.53E+04	1.44E+00	1.08E+00	3.61E-01
t-1,2-Dichloroethene - VOC	7.34E-01	1.82E+02	1.22E-02	6.43E+03	8.07E-01	6.06E-01	2.02E-01
Toluene - No or Unknown Co-disposal - HAP/VOC	9.72E+00	2.54E+03	1.70E-01	8.95E+04	1.07E+01	8.02E+00	2.67E+00
Toluene - Co-disposal - HAP/VOC	4.24E+01	1.11E+04	7.43E-01	3.90E+05	4.66E+01	3.49E+01	1.16E+01
Trichloroethylene (trichloroethene) - HAP/VOC	9.95E-01	1.82E+02	1.22E-02	6.43E+03	1.09E+00	8.21E-01	2.74E-01
Vinyl chloride - HAP/VOC	1.23E+00	4.75E+02	3.19E-02	1.68E+04	1.36E+00	1.02E+00	3.39E-01
Xylenes - HAP/VOC	3.44E+00	7.80E+02	5.24E-02	2.76E+04	3.79E+00	2.84E+00	9.47E-01
Total HAP	7.31E+01	1.92E+04	1.29E+00	6.79E+05	8.04E+01	6.03E+01	2.01E+01
Total VOC	8.75E+01	2.58E+04	1.73E+00	9.11E+05	9.63E+01	7.22E+01	2.41E+01

Flare emissions

lb/hr = ppm*1.0E-06*Qd*60*MW/385.3

Combined flowrate: 12825 acfm	12,825
Stack temperature, degrees F	1,500
PTC No. P-020100, Section 2.1 (3/24/03) emission limit	
max concentration, ppmdv	20
Oxygen correction factor:	3
Pressure altitude at 2,550 feet MSL, in Hg	27.26
Flowrate, dscfm	3,147.7
Hexane, lb/hr	0.84
Hexane, ton/yr	3.70

Appendix B – 40 CFR 60 Subpart WWW

Regulatory Analysis

Text highlighted in yellow indicates sections applicable to the source.

Text in italics shows sample explanations of why the source is or is not subject to the regulation.

When a regulation makes reference to another regulation, be sure to copy and paste the full text of the referenced regulation into your regulatory analysis.

e-CFR Data is current as of July 28, 2016

Title 40: Protection of Environment

PART 60—STANDARDS OF PERFORMANCE FOR NEW STATIONARY SOURCES

Subpart WWW—Standards of Performance for Municipal Solid Waste Landfills

Source: 61 FR 9919, Mar. 12, 1996, unless otherwise noted.

§ 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.

Regulatory Analysis: The Kootenai County Farm Landfill is an applicable source because it is a landfill, for which construction commenced in 1993.

[61 FR 9919, Mar. 12, 1996, as amended at 63 FR 32750, June 16, 1998]

§ 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.

Active collection system means a gas collection system that uses gas mover equipment.

Active landfill means a landfill in which solid waste is being placed or a landfill that is planned to accept waste in the future.

Closed landfill means a landfill in which solid waste is no longer being placed, and in which no additional solid wastes will be placed without first filing a notification of modification as prescribed under §60.7(a)(4). Once a notification of modification has been filed, and additional solid waste is placed in the landfill, the landfill is no longer closed.

Closure means that point in time when a landfill becomes a closed landfill.

Commercial solid waste means all types of solid waste generated by stores, offices, restaurants, warehouses, and other nonmanufacturing activities, excluding residential and industrial wastes.

Controlled landfill means any landfill at which collection and control systems are required under this subpart as a result of the nonmethane organic compounds emission rate. The landfill is considered controlled at the time a collection and control system design plan is submitted in compliance with §60.752(b)(2)(i).

Design capacity means the maximum amount of solid waste a landfill can accept, as indicated in terms of volume or mass in the most recent permit issued by the State, local, or Tribal agency responsible for regulating the landfill, plus any in-place waste not accounted for in the most recent permit. If the owner or operator chooses to convert the design capacity from volume to mass or from mass to volume to demonstrate its design capacity is less than 2.5 million megagrams or 2.5 million cubic meters, the calculation must include a site specific density, which must be recalculated annually.

Disposal facility means all contiguous land and structures, other appurtenances, and improvements on the land used for the disposal of solid waste.

Emission rate cutoff means the threshold annual emission rate to which a landfill compares its estimated emission rate to determine if control under the regulation is required.

