

# **Statement of Basis**

**Permit to Construct No. P-2019.0146  
Project ID 62411**

**Fort Hall Mine Road Landfill  
Pocatello, Idaho**

**Facility ID 005-00062**

**Final**

**September 21, 2020  
Zach Pierce  
Permit Writer**

A handwritten signature consisting of the letters 'ZP' in a cursive, slanted font.

The purpose of this Statement of Basis is to satisfy the requirements of IDAPA 58.01.01. et seq, Rules for the Control of Air Pollution in Idaho, for issuing air permits.

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## ACRONYMS, UNITS, AND CHEMICAL NOMENCLATURE

AAC	acceptable ambient concentrations
AACC	acceptable ambient concentrations for carcinogens
acfm	actual cubic feet per minute
ASTM	American Society for Testing and Materials
BACT	Best Available Control Technology
BMP	best management practices
Btu	British thermal units
CAA	Clean Air Act
CAM	Compliance Assurance Monitoring
CEMS	continuous emission monitoring systems
cfm	cubic feet per minute
CFR	Code of Federal Regulations
CI	compression ignition
CMS	continuous monitoring systems
CO	carbon monoxide
CO <sub>2</sub>	carbon dioxide
CO <sub>2</sub> e	CO <sub>2</sub> equivalent emissions
COMS	continuous opacity monitoring systems
DEQ	Department of Environmental Quality
dscf	dry standard cubic feet
EL	screening emission levels
EPA	U.S. Environmental Protection Agency
GACT	Generally Available Control Technology
gph	gallons per hour
gpm	gallons per minute
gr	grains (1 lb = 7,000 grains)
HAP	hazardous air pollutants
hp	horsepower
hr/yr	hours per consecutive 12 calendar month period
ICE	internal combustion engines
IDAPA	a numbering designation for all administrative rules in Idaho promulgated in accordance with the Idaho Administrative Procedures Act
km	kilometers
lb/hr	pounds per hour
lb/qtr	pound per quarter
m	meters
MACT	Maximum Achievable Control Technology
MMBtu	million British thermal units
MMscf	million standard cubic feet
NAAQS	National Ambient Air Quality Standard
NESHAP	National Emission Standards for Hazardous Air Pollutants
NO <sub>2</sub>	nitrogen dioxide
NO <sub>x</sub>	nitrogen oxides
NSPS	New Source Performance Standards
O&M	operation and maintenance
O <sub>2</sub>	oxygen
PAH	polyaromatic hydrocarbons
PC	permit condition
PCB	polychlorinated biphenyl
PM	particulate matter
PM <sub>2.5</sub>	particulate matter with an aerodynamic diameter less than or equal to a nominal 2.5 micrometers

PM <sub>10</sub>	particulate matter with an aerodynamic diameter less than or equal to a nominal 10 micrometers
POM	polycyclic organic matter
ppm	parts per million
ppmw	parts per million by weight
PSD	Prevention of Significant Deterioration
PTC	permit to construct
PTC/T2	permit to construct and Tier II operating permit
PTE	potential to emit
PW	process weight rate
RICE	reciprocating internal combustion engines
<i>Rules</i>	<i>Rules for the Control of Air Pollution in Idaho</i>
scf	standard cubic feet
SCL	significant contribution limits
SIP	State Implementation Plan
SM	synthetic minor
SM80	synthetic minor facility with emissions greater than or equal to 80% of a major source threshold
SO <sub>2</sub>	sulfur dioxide
SO <sub>x</sub>	sulfur oxides
T/day	tons per calendar day
T/hr	tons per hour
T/yr	tons per consecutive 12 calendar month period
TAP	toxic air pollutants
U.S.C.	United States Code
VOC	volatile organic compounds
µg/m <sup>3</sup>	micrograms per cubic meter

## **FACILITY INFORMATION**

### ***Description***

Bannock County operates the Fort Hall Mine Road Landfill, a municipal solid waste landfill. The landfill currently consists of two active cells, Cell 2 “Site A” and Cell 4. The original cell (Closed Cell 1 “Old Landfill”, with a calculated capacity of 1,505,097 Mg, 1943 – 1993), was succeeded by Cell 2 (with a calculated capacity of 1,160,000 Mg, 1994 – 2022 or later (estimated)). A third cell, Cell 4, began operations in 2016, and has increased the total landfill design capacity to 8,057,896 US tons (7,310,000 Mg) at that time.

In 2010, Bannock County proposed to install a landfill gas (LFG) collection system at its Fort Hall Mine Road Landfill. Collected LFG is piped to an open flare and to IC engines powering an electrical generator that is connected to the commercial power grid. The project to install the flare was completed in 2012. The project to install IC Engine #1, a Caterpillar 3520C, was completed in 2014 while the project to install IC Engine #2, a second Caterpillar 3520C, was completed in 2018.

The modifications presented in this application involve updating the emission inventory for NO<sub>x</sub>, CO, VOC and formaldehyde to utilize the engine manufacturer’s emission ratings, as well as the update SO<sub>2</sub> to account for the historical trend of total reduced sulfur (TRS).

### ***Permitting History***

The following 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).

June 19, 2019	T1-2018.0007, Tier I operating permit renewal, Permit status (A)
October 22, 2018	P-2009.0146, PTC Modification to install a second landfill gas-fired IC engine in addition to the existing IC Engine, Permit status (A but will become S upon issuance of this permit)
January 7, 2016	P-2009.0146, PTC Modification to account for actual IC Engine installed, a Caterpillar 3520C not a Caterpillar 3516. Permit status (S).
February 27, 2014	T1-2010.0155, Administrative Amendment to correct typographical errors in the Tier I operating permit issued January 17, 2014, Permit status (S)
January 17, 2014	T1-2010.0155, Administrative Amendment to correct typographical errors in the initial Tier I operating permit, Permit status (S)
July 18, 2013	T1-2010.0155, Initial Tier I permit, Permit status (S)
April 6, 2010	P-2009.0146, Initial permitting action to install and operate a landfill gas collection system, a flare, and a Caterpillar model 3516 IC engine powering an electrical generator, Permit status (S).

### ***Application Scope***

This PTC is for a modification at an existing Tier I facility. See the current Tier I permit statement of basis for the permitting history.

The applicant has proposed to modify the emission inventory for NO<sub>x</sub>, CO, VOC and formaldehyde by utilizing the engine manufacturer’s emission ratings, as well as the update SO<sub>2</sub> to account for the historical trend of TRS.

### ***Application Chronology***

March 17, 2020	DEQ received an application and an application fee.
March 24– April 8, 2020	DEQ provided an opportunity to request a public comment period on the application and proposed permitting action.

April 13, 2020	DEQ determined that the application was complete.
May 27, 2020	DEQ made available the draft permit and statement of basis for peer and regional office review.
June 9, 2020	DEQ made available the draft permit and statement of basis for applicant review.
June 23, 2020	DEQ received the permit processing fee.
June 30 – July 30, 2020	DEQ provided a public comment period on the proposed action.
September 21, 2020	DEQ issued the final permit and statement of basis.