Enclosed combustor means an enclosed firebox which maintains a relatively constant limited peak temperature generally using a limited supply of combustion air. An enclosed flare is considered an enclosed combustor.

Flare means an open combustor without enclosure or shroud.

Gas mover equipment means the equipment (i.e., fan, blower, compressor) used to transport landfill gas through the header system.

Household waste means any solid waste (including garbage, trash, and sanitary waste in septic tanks) derived from households (including, but not limited to, single and multiple residences, hotels and motels, bunkhouses, ranger stations, crew quarters, campgrounds, picnic grounds, and day-use recreation areas).

Industrial solid waste means solid waste generated by manufacturing or industrial processes that is not a hazardous waste regulated under Subtitle C of the Resource Conservation and Recovery Act, parts 264 and 265 of this title. Such waste may include, but is not limited to, waste resulting from the following manufacturing processes: electric power generation; fertilizer/agricultural chemicals; food and related products/by-products; inorganic chemicals; iron and steel manufacturing; leather and leather products; nonferrous metals manufacturing/foundries; organic chemicals; plastics and resins manufacturing; pulp and paper industry; rubber and miscellaneous plastic products; stone, glass, clay, and concrete products; textile manufacturing; transportation equipment; and water treatment. This term does not include mining waste or oil and gas waste.

Interior well means any well or similar collection component located inside the perimeter of the landfill waste. A perimeter well located outside the landfilled waste is not an interior well.

Landfill means an area of land or an excavation in which wastes are placed for permanent disposal, and that is not a land application unit, surface impoundment, injection well, or waste pile as those terms are defined under §257.2 of this title.

Lateral expansion means a horizontal expansion of the waste boundaries of an existing MSW landfill. A lateral expansion is not a modification unless it results in an increase in the design capacity of the landfill.

Modification means an increase in the permitted volume design capacity of the landfill by either horizontal or vertical expansion based on its permitted design capacity as of May 30, 1991. Modification does not occur until the owner or operator commences construction on the horizontal or vertical expansion.

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. An MSW landfill may also receive other types of RCRA Subtitle D wastes (§257.2 of this title) such as commercial solid waste, nonhazardous sludge, conditionally exempt small quantity generator waste, and industrial solid waste. Portions of an MSW landfill may be separated by access roads. An MSW landfill may be publicly or privately owned. An MSW landfill may be a new MSW landfill, an existing MSW landfill, or a lateral expansion.

Municipal solid waste landfill emissions or *MSW landfill emissions* means gas generated by the decomposition of organic waste deposited in an MSW landfill or derived from the evolution of organic compounds in the waste.

NMOC means nonmethane organic compounds, as measured according to the provisions of §60.754.

Nondegradable waste means any waste that does not decompose through chemical breakdown or microbiological activity. Examples are, but are not limited to, concrete, municipal waste combustor ash, and metals.

Passive collection system means a gas collection system that solely uses positive pressure within the landfill to move the gas rather than using gas mover equipment.

Sludge means any solid, semisolid, or liquid waste generated from a municipal, commercial, or industrial wastewater treatment plant, water supply treatment plant, or air pollution control facility, exclusive of the treated effluent from a wastewater treatment plant.

Solid waste means any garbage, sludge from a wastewater treatment plant, water supply treatment plant, or air pollution control facility and other discarded material, including solid, liquid, semisolid, or contained gaseous material resulting from industrial, commercial, mining, and agricultural operations, and from community activities, but does not include solid or dissolved material in domestic sewage, or solid or dissolved materials in irrigation return flows or industrial discharges that are point sources subject to permits under 33 U.S.C. 1342, or source, special nuclear, or by-product material as defined by the Atomic Energy Act of 1954, as amended (42 U.S.C 2011 et seq.).

Sufficient density means any number, spacing, and combination of collection system components, including vertical wells, horizontal collectors, and surface collectors, necessary to maintain emission and migration control as determined by measures of performance set forth in this part.

Sufficient extraction rate means a rate sufficient to maintain a negative pressure at all wellheads in the collection system without causing air infiltration, including any wellheads connected to the system as a result of expansion or excess surface emissions, for the life of the blower.

Regulatory Analysis: The definitions apply, but it is my understanding that they do not go into the air operating permit.

[61 FR 9919, Mar. 12, 1996, as amended at 63 FR 32750, June 16, 1998; 64 FR 9262, Feb. 24, 1999]

§ 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)(ii)(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.

Regulatory Analysis: Before the East Cell Expansion project began in 2009, the Kootenai County Farm Landfill had a design capacity of 2.33 million tons, which is equivalent to 2.09 million megagrams. Total capacity of the landfill with the East Cell Expansion was increased to 7.93 million megagrams, so KCFL was required to have an air operating permit. NMOC emission rate for 2009 is projected to be 293 Mg per year, so KCFL had to submit a plan for a collection and control system that conforms with §60.759, and then install and operate that system. The collection and control system can be removed after production of LFG drops off per stated minimums. At that time we can have our air operating permit rescinded.

[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]

§ 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.

Regulatory Analysis: This whole section applies.

[61 FR 9919, Mar. 12, 1996, as amended at 63 FR 32751, June 16, 1998; 65 FR 61778, Oct. 17, 2000]

§ 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_O, and 4,000 parts per million by volume as hexane for the C_{NMOC}. 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.

$$M_{NMOC} = \sum_{i=1}^{n} 2\,k\,L_o M_i \left(e^{-kt_i}\right)\left(C_{NMOC}\right)\left(3.6\times10^{-9}\right)$$

where,

M_{NMOC}=Total NMOC emission rate from the landfill, 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 solid waste in the i^{th}section, megagrams

t_i=age of the i^{th}section, years

C_{NMOC}=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.

$M_{NMOC}= 2L_oR\ (e^{-kc}-e^{-kt})\ C_{NMOC}(3.6 \times 10^{-9})$

Where:

M_{NMOC}=mass emission rate of NMOC, megagrams per year

L_o=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

C_{NMOC}=concentration of NMOC, parts per million by volume as hexane

c=time since closure, years; for active landfill c=O 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 C_{NMOC}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 C_{NMOC}as carbon to C_{NMOC}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:

$M_{NMOC} = 1.89 \times 10^{-3} Q_{LFG} C_{NMOC}$

where,

M_{NMOC}= mass emission rate of NMOC, megagrams per year

Q_{LFG}= flow rate of landfill gas, cubic meters per minute

C_{NMOC}= NMOC concentration, parts per million by volume as hexane

(1) The flow rate of landfill gas, Q_{LFG}, 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, C_{NMOC}, 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 C_{NMOC}as carbon to C_{NMOC}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:

Control Efficiency = $(NMOC_{in} - NMOC_{out})/(NMOC_{in})$

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).

Regulatory Analysis: Section (a)(1) applies because we know the actual year-to-year solid waste

acceptance rate and are using the equations to calculate NMOC emission rate. Sections (a)(2),(3), and (4) don't apply because we believe the NMOC emission rate is already over 50 Mg per year, and we already have controls in place. We are using the EPA model LandGEM - Landfill Gas Emissions Model, Version 3.02.

[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]

§ 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 $L_o$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:

$Q_m = 2L_oR\ (e^{-kc} - e^{-kt})$

where,

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

L_o= 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 = O and $e^{-kc} = 1$)

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

$$Q_M = \sum_{i=1}^{n} 2\,k\,L_o\,M_i\left(e^{-kt_i}\right)$$

where,

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

k=methane generation rate constant, $year^{-1}$

L_o=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 remonitoring 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 remonitoring 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.

Regulatory Analysis: This whole section applies.

[61 FR 9919, Mar. 12, 1996, as amended at 63 FR 32752, June 16, 1998]

§ 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.

Regulatory Analysis: Kootenai County Farm Landfill is using a landfill gas collection system and an

enclosed flare for primary control, and surface monitoring for secondary control; only those subsections describing monitoring for those control strategies apply. NOTE: An "enclosed flare," two of which are currently being used at KCFL, is included in the definition of an "enclosed combustion unit."

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

§ 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.

Regulatory Analysis: This whole section applies, except for those subsections that refer to alternative reporting for alternative monitoring.

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

§ 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.

Regulatory Analysis: This whole section applies, except for those subsections that refer to open flares or alternative compliance methods.

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

§ 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 expandibility, 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:

$Q_i = 2\ k\ L_o M_i (e^{-kt_i})\ (C_{NMOC})\ (3.6 \times 10^{-9})$

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

C_{NMOC}= concentration of nonmethane organic compounds, parts per million by volume

3.6×10^{-9}= conversion factor

(iii) The values for k and C_{NMOC}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 C_{NMOC}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).

Regulatory Analysis: This whole section applies.