## TECHNICAL ANALYSIS

### *Emissions Units and Control Equipment*

**Table 1 EMISSIONS UNIT AND CONTROL EQUIPMENT INFORMATION**

Source ID No.	Sources	Control Equipment	Emission Point ID No.
Landfill	<u>Landfill:</u> Closed Cell 1, Cell 2, and Cell 4	Landfill Gas (LFG) Collection System w/ the gas routed to an IC Engine and/or a Flare	N/A
IC Engine #1	<u>IC Engine #1:</u> Manufacturer: Caterpillar Model: 3520C Manufacture Date: 2013 Maximum Power Rating: 2,242 bhp Fuel: Landfill gas	N/A	<u>IC Engine #2 exhaust, E2:</u> Exit height: 31.0 ft (9.45 m) Exit diameter: 1.35 ft (0.41 m) Exit velocity: 50.89 ft/s (15.51 m/s) Exit temperature: 850 °F (454.4 °C)
IC Engine #2	<u>IC Engine #2:</u> Manufacturer: Caterpillar Model: 3520C Manufacture Date: 2018 Maximum Power Rating: 2,242 bhp Fuel: Landfill gas	N/A	<u>IC Engine #2 exhaust, E2:</u> Exit height: 31.0 ft (9.45 m) Exit diameter: 1.35 ft (0.41 m) Exit velocity: 50.89 ft/s (15.51 m/s) Exit temperature: 850 °F (454.4 °C)
Flare	<u>Flare:</u> Maximum Rating: 15.92 MMBtu/hr Fuel: Landfill gas	N/A	<u>Flare, F1:</u> Exit height: 42.6 ft (12.98 m) Exit diameter: 1.92 ft (0.59 m) Exit velocity: 38.1 ft/s (20 m/s) Exit temperature: 1,832 °F (1,022 °C)

### *Emissions Inventories*

#### Potential to Emit

IDAPA 58.01.01 defines Potential to Emit 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 hours 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 emissions is state or federally enforceable. Secondary emissions do not count in determining the potential to emit of a facility or stationary source.

Using this definition of Potential to Emit an emission inventory was developed for the two IC engines and flare operations at the facility (see Appendix A) associated with this proposed project. Emissions estimates of criteria pollutant, HAP PTE were based on emission factors from AP-42 Sections 1.4-2, 2.4, 3.2-2, operation of 8,760 hours per year, manufacturer emission ratings, a 20% compliance safety factor on certain pollutants, and process information specific to the facility for this proposed project.

### **Uncontrolled Potential to Emit**

Using the definition of Potential to Emit, uncontrolled Potential to Emit is then 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 hours of operation or on the type or amount of material combusted, stored or processed, shall **not** be treated as part of its design **since** the limitation or the effect it would have on emissions **is not** state or federally enforceable.

The uncontrolled Potential to Emit is used to determine if a facility is a “Synthetic Minor” source of emissions. Synthetic Minor sources are facilities that have an uncontrolled Potential to Emit for regulated air pollutants or HAP above the applicable Major Source threshold without permit limits.

Table 2 (below), presents the uncontrolled Potential to Emit for regulated air pollutants as submitted by the Applicant and verified by DEQ staff. See Appendix A for a detailed presentation of the calculations and the assumptions used to determine emissions for each emissions unit. For the IC engines and flare operation uncontrolled Potential to Emit is based upon a worst-case for operation of the facility of 8,760 hr/yr.

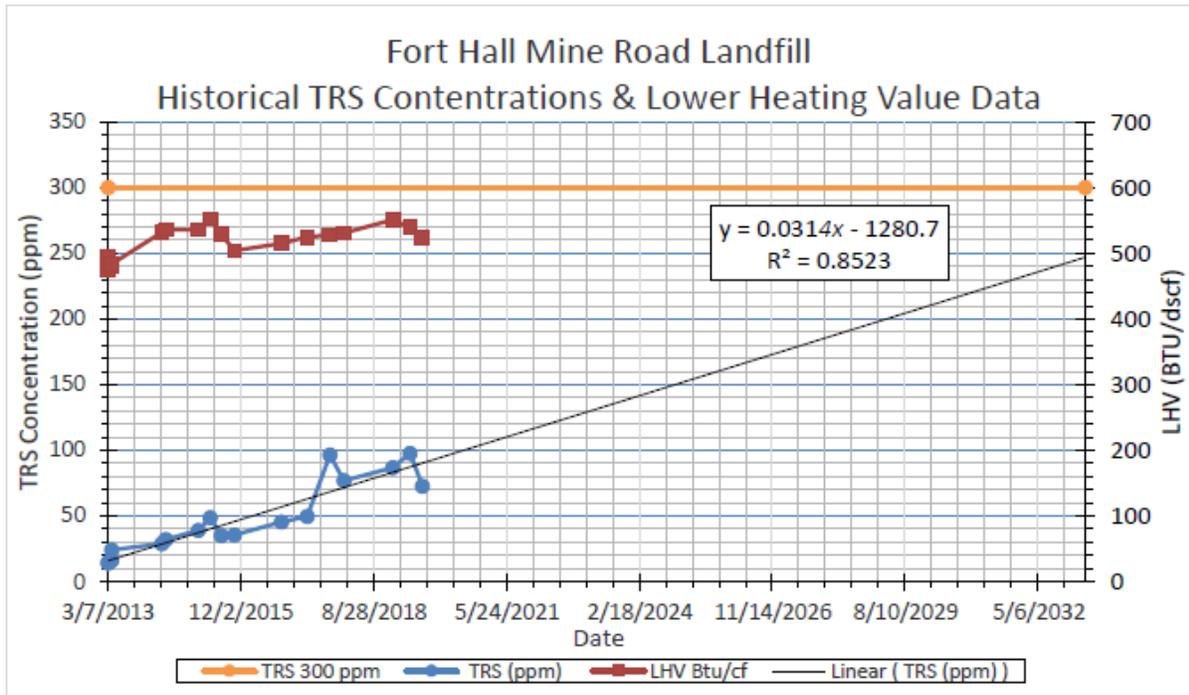
For IC Engine(s) operations, uncontrolled Potential to Emit is based upon a worst-case scenario of operation at 8,760 hr/yr. Both IC Engine(s) were assumed to operate at 100% load at a sited rated value by the manufacturer (2,216 bhp). This equates to a maximum site rated landfill gas combustion of 544 cfm per engine. For all landfill gas flow rates discussed in efforts to provide a conservative PTE, 450 Btu/scf heating value is used, assuming 50% CH<sub>4</sub>.

Under normal facility operations, the flare is assumed to combust any excess landfill gas generated that is not combusted by either IC Engine or when the IC Engine(s) are down for maintenance. The Applicant assumed a conservative, total landfill gas generation flow of 1,500 cfm (at assumed 50% CH<sub>4</sub>). Thus assuming both IC Engine(s) operate at their described maximums above, 412 cfm of landfill gas is left for maximum flare combustion. For PM and HAPs/TAPs emissions the Applicant assumed a maximum landfill gas combustion rate of 412 cfm for the flare at 8,760 hr/yr. However, this overall scenario adequately represents a facility worst-case scenario as emission factors for all pollutants are either equal to or greater for the IC Engine(s) in comparison for the flare. Said in practical terms, in the case both IC engines were to be shut down and all generated landfill gas was routed to the flare, emissions for all pollutants would be equal to or less than proposed, worst-case scenario.

Under the facility’s current Landfill Gas to Energy Agreement, the landfill gas captured flow rate is projected to peak in 2033 (the last year of the agreement) at 1,500 cfm (at assumed 50% CH<sub>4</sub>). Therefore, as mentioned above the applicant’s uncontrolled Potential to Emit calculations represent a conservative, worst-case, facility-wide scenario.

SO<sub>2</sub> emissions for F1, E1, & E2 were calculated using a TRS concentration of 300 ppmv, which was based on historical sampling data, and a future projected TRS concentration of 250 ppm with a 20% compliance safety factor applied. The TRS concentration trend line projected to 2033 is presented in the chart shown in Figure 1.

**Figure 1 HISTORICAL TRS CONCENTRATIONS & LOWER HEATING VALUE DATA**



All emission estimates for the flare used emission factors and guidance from AP-42 Chapter 2.4 Draft Version (with exception to the SO<sub>2</sub> as previously described).

Emission rates for VOC and NO<sub>x</sub> for Engines E1 & E2 were revised based on manufacturer’s emission rates with a 20% compliance safety factor added. CO and formaldehyde emissions for Engines E1 & E2 were based solely on the manufacturer provided emissions data. PM<sub>10</sub>, PM<sub>2.5</sub>, and TAP emissions estimates for the IC Engines used emission factors and guidance from AP-42 Chapter 2.4 (Draft Version).

**Table 2 UNCONTROLLED POTENTIAL TO EMIT FOR REGULATED AIR POLLUTANTS**

Source	PM <sub>10</sub> /PM <sub>2.5</sub>	SO <sub>2</sub>	NO <sub>x</sub>	CO	VOC
	T/yr	T/yr	T/yr	T/yr	T/yr
<b>Point Sources</b>					
Flare	0.81	14.36	2.52	2.93	0.83
IC Engine #1	1.07		23.98	96.39	13.44
IC Engine #2	1.07		23.98	96.39	13.44
<b>Total, Point Sources</b>	<b>2.95</b>	<b>14.36</b>	<b>50.48</b>	<b>195.71</b>	<b>27.71</b>

The following table presents the uncontrolled Potential to Emit for HAP pollutants as submitted by the Applicant and verified by DEQ staff. See Appendix A for a detailed presentation of the calculations and the assumptions used to determine emissions for each emissions unit. For the IC engines and flare uncontrolled Potential to Emit is based upon a worst-case for operation of the facility of as described above.

**Table 3 UNCONTROLLED POTENTIAL TO EMIT FOR HAZARDOUS AIR POLLUTANTS**

<b>Hazardous Air Pollutants</b>	<b>PTE (T/yr)</b>
1,1,1-Trichloroethane	2.759E-03
1,1,2,2-Tetrachloroethane	7.644E-03
1,1,2,3,4,4-Hexachloro-1,3-butadiene (Hexachlorobutadiene)	7.746E-05
1,1,2-Trichloroethane	1.794E-03
1,1-Dichloroethane	1.752E-02
1,1-Dichloroethene (1,1-Dichloroethylene)	1.320E-03
1,2,4-Trichlorobenzene	8.510E-05
1,2-Dibromoethane (Ethylene dibromide)	7.676E-05
1,2-Dichloroethane (Ethylene dichloride)	1.339E-03
1,2-Dichloropropane	5.001E-04
1,3-Butadiene (Vinyl ethylene)	7.643E-04
1,4-Dioxane (1,4-Diethylene dioxide)	6.217E-05
2,2,4-Trimethylpentane	1.402E-02
4-Methyl-2-pentanone (MIBK)	7.528E-03
Acetaldehyde	2.902E-04
Acetonitrile	1.943E-03
Acrylonitrile	0.000E-00
Benzyl chloride	1.950E-04
Bromomethane (Methyl bromide)	1.697E-04
Carbon disulfide	9.527E-04
Carbon tetrachloride	1.045E-04
Carbonyl sulfide (Carbon oxysulfide)	6.239E-04
Chlorodifluoromethane (Freon 22)	5.859E-03
Chloroethane (Ethyl chloride)	2.169E-02
Chloromethane (Methyl chloride)	1.049E-03
Dichloromethane (Methylene chloride)	4.446E-02
Ethylbenzene	4.392E-02
Isopropylbenzene (Cumene)	4.399E-03
Mercury	4.166E-05
Styrene (Vinylbenzene)	3.644E-03
Tetrachloroethylene (Perchloroethylene)	2.865E-02
Tribromomethane (Bromoform)	2.668E-04
Trichloroethylene (Trichloroethene)	9.260E-03
Trichloromethane (Chloroform)	7.194E-04
Vinyl acetate	7.554E-03
Vinyl chloride (Chloroethene)	7.554E-03
1,4-Dichlorobenzene	1.176E-02
Formaldehyde	1.763E+01
Benzene	1.596E-02
Hexane	2.274E-02
Naphthalene	1.167E-03
Toluene (Methyl benzene)	2.314E-01
<b>Total</b>	<b>18.15</b>

**Pre-Project Potential to Emit**

Pre-project Potential to Emit is used to establish the change in emissions at a facility as a result of this project.

The following table presents the pre-project potential to emit for all criteria pollutants for the IC engines and flare being modified as submitted by the Applicant and verified by DEQ staff. See Appendix A for a detailed presentation of the calculations of these emissions for each emissions unit.

**Table 4 PRE-PROJECT POTENTIAL TO EMIT FOR REGULATED AIR POLLUTANTS**

Source	PM <sub>10</sub>		SO <sub>2</sub>		NO <sub>x</sub>		CO		VOC	
	lb/hr <sup>(a)</sup>	T/yr <sup>(b)</sup>								
Flare	0.19	0.81	1.35	5.93	0.58	2.52	0.67	2.93	0.19	0.83
IC Engine #1	0.24	1.07			4.83	21.16	10.68	46.75	2.62	11.48
IC Engine #2	0.24	1.07			4.83	21.16	10.68	46.75	2.62	11.48
<b>Pre-Project Totals</b>	<b>0.67</b>	<b>2.95</b>	<b>1.35</b>	<b>5.93</b>	<b>10.24</b>	<b>44.84</b>	<b>22.03</b>	<b>96.45</b>	<b>5.43</b>	<b>23.78</b>

- a) Controlled average emission rate in pounds per hour is a daily average, based on the proposed daily operating schedule and daily limits.
- b) Controlled average emission rate in tons per year is an annual average, based on the proposed annual operating schedule and annual limits.

**Post Project Potential to Emit**

Post project Potential to Emit is used to establish the change in emissions at a facility and to determine the facility’s classification as a result of this project. Post project Potential to Emit includes all permit limits resulting from this project.