[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]

Appendix C – 40 CFR 63 Subpart AAAA

e-CFR Data is current as of July 28, 2016

Title 40: Protection of Environment

PART 63—NATIONAL EMISSION STANDARDS FOR HAZARDOUS AIR POLLUTANTS FOR SOURCE CATEGORIES

Subpart AAAA—National Emission Standards for Hazardous Air Pollutants: Municipal Solid Waste Landfills

Source: 68 FR 2238, Jan. 16, 2003, unless otherwise noted.

What This Subpart Covers

§ 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.

§ 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 (m^3) 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 our greater than 2.5 million Mg and 2.5 million m^3 and that is not permanently closed as of January 16, 2003.

Regulatory Analysis: Subsections apply that refer to applicability of a landfill hat has accepted waste since November 8, 1987 and is an area source for HAP but is subject to 40 CFR 60 Subpart WWW. Kootenai County Farm Landfill does not have a bioreactor.

§ 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.

Regulatory Analysis: Subsections apply that refer to applicability of a landfill hat has accepted waste since November 8, 1987 and is an area source for HAP but is subject to 40 CFR 60 Subpart WWW. Kootenai County Farm Landfill does not have a bioreactor.

§ 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.

Regulatory Analysis: *Subsection (f) applies because Kootenai County Farm Landfill is an existing affected source.*

§ 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 m^3 , 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.

Regulatory Analysis: This section does not apply because Kootenai County Farm Landfill does not have a bioreactor.

§ 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.

Regulatory Analysis: *This section applies.*

§ 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.

Regulatory Analysis: This section does not apply because Kootenai County Farm Landfill does not have a bioreactor.

Standards

§ 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 m^3 , 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*).

Regulatory Analysis: *Subsection (a)(2) applies because Kootenai County Farm Landfill is subject to 40 CFR 60 Subpart WWW and an EPA approved and effective State plan that implements 40 CFR 60 Subpart Cc.*

General and Continuing Compliance Requirements
§ 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.

Regulatory Analysis: This section applies.

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

§ 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.

Regulatory Analysis: This section applies.

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

§ 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.

Regulatory Analysis: This section applies.

Notifications, Records, and Reports

§ 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.

Regulatory Analysis: Subsection (a) of this section applies.

Other Requirements and Information

§ 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.

Regulatory Analysis: Subsections (a) and (c) of this section applies.

§ 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 theFederal Registerannouncing 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.

Regulatory Analysis: The definitions apply, but it is my understanding that they do not go into the air operating permit.

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)	Applicability: general applicability of NESHAP in this part	Affected sources are already subject to the provisions of paragraphs (a)(10)–(12) through the same provisions under 40 CFR, part 60 subpart A.
63.1(b)	Applicability determination for stationary sources	
63.1(e)	Title V permitting	
63.2	Definitions	

Part 63 Citation	Description	Explanation
63.4	Prohibited activities and circumvention	Affected sources are already subject to the provisions of paragraph (b) through the same provisions under 40 CFR, part 60 subpart A.
63.5(b)	Requirements for existing, newly constructed, and reconstructed sources	
63.6(e)	Operation and maintenance requirements, startup, shutdown and malfunction plan provisions	
63.6(f)	Compliance with nonopacity emission standards	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.
63.10(b)(2)(i)–(b)(2)(v)	General recordkeeping requirements	
63.10(d)(5)	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	
63.12(a)	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	
63.15	Availability of information and confidentiality	

Regulatory Analysis: *The Subpart A requirements apply, and the table goes into the air operating permit.*

Appendix D – Permits to Construct Included in the Tier I Permit

PTC No. 055-00044, Issued December 13, 1999 – Flare No. 2

EMISSION LIMITS

1.1 Opacity Limit

Emissions from the landfill flare shall not exceed twenty percent (20%) opacity for a period or periods aggregating more than three (3) minutes in any sixty (60) minute period as required by IDAPA 16.01.01.625 (Rules for the Control of Air Pollution in Idaho). Opacity shall be determined by the procedures contained in IDAPA 16.01.01.625.

This permit condition is included in the Facility-Wide permit conditions.

OPERATING REQUIREMENTS

2.1 Combustion Requirements

Combustion temperature shall be maintained at greater than or equal to an hourly average of 1,500 degrees Fahrenheit.

This permit condition is included in Section 6 of the permit for Flare No. 2. The permit conditions is unchanged.

2.2 Pilot Flame

A pilot flame shall be maintained at the flare at all times.

This permit condition is included in Section 6 of the permit. It has been included along with an identical requirement for Flare No. 1. The Tier I permit now specifies that the pilot flame only needs to be maintained when gas is routed to the flares.

MONITORING AND RECORDKEEPING REQUIREMENTS

2.1 Combustion Temperature

The Permittee shall install, calibrate, maintain, and operate according to the manufacturer's specifications a temperature monitoring device equipped with a continuous recorder to demonstrate compliance with Section 2.1 of this permit.

This requirement is included in Section 4 of the Tier I operating permit that includes requirements of 40 CFR 60 Subpart WWW. 40 CFR 60.756(b)(1) specifies that the flare be equiped with a temperature monitoring device with a continuous recorder.

3.2 Operations and Maintenance Manual Requirements

Within sixty (60) days after startup, the Permittee shall have developed an Operations and Maintenance (O&M) Manual for gas flare number two which describes the procedures that will be followed to comply with General Provision B and the manufacturer's air pollution control device specifications. This manual shall remain on site at all times and shall be made available to DEQ representatives upon request.

The Tier I operating permit is issued well after 60 days of startup and the facility must have on-site an O&M manual that statisfies this permit conditions requirements. The only change to the permit condition is to remove the statement "Within (60) days after startup".

Otherwise the permit condition is unchanged. This requirement for Flare No. 2 is included in Section 6 of the Tier I permit.

REPORTING REQUIREMENTS

4.1 Average Temperature

The Permittee shall submit a quarterly report to DEQ of all instances when the average hourly temperature was less than 1,500 degrees Fahrenheit.

This requirement for Flare No. 2 is included in the Tier 1 operating permit Section 6 without change. This permit condition had been omitted from the previous Tier I permit.

4.2 Certification of Documents

All documents including, but not limited to, records, monitoring data, supporting information, requests for confidential treatment, testing reports, and compliance certifications submitted to DEQ shall contain a certification by a responsible official. The certification shall state that, based on information and belief formed after reasonable inquiry, the statements and information in the document(s) are true, accurate, and complete.

This requirement is included in the Tier 1 operating permit General Provisions Section 7.

1.2 Equipment Specifications

Dry Scrubber Specifications

Manufacturer:	Chemical Proof Corp.
Efficiency:	50% Moisture Removal

Enclosed Gas Flare Specifications

The flare is designed with five burner heads each having a six inch diameter outlet.

Manufacturer:	John Zink Inc.
Maximum heat capacity:	24.8 MMBtu/hr input
Fuel Type:	Landfill gas
Maximum input capacity:	825 acfm

Stack Specifications

Minimum stack height:	40.0 feet
Stack Diameter:	6.0 feet
Exit Temperature:	1500°F
Volumemetric flow rate:	825 acfm

2. EMISSION LIMITS

2.1 VOC Emission Limit

Volatile organic compounds (VOCs) shall be reduced to a maximum concentration of twenty parts per million by volume on a dry basis (20 ppmvd) out of the stack outlet as hexane at 3% 0_2 (EPA proposed 40 CFR 60.752(b)(iii)(B), Subpart WWW, Fed. Reg. Vol. 56, No.104).

40 CFR 60 Subpart WWW limits NMOC not VOC emissions. The NMVOC limit is included in Tier I operating permit Section 4.

2.2 Fugitive Emissions

Fugitive particulate matter emissions from the landfill shall be reasonably controlled as required in IDAPA 58.01.01.651, Rules for the control of Air Pollution in Idaho. This shall include, but is not limited to, the application of dust suppressants on all unpaved roads.

This requirement is include in the Facility-wide section of the Tier I operating permit.

3. OPERATING REQUIREMENTS

3.1 Wellhead Gauge Pressure

The gauge pressure at each wellhead and in the gas collection header shall be maintained in accordance with 40 CFR 60.754.

This requirement is include in Section 4 of the Tier I operating permit.

3.2 Pilot Flame

A pilot flame at the flare device shall be maintained at all times.

This permit condition is included in Section 6 of the permit. It has been included along with an identical requirement for Flare No. 2. The Tier I permit now specifies that the pilot flame only needs to be maintained when gas is routed to the flares.

3.3 Combustion Requirements

The combustion temperature shall be maintained at a minimum 1500°F. Combustion temperature shall be maintained at, or above, the temperature recorded during the most recent source test that demonstrated compliance with Section 2.1 of this permit.

This requirement for Flare No. 1 is included in Tier I operating Permit Section 6 without change.

3.4 Landfill Gas Flowrate

The landfill gas flowrate shall not exceed the maximum design capacity of the enclosed gas flare described in Section 1.2 of this permit.