The following table presents the post project Potential to Emit for criteria pollutants for the IC engines and flare being modified as determined by DEQ staff. See Appendix A for a detailed presentation of the calculations of these emissions for each emissions unit.

**Table 5 POST PROJECT POTENTIAL TO EMIT FOR REGULATED AIR POLLUTANTS**

Source	PM <sub>10</sub> /PM <sub>2.5</sub>		SO <sub>2</sub>		NO <sub>x</sub>		CO		VOC	
	lb/hr <sup>(a)</sup>	T/yr <sup>(b)</sup>	lb/hr <sup>(a)</sup>	T/yr <sup>(b)</sup>	lb/hr <sup>(a)</sup>	T/yr <sup>(b)</sup>	lb/hr <sup>(a)</sup>	T/yr <sup>(b)</sup>	lb/hr <sup>(a)</sup>	T/yr <sup>(b)</sup>
Flare	0.19	0.81	3.28	14.36	0.58	2.52	0.67	2.93	0.19	0.83
IC Engine #1	0.24	1.07			5.47	23.98	22.01	96.39	3.07	13.44
IC Engine #2	0.24	1.07			5.47	23.98	22.01	96.39	3.07	13.44
<b>Post Project Totals</b>	<b>0.67</b>	<b>2.95</b>	<b>3.28</b>	<b>14.36</b>	<b>11.52</b>	<b>50.48</b>	<b>44.69</b>	<b>195.71</b>	<b>6.33</b>	<b>27.71</b>

- a) Controlled average emission rate in pounds per hour is a daily average, based on the proposed daily operating schedule and daily limits.
- b) Controlled average emission rate in tons per year is an annual average, based on the proposed annual operating schedule and annual limits.

**Change in Potential to Emit**

The change in facility-wide potential to emit is used to determine if a public comment period may be required and to determine the processing fee per IDAPA 58.01.01.225. The following table presents the facility-wide change in the potential to emit for criteria pollutants.

**Table 6 CHANGES IN POTENTIAL TO EMIT FOR REGULATED AIR POLLUTANTS**

Source	PM <sub>10</sub> /PM <sub>2.5</sub>		SO <sub>2</sub>		NO <sub>x</sub>		CO		VOC	
	lb/hr	T/yr	lb/hr	T/yr	lb/hr	T/yr	lb/hr	T/yr	lb/hr	T/yr
Pre-Project Potential to Emit	0.67	2.95	1.35	5.93	10.24	44.84	22.03	96.45	5.43	23.78
Post Project Potential to Emit	0.67	2.95	3.28	14.36	11.52	50.48	44.69	195.71	6.33	27.71
<b>Changes in Potential to Emit</b>	<b>0.00</b>	<b>0.00</b>	<b>1.93</b>	<b>8.43</b>	<b>1.28</b>	<b>5.64</b>	<b>22.66</b>	<b>99.26</b>	<b>0.90</b>	<b>3.93</b>

**Non-Carcinogenic TAP Emissions**

A summary of the estimated PTE for emissions increase of non-carcinogenic toxic air pollutants (TAP) is provided in the following table.

Pre- and post-project, as well as the change in, non-carcinogenic TAP emissions are presented in the following table:

**Table 7 PRE- AND POST PROJECT POTENTIAL TO EMIT FOR NON-CARCINOGENIC TOXIC AIR POLLUTANTS**

Non-Carcinogenic Toxic Air Pollutants	Pre-Project 24-hour Average Emissions Rates for Units at the Facility (lb/hr)	Post Project 24-hour Average Emissions Rates for Units at the Facility (lb/hr)	Change in 24-hour Average Emissions Rates for Units at the Facility (lb/hr)	Non-Carcinogenic Screening Emission Level (lb/hr)	Exceeds Screening Level? (Y/N)
1,2,4-Trichlorobenzene	1.943E-05	1.943E-05	0.0000	2.470E+00	No
1,2,4-Trimethylbenzene	3.200E-03	3.200E-03	0.0000	8.200E+00	No
1,2-Dichloroethene	2.148E-02	2.148E-02	0.0000	5.270E+01	No
1,2-Dichloropropane	1.142E-04	1.142E-04	0.0000	2.313E+01	No
1,3,5-Trimethylbenzene	1.943E-05	1.943E-05	0.0000	2.470E+00	No
2,2,4-Trimethylpentane	3.200E-03	3.200E-03	0.0000	8.200E+00	No
2-Butanone (Methyl ethyl ketone)	5.620E-03	5.620E-03	0.0000	3.930E+01	No
2-Hexanone (Methyl butyl ketone)	1.193E-03	1.193E-03	0.0000	1.330E+00	No
2-Methyl-2-propanethiol (tert-Butylmercaptan)	5.696E-04	5.696E-04	0.0000	1.200E-01	No
2-Propanol (Isopropyl alcohol)	2.102E-03	2.102E-03	0.0000	6.530E+01	No
Acetone	7.562E-03	7.562E-03	0.0000	1.190E+02	No
Acetonitrile	4.436E-04	4.436E-04	0.0000	4.470E+00	No
Bromomethane (Methyl bromide)	3.875E-05	3.875E-05	0.0000	1.270E+00	No
Carbon disulfide	2.175E-04	2.175E-04	0.0000	2.000E+00	No
Carbonyl sulfide (Carbon oxysulfide)	1.424E-04	1.424E-04	0.0000	2.700E-02	No
Chlorobenzene	1.059E-03	1.059E-03	0.0000	2.330E+01	No
Chloroethane (Ethyl chloride)	4.952E-03	4.952E-03	0.0000	1.760E+02	No
Cyclohexane	1.652E-03	1.652E-03	0.0000	7.000E+01	No
Cyclohexene	2.937E-05	2.937E-05	0.0000	6.770E+01	No
Cyclopentane	3.012E-05	3.012E-05	0.0000	1.147E+02	No
Dichlorobenzene	2.685E-03	2.685E-03	0.0000	3.000E+01	No
Ethyl acetate	3.219E-03	3.219E-03	0.0000	9.330E+01	No
Ethyl mercaptan (Ethanediol)	2.391E-04	2.391E-04	0.0000	6.700E-02	No
Ethylbenzene	1.003E-02	1.003E-02	0.0000	2.900E+01	No
Heptane	2.609E-03	2.609E-03	0.0000	1.090E+02	No
Hexane	5.192E-03	5.192E-03	0.0000	1.200E+01	No
Hydrogen sulfide	7.112E-02	1.987E-01	0.1276	9.330E-01	No
Isopropylbenzene (Cumene)	1.004E-03	1.004E-03	0.0000	1.630E+01	No
Mercury (total) assumes 0% control	9.512E-06	9.512E-06	0.0000	3.000E-03	No
Naphthalene	2.665E-04	2.665E-04	0.0000	3.330E+00	No
Nonane	5.907E-03	5.907E-03	0.0000	7.000E+01	No
Octane	2.398E-03	2.398E-03	0.0000	9.330E+01	No
Pentane	6.254E-03	6.254E-03	0.0000	1.180E+02	No
Styrene (Vinylbenzene)	8.319E-04	8.319E-04	0.0000	6.670E+00	No
Tetrahydrofuran (Diethylene oxide)	1.358E-03	1.358E-03	0.0000	3.930E+01	No
Toluene (Methyl benzene)	5.282E-02	5.282E-02	0.0000	2.500E+01	No
Tribromomethane (Bromoform)	6.090E-05	6.090E-05	0.0000	3.330E-01	No
Trichloroethylene (Trichloroethene)	2.114E-03	2.114E-03	0.0000	1.793E+01	No
Vinyl acetate	4.149E-04	4.149E-04	0.0000	2.3E+00	No
Xylenes (o-, m-, p-, mixtures)	1.904E-02	1.904E-02	0.0000	2.900E+01	No
Methylcyclohexane	2.462E-03	2.462E-03	0.0000	1.070E+02	No

All changes in emissions rates for non-carcinogenic TAP were below EL (screening emissions level) as a result of this project. Therefore, modeling is not required for any non-carcinogenic TAP because none of the 24-hour average non-carcinogenic screening ELs identified in IDAPA 58.01.01.585 were exceeded.

## Carcinogenic TAP Emissions

A summary of the estimated PTE for emissions increase of carcinogenic toxic air pollutants (TAP) is provided in the following table.

**Table 8 PRE- AND POST PROJECT POTENTIAL TO EMIT FOR CARCINOGENIC TOXIC AIR POLLUTANTS**

Carcinogenic Toxic Air Pollutants	Pre-Project Annual Average Emissions Rates for Units at the Facility (lb/hr)	Post Project Annual Average Emissions Rates for Units at the Facility (lb/hr)	Change in Annual Average Emissions Rates for Units at the Facility (lb/hr)	Carcinogenic Screening Emission Level (lb/hr)	Exceeds Screening Level? (Y/N)
1,1,2,2-Tetrachloroethane	1.745E-03	1.745E-03	0.0000	1.100E-05	Yes
1,1,2,3,4,4-Hexachloro-1,3-butadiene (Hexachlorobutadiene)	1.769E-05	1.769E-05	0.0000	3.300E-04	No
1,1,2-Trichloroethane	4.096E-04	4.096E-04	0.0000	4.200E-04	No
1,1-Dichloroethane	4.000E-03	4.000E-03	0.0000	2.500E-04	Yes
1,1-Dichloroethene (1,1-Dichloroethylene)	3.014E-04	3.014E-04	0.0000	1.300E-04	No
1,2-Dibromoethane (Ethylene dibromide)	1.752E-05	1.752E-05	0.0000	3.000E-05	No
1,2-Dichloroethane (Ethylene dichloride)	3.058E-04	3.058E-04	0.0000	2.500E-04	No
1,3-Butadiene (Vinyl ethylene)	1.745E-04	1.745E-04	0.0000	2.400E-05	Yes
1,4-Dioxane (1,4-Diethylene dioxide)	1.420E-05	1.420E-05	0.0000	4.800E-03	No
Acetaldehyde	6.626E-05	6.626E-05	0.0000	3.000E-03	No
Acrylonitrile	1.745E-03	1.745E-03	0.0000	9.800E-05	Yes
Carbon tetrachloride	2.385E-05	2.385E-05	0.0000	4.400E-04	No
Chloromethane (Methyl chloride)	2.394E-04	2.394E-04	0.0000	1.900E-03	No
Dichloromethane (Methylene chloride)	1.015E-02	1.015E-02	0.0000	1.600E-03	Yes
Formaldehyde	3.680E+00	4.025E+00	0.345	5.100E-04	Yes
Tetrachloroethylene (Perchloroethylene)	6.542E-03	6.542E-03	0.0000	1.300E-02	No
Trichloromethane (Chloroform)	1.105E-04	1.105E-04	0.0000	2.800E-04	No
Vinyl chloride (Chloroethene)	1.725E-03	1.725E-03	0.0000	9.400E-04	No

Some of the PTEs for carcinogenic TAP were exceeded as a result of this project. Therefore, modeling would ordinarily be required for those TAPs as the annual average carcinogenic screening ELs identified in IDAPA 58.01.01.586 were exceeded. However, per DEQ guidance:

*It is presumed that EPA evaluated the 187 HAPs when developing the emission standards for new, modified or existing stationary sources regulated by 40 CFR Part 63; therefore, no further review is required under IDAPA 58.01.01.210 for these pollutants for sources subject to 40 CFR Part 63, including sources specifically exempted within the subpart. The Toxic Air Pollutants that are not one of the 187 Hazardous Air Pollutants will still need to be evaluated for compliance with IDAPA 58.01.01.210.*

The facility is subject to 40 CFR 63 Subpart AAAA, which in turn requires the facility to comply with 40 CFR 60 Subpart WWW. 40 CFR 60 Subpart WWW contains requirements for flares and landfill gas combustion. IC Engine #1 and #2 are subject to 40 CFR 63 Subpart ZZZZ. Therefore all permitted equipment at the facility is subject to some part of 40 CFR Part 63. In addition, all TAPs exceeding screening ELs under Table 8 are also federally listed HAPs. Therefore, the above DEQ guidance is fulfilled and no modeling is required for any listed TAPs.

## Post Project HAP Emissions

Post project HAP emission were assumed equal to Uncontrolled Potential to Emit for HAPs (see Table 3 above). See Appendix A for a detailed presentation of the calculations of these emissions for each emissions unit.

## **Ambient Air Quality Impact Analyses**

As presented in the Modeling Memo in Appendix B, the estimated emission rates of SO<sub>2</sub>, NO<sub>x</sub>, and CO from this project exceeded applicable screening emission levels (EL) and published DEQ modeling thresholds established in IDAPA 58.01.01.585-586 and in the State of Idaho Air Quality Modeling Guideline<sup>1</sup>. Refer to the Emissions Inventories section for additional information concerning the emission inventories.

The applicant has demonstrated pre-construction compliance to DEQ's satisfaction that emissions from this facility will not cause or significantly contribute to a violation of any ambient air quality standard. The applicant has also demonstrated pre-construction compliance to DEQ's satisfaction that the emissions increase due to this permitting action will not exceed any acceptable ambient concentration (AAC) or acceptable ambient concentration for carcinogens (AACC) for toxic air pollutants (TAP). A summary of the Ambient Air Impact Analysis for TAP is provided in Appendix B.

An ambient air quality impact analyses document has been crafted by DEQ based on a review of the modeling analysis submitted in the application. That document is part of the final permit package for this permitting action (see Appendix B).

## **REGULATORY ANALYSIS**

### **Attainment Designation (40 CFR 81.313)**

The facility is located in Bannock County, which is designated as attainment or unclassifiable for PM<sub>2.5</sub>, PM<sub>10</sub>, SO<sub>2</sub>, NO<sub>2</sub>, CO, and Ozone. Refer to 40 CFR 81.313 for additional information.

### **Facility Classification**

The AIRS/AFS facility classification codes are as follows:

For HAPs (Hazardous Air Pollutants) Only:

- A = Use when any one HAP has permitted emissions > 10 T/yr or if the aggregate of all HAPS (Total HAPs) has permitted emissions > 25 T/yr.
- SM80 = Use if a synthetic minor (uncontrolled HAPs emissions are > 10 T/yr or if the aggregate of all uncontrolled HAPs (Total HAPs) emissions are > 25 T/yr and permitted emissions fall below applicable major source thresholds) and the permit sets limits > 8 T/yr of a single HAP or ≥ 20 T/yr of Total HAPs.
- SM = Use if a synthetic minor (uncontrolled HAPs emissions are > 10 T/yr or if the aggregate of all uncontrolled HAPs (Total HAPs) emissions are > 25 T/yr and permitted emissions fall below applicable major source thresholds) and the permit sets limits < 8 T/yr of a single HAP and/or < 20 T/yr of Total HAPs.
- B = Use when the potential to emit (i.e. uncontrolled emissions and permitted emissions) are below the 10 and 25 T/yr HAP major source thresholds.
- UNK = Class is unknown.

For All Other Pollutants:

- A = Use when permitted emissions of a pollutant are > 100 T/yr.
- SM80 = Use if a synthetic minor for the applicable pollutant (uncontrolled emissions are > 100 T/yr and permitted emissions fall below 100 T/yr) and permitted emissions of the pollutant are ≥ 80 T/yr.
- SM = Use if a synthetic minor for the applicable pollutant (uncontrolled emissions are > 100 T/yr and

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<sup>1</sup> Criteria pollutant thresholds in Table 2, State of Idaho Guideline for Performing Air Quality Impact Analyses, Doc ID AQ-011, September 2013.

permitted emissions fall below 100 T/yr) and permitted emissions of the pollutant are < 80 T/yr.

B = Use when the potential to emit (i.e. uncontrolled emissions and permitted emissions) are below the 100 T/yr major source threshold.

UNK = Class is unknown.

**Table 9 REGULATED AIR POLLUTANT FACILITY CLASSIFICATION**

Pollutant	Uncontrolled PTE (T/yr)	Permitted PTE (T/yr)	Major Source Thresholds (T/yr)	AIRS/AFS Classification
PM	2.95	2.95	100	B
PM <sub>10</sub>	2.95	2.95	100	B
PM <sub>2.5</sub>	2.95	2.95	100	B
SO <sub>2</sub>	14.36	14.36	100	B
NO <sub>x</sub>	50.48	50.48	100	B
CO	195.71	195.71	100	A
VOC	27.71	27.71	100	B
HAP (single)	17.63	17.63	10	A
Total HAPs	18.15	18.15	25	B

**Permit to Construct (IDAPA 58.01.01.201)**

IDAPA 58.01.01.201 ..... Permit to Construct Required

The permittee has requested that a PTC be issued to the facility for the modified emissions sources. Therefore, a permit to construct is required to be issued in accordance with IDAPA 58.01.01.220. This permitting action was processed in accordance with the procedures of IDAPA 58.01.01.200-228.

**Tier II Operating Permit (IDAPA 58.01.01.401)**

IDAPA 58.01.01.401 ..... Tier II Operating Permit

The application was submitted for a permit to construct (refer to the Permit to Construct section), and an optional Tier II operating permit has not been requested. Therefore, the procedures of IDAPA 58.01.01.400–410 were not applicable to this permitting action.

**Visible Emissions (IDAPA 58.01.01.625)**

IDAPA 58.01.01.625 ..... Visible Emissions

The sources of PM emissions at this facility are subject to the State of Idaho visible emissions standard of 20% opacity. This requirement is assured under Facility-Wide Conditions under the facility’s Tier 1 Permit.

**Rules for Control of Incinerators (IDAPA 58.01.01.785)**

IDAPA 58.01.01.785..... Rules for Control of Incinerators

This Rule requires that no person shall allow, suffer, cause or permit any incinerator to discharge more than two-tenths (0.2) pounds of particulates per one hundred (100) pounds of refuse burned. Per IDAPA 58.01.01.006, Incinerator is defined as “Any source consisting of a furnace and all appurtenances thereto designed for the destruction of refuse by burning. “Open Burning” is not considered incineration. For purposes of these rules, the destruction of any combustible liquid or gaseous material by burning in a flare stack shall be considered incineration.” Therefore, the requirements of this Rule apply to flare at this facility.

For the flare, the PM emissions rate is calculated as follows:

As presented previously, the Applicant estimates particulate emissions from the flare at 0.81 tons-PM<sub>10</sub> per year. In addition, LandGem estimates the landfill gas produced in the maximum emissions year for Cells 2 and 4 combined at 9,059 Mg/yr (5,996 Mg/yr from Cell 4 and 3,063 Mg/yr from Cell 2). The calculation was made based on all of the landfill gas being combusted in the flare.

- PM emissions rate = 0.81 tons-PM<sub>10</sub>/yr x 2,000 lb/ton x 1 yr/9,059 Mg x 1 Mg/2,205 lb ÷ 100 lb
- PM emissions rate = 8.1E-07 lb-PM<sub>10</sub> per 100 pounds landfill gas combusted

Assuming PM is 50% PM<sub>10</sub> means that PM emissions will be 1.62E-06 lb-PM/100 lb-landfill gas combusted (8.1E-07 lb-PM<sub>10</sub>/100 lb-landfill gas combusted ÷ 0.5 lb-PM<sub>10</sub>/lb-PM), which is much less than the Rule requirement of 0.2 lb-PM/100 lb-landfill gas combusted. Therefore, compliance with this requirement has been demonstrated.

**Emissions Guidelines for Municipal Solid Waste Landfills that Commenced Construction, Reconstruction, or Modification On or After May 30, 1991 (IDAPA 58.01.01.859)**

IDAPA 58.01.01.859.....Emissions Guidelines for Municipal Solid Waste Landfills that Commenced Construction, Reconstruction, or Modification On or After May 30, 1991

Section 01 states that for all owners or operators of each small or large municipal solid waste landfills in any one (1) of the following categories are subject to Section 859:

- a. Landfills constructed after May 30, 1991;
- b. Existing landfills with modifications after May 30, 1991; or
- c. Landfills that closed after November 8, 1987 with modifications after May 30, 1991.

The definitions of this Rule states that “Modification” means an action that results in 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. According to the previous Statement of Basis this landfill has been modified after May 30, 1991.

Section 03 states that all owners or operators of landfills subject to Section 859 must comply with 40 CFR Part 60, Subpart WWW, as amended by 63 Fed. Reg. 32,743-53 (June 16, 1998) and 64 Fed. Reg. 9,257- 62 (February 24, 1999) and incorporated by reference into these rules at Section 107. Where “Administrator” or “EPA” appears in 40 CFR Part 60, “Department” shall be substituted, except in any section of 40 CFR Part 60 for which a federal rule or delegation specifically indicates that authority will not be delegated to the state. The following NSPS Applicability Section addresses the requirements of Subpart WWW.

Sections 04 and 5 states that the operators of landfills subject to this Rule must apply for a Federal Title V permit and submit Non-Methane Organic Compound reports. The Applicant has already complied with these Sections of the Rule.

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

IDAPA 58.01.01.301 ..... Requirement to Obtain Tier I Operating Permit

This facility is a municipal solid waste landfill that is required to obtain, and has obtained, a Federal Title V air permit (T1-2018.0007). Therefore, the facility is subject to requirements of IDAPA 58.01.01.300.

Post project facility-wide emissions from this facility have a potential to emit greater than 100 tons per year for CO or 10 tons per year for any one HAP (Formaldehyde) as demonstrated previously in the Emissions Inventories Section of this analysis. Therefore, this facility is classified as a major facility, as defined in IDAPA 58.01.01.008.10.

**PSD Classification (40 CFR 52.21)**

40 CFR 52.21 ..... Prevention of Significant Deterioration of Air Quality

The facility is not a major stationary source as defined in 40 CFR 52.21(b)(1), nor is it undergoing any physical change at a stationary source not otherwise qualifying under paragraph 40 CFR 52.21(b)(1) as a major stationary source, that would constitute a major stationary source by itself as defined in 40 CFR 52. Therefore, in accordance with 40 CFR 52.21(a)(2), PSD requirements are not applicable to this permitting action. The facility is not a designated facility as defined in 40 CFR 52.21(b)(1)(i)(a), and does not have facility-wide emissions of any criteria pollutant that exceed 250 T/yr.

**NSPS Applicability (40 CFR 60)**

Because the facility has a municipal solid waste landfill with spark ignited IC engines the following NSPS requirements apply to this facility:

- 40 CFR 60, Subpart Cc - Emission Guidelines and Compliance Times for Municipal Solid Waste Landfills
- 40 CFR 60, Subpart WWW - Standards of Performance for Municipal Solid Waste Landfills
- 40 CFR 60, Subpart JJJJ – Standards of Performance for Stationary Spark Ignition Internal Combustion Engines

**40 CFR 60, Subpart Cc - Emission Guidelines and Compliance Times for Municipal Solid Waste Landfills**

This section applies and consists primarily of instructions to the state for writing rules for MSW landfills.

**40 CFR 60, Subpart WWW - Standards of Performance for Municipal Solid Waste Landfills**

Fort Hall Mine Road Landfill commenced modification after the applicability date of May 30, 1991 with the commencement of construction of Cell 4 in 2007. Therefore, per 40 CFR 60.750, this Subpart WWW applies to the facility.

See Appendix D for a complete breakdown of applicable 40 CFR 60 Subpart WWW regulations.

**40 CFR 60, Subpart JJJJ - Standards of Performance for Stationary Spark Ignition Internal Combustion Engines**

IC Engine #1 commenced construction after applicability date of June 12, 2006 and manufactured after July 1, 2007 while also having a maximum engine power rating greater than or equal to 500 HP. Therefore, per 40 CFR 60.4230, this Subpart JJJJ applies to IC Engine #1

IC Engine #2 commenced construction after appropriate applicability dates while also having a maximum engine power rating greater than or equal to 500 HP. Therefore, per 40 CFR 60.4230, this Subpart JJJJ applies to IC Engine #2.

See Appendix D for a complete breakdown of applicable 40 CFR 60 Subpart JJJJ regulations.

**NESHAP Applicability (40 CFR 61)**

The facility is not subject to any NESHAP requirements in 40 CFR 61.

**MACT/GACT Applicability (40 CFR 63)**

Because the facility has a municipal solid waste landfill with spark ignited IC engines the following NESHAP (MACT) requirements apply (or have conditional applicability) to this facility:

- 40 CFR 63, Subpart AAAA - National Emission Standards for Hazardous Air Pollutants: Municipal Solid Waste Landfills
- 40 CFR 63, Subpart ZZZZ - National Emission Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines

#### **40 CFR 63, Subpart AAAA - National Emission Standards for Hazardous Air Pollutants: Municipal Solid Waste Landfills**

Fort Hall Mine Road Landfill accepted waste after the applicability date of November 8, 1987 and is designated as a HAPs major source as defined in 40 CFR 63.2 (emissions of formaldehyde are greater than 10 tons per year). Therefore, per 40 CFR 63.1935, this Subpart AAAA applies to the facility.

See Appendix D for a complete breakdown of applicable 40 CFR 63 Subpart AAAA regulations.

#### **40 CFR 63, Subpart ZZZZ - National Emission Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines**

IC Engine #1 and IC Engine #2 commenced construction after *new stationary RICE* applicability date of December 19, 2002 while also having a maximum engine power rating greater than or equal to 500 HP. Therefore, per 40 CFR 63.6585 and 63.6590, this Subpart ZZZZ applies to IC Engine #1 and IC Engine #2.

See Appendix D for a complete breakdown of applicable 40 CFR 63 Subpart ZZZZ regulations.

#### ***Permit Conditions Review***

This section describes only those permit conditions that have been added, revised, modified or deleted as a result of this permitting action.

##### ***PERMIT SCOPE***

Permit Condition 1.1 was updated to describe the purpose of the permitting project.

Permit Condition 1.3 explains which previous permit for the facility is being replaced as a result of this project.

##### ***IC ENGINE AND FLARE***

Permit Condition 3.3 was updated to include the updated emission limits for IC Engines and Flare (see Emissions Inventory section).

#### **PUBLIC REVIEW**

##### ***Public Comment Period***

A public comment period was made available to the public in accordance with IDAPA 58.01.01.209.05.c. During this time, comments were not submitted in response to DEQ's proposed action. Refer to the chronology for public comment period dates.

## APPENDIX A – EMISSIONS INVENTORIES

<b>Source</b>	<b>PRE</b>	<b>Heat Capacity ( MM Btu/hr)</b>	<b>GHG (tpy CO2e)</b>
<b>F1</b>	Existing Open Flare	12.420	6438
<b>E1</b>	Existing Cat 3520C Engine	14.681	19251
<b>E2</b>	Existing Cat 3520C Engine	14.681	19251
	<b>TOTAL</b>	41.782	44939



# Source F1 Existing FHMLR Open LFG Flare CRITERIA POLLUTANT EMISSION RATES

Combustion Source Characteristics				Effective Stack Data <sup>g</sup>			Design as of 20200205	
Flare Manufacturer	LFG Specialties			Effective Stack Ht (ft)(m)	42.6	13.0	Plot Plan Key " T "	
Model	PCFT1034110			Effective Stack Dia(ft)(m)	1.92	0.59		
Actual Stack Dia (in)(m)	10	0.76						
Actual Height (ft)(m)	34	10		Avg Exit Gas Temp (°F) default(K)	1832		1273	
Input Heat Capacity(Btu/hr) default(HL=) <sup>e</sup>	11,138,000	0.55		Exit Gas Moisture Content				
Heat Release Rate(cal/sec) (J/sec)	7.80E+05	3.26E+06		Wet Actual Flow (wacfm)(m3/s)			11233 5.30	
Fuel	LFG			Wet Standard Flow Rate (wscfm)(sm3/s)				
Max Year Fuel Available				Dry Standard Flow Rate (dscfm)(dsm3/s)				
Heating Value (BTU/scf)	450			Eff Stack Velocity default(m/s) calc(m/s)			20.00 19.70	
Fuel Consumption (scf/hr) (scfm LFG)	24,751	413		F <sub>d</sub> (dscf stack gas/BTU)				
100% of LFG collection	10,920	scf CH4/hr		F <sub>w</sub> (wscf stack gas/BTU)				
	1020	CH4 Btu/scf						
Process Characteristics				Site Information				
Total PM Emission Rate (lb/hr)	0.186			Site Barometric Pressure (mm Hg)			655.3	
PM2.5 Emission Rate (lb/hr)	0.186			Actual Base Site Grade			4980 ft MSL 1517.9 m MSL	
% Methane	50%							
Actual Hours of Operation (hr/yr)	8,760						UTM East UTM North	
Annual Availability	100%			Point Source Coordinates (m)			387756.9 4737543.0	

Criteria Pollutants									
Pollutant	Pollutant Source	Emission Factor <sup>a,b</sup>	Emission Factor Unit	Potential Emissions (lb/hr)	Potential Emissions (TPY)	Potential Emissions (g/s)	Significant Level <sup>c</sup> (TPY)	Below Regulatory Concern? <sup>d</sup>	Significant Contribution? <sup>c</sup>
PM <sub>10</sub> <sup>b</sup>	LFG Combustion	15	lb/10 <sup>6</sup> dscf CH4	0.19	0.81	0.023	15	yes	no
PM <sub>2.5</sub> <sup>b</sup>	LFG Combustion	15	lb/10 <sup>6</sup> dscf CH4	0.19	0.81	0.023	15	yes	no
SO <sub>2</sub> <sup>b</sup>	LFG Combustion	See SO2 calcs tab		0.90	3.95	0.114	40	yes	no
NO <sub>2</sub>	LFG Combustion	P2009.0146 T 3.2	lb/hr	0.58	2.52	0.072	40	yes	no
CO	LFG Combustion	P2009.0146 T 3.2	lb/hr	0.67	2.93	0.084	100	yes	no
VOC	LFG Combustion	P2009.0146 T 3.2	lb/hr	0.19	0.83	0.024	40	yes	no
Lead <sup>i</sup>	LFG Combustion	P2009.0146 T 3.2	NA	0.00	0.00	0.000	0.6	yes	no
				4.31E-01	NO2 Annual	5.43E-02			

Non-Criteria Pollutants with Significant Threshold									
Pollutant	Pollutant Source	Emission Factor <sup>a</sup>	Emission Factor Unit	Potential Emissions (lb/hr)	Potential Emissions (TPY)	Potential Emissions (g/s)	Significant Level <sup>c</sup> (TPY)	Below Regulatory Concern? <sup>d</sup>	Significant Contribution? <sup>c</sup>
PM	LFG Combustion	15	lb/10 <sup>6</sup> dscf CH4	0.19	0.81	0.023	25	yes	no

Other Pollutants									
Pollutant	Pollutant Source	Emission Factor <sup>h</sup>	Emission Factor Unit	Potential Emissions (lb/hr)	Potential Emissions (TPY)	Potential Emissions (g/s)	CO2e Multiplier	Potential Emissions (TPY CO2e)	
TOC	LFG Combustion	11	lb/10 <sup>6</sup> scf CH4	0.120	0.526	1.513E-02	0.0	0.000	
Methane	LFG Combustion	2.3	lb/10 <sup>6</sup> scf CH4	0.025	0.110	3.165E-03	25.0	2.750	
CO <sub>2</sub>	LFG Combustion	120,000	lb/10 <sup>6</sup> scf CH4	1310.353	5739.346	1.651E+02	1.0	5739.346	
N <sub>2</sub> O	LFG Combustion	2.2	lb/10 <sup>6</sup> scf CH4	0.024	0.105	3.027E-03	298.0	31.356	
								5773.452	

**Process Weight Rule - Not Applicable<sup>e</sup>**

PM Grain Loading Standard <sup>f</sup>									
Pollutant	Pollutant Source	Potential Emissions (lb/hr)	Potential Emissions (gr/dscf)	Allowable Emissions (gr/dscf)	Meets Standard?	gr/hr	Stack Flow Rate scf/hr	Assumes O2 at	
PM	LFG Combustion	0.186	0.0003	0.015	yes	1299.4333	4135168	12.00%	

- Notes:
- (a) Emissions for existing sources are maximum permitted levels in the current P-2009.0146 Table 3.2
  - (b) Emission factors for PM-10 & PM-2.5 from AP-42 Table 2.4-4 [ Flare or IC engine] Draft 10/08, per DEQ. 100% of PM emissions assumed to be PM-2.5
  - (b) Emission factors for SO2 from AP-42 Ch. 2.4 pg7-10, using 300 ppmv H2S (20% more than the trended projection of 250 ppm in 2033)
  - (c) IDAPA 58.01.01.006.106
  - (d) IDAPA 58.01.01.221.01 (less than ten percent (10%) of the significant emission rates) = No PTC is Required for this source
  - (e) IDAPA 58.01.01.701.02
  - (f) IDAPA 58.01.01.676, PM stack not collected; however, PM grain loading includes LFG consumption times 15x to include excess air for combustion.
  - (g) Flare F1 stack parameters from data and formulae in EPA AERSCREEN, SCREEN3 User Manual Guidance
  - Temp & Exhaust Velocity.
  - (h) Emission factors for Other Pollutants from AP-42 Table 1.4-2 - Supplement D , July 1998
  - (i) Lead not a constituent found in landfill gas. NA - Not applicable.
  - (j) AERMAP's default base elevation for the flare is 1510.95 m. This receptor is set to the actual base elevation of 1517.9 m for modeling.



Source E1 FHMRL Cat 3520C @100% Power CRITERIA POLLUTANT EMISSION RATES							AP Handk Nomograms		
<b>Combustion Source Characteristics</b>			<b>Stack Data</b>		Plot Plan Key "T"		6.06 m3/sec		
Engine	Caterpillar		Stack Height (ft)	31	9.45	m	Cat 3520 sheet wet		
Model	3520C		Stack Diameter (ft)	1.33	0.41	m	5.39 m3/sec		
Input Heat Capacity (BTU/hr)(annual bhp-hr)	14,681,000	19,412,160	Exit Gas Temperature (°F) <sup>h</sup>	850	727.6	K	205.90 wscf/sec		
Fuel	Landfill Gas (scfm)	544	Exit Gas Moisture Content				5.83 m3/sec		
Heating Value (BTU/scf) (Btu/bhphr)	450	6625	Wet Actual Flow Rate (wacf/min)		12354	120.11	m3/min		
Fuel Consumption (scf/hr) [m3/hr]	32,624	923.8	Wet Standard Flow Rate (wscf/min)			2.00	m3/sec <sup>e</sup>		
Max Engine Power	2216		Method 19 Dry Std Flow (dscf