This requirement for Flare No. 1 is included in Tier I operating Permit Section 6. The only change to the permit condition is that instead of refering to the gas flowrate listed in Section 1.2 of the permit, the actual gas flowrate (825 acfm) is included in place of the reference.

3.5 Collection System

The collection system shall capture and collect landfill gas at sufficient extraction rates. Gas collection system expansion shall be performed for each area, cell, or group of cells for which future refuse will be accepted.

This is a 40 CFR 60 Subpart WWW requirement (40 CFR 60.752(b)(2)(ii)(A)(2)) and is included in Tier I operating permit Section 4.

4. MONITORING AND RECORDKEEPING REQUIREMENTS

4.1 Wellhead pressure

The permittee shall install a sampling port at each wellhead and measure the gauge pressure in the gas collection header on a monthly basis to determine compliance with Section 3.1 of this permit.

This is a 40 CFR 60 Subpart WWW requirement (40 CFR 60.755(a)(3)) and is included in Tier I operating permit Section 4.

4.2 Pilot Flame

The permittee shall install, calibrate, maintain, and operate according to manufacturer specifications, a heat sensing device at the pilot light to detect the continuous presence of a flame.

This requirement is not a 40 CFR 60 Subpart WWW requirement. It has been included in Tier I operating permit Section 6.

4.3 Combustion Temperature

The permittee shall install, calibrate, maintain, and operate according to the manufacturer specifications, a temperature monitoring device equipped with a continuous recorder and having an accuracy of ± 46.7°F of the combustion temperature to determine compliance with Section 3.3 of this permit.

The requirement to monitor combustion temperature is a 40 CFR 60 Subpart WWW requirement (40 CFR 60.756(b)(1)) and is included in Tier I operating permit Section 4. The accuracy requirement for the NSPS required monitor is ±1% of the temperature being monitored, which is more stringent than the ± 46.7°F requirement in this permit condition. The flare would have to operate at a temperature greater than 4,670 °F in order for ±1% of the temperature being monitored accuracy requirement to be outside of ± 46.7°F range. 4,670 °F is well outside of the operating range of the flare.

4.4 Monitor Flow Rate to Flare

The permittee shall install, calibrate, maintain, and operate according to manufacturer specifications, a flow indicator that provides a record of gas flow to the enclosed flare at maximum intervals of every 15 minutes (40 CFR 60.755) to determine compliance with Section 3.4 of this permit.

This is 40 CFR 60.756(b)(2)(i) requirement and is include in Tier I operating permit Section 4.

4.5 Performance Tests

Within 60 days after achieving the maximum production rate at which the source will operate, but not later than 180 days after initial startup, the permittee shall conduct an initial performance test to measure the nonmethane organic carbon (NMOC) emissions from the landfill gas flare stack in accordance with 40 CFR 60.8 and 40 CFR 60.754.

This is an obsolete 40 CFR 60 Subpart WWW requirement for Flare No. 1. According to the most recent inspection report this initial test was conducted on September 30, 1998.

4.6 Record Keeping Requirements

The permittee shall record the following information which shall remain onsite for a minimum period of two years and be made available to inspection personnel upon request:

Tier I general provisions require records to be kept for 5 years.

- The landfill maximum design capacity, daily amount of refuse-in-place, and the yearly waste acceptance rate.

  This is a 40 CFR 60.758(a) requirement and is included in Tier I operating permit Section 4.

- The monthly gauge pressure reading in the gas collection header.

  This is a 40 CFR 60.755(a)(3) requirement and is included in Tier I operating permit Section 4.

- All three hour periods when the average combustion temperature was more than 82° F below the average combustion temperature demonstrated during the most recent performance test required in Section 4.5 of this permit.

  This is a 40 CFR 60.758(c)(1)(i) requirement and is included in Tier I operating permit Section 4.

- All periods when the pilot flame or flare was absent and when the control device was not operating.

  This permit condition is included in Section 6 of the Tier I operating permit.

- All periods when the gas stream is diverted from the control device or has no flowrate.

  This is a 40 CFR 60.757(f)(2) requirement and is included in Tier I operating permit Section 4.

5. REPORTING REQUIREMENTS

5.1 Performance Tests

The permittee shall submit a test protocol for each performance test required in Section 4.5 of this permit to the Department for approval at least thirty days prior to each test date. Each performance test report, including the required process data, shall be submitted to the Department within 30 days of the date on which the performance test is conducted.

Section 4.5 of the permit refers to the initial performance test. This is an obsolete permit condition. According to the most recent inspection report this initial test was conducted on September 30, 1998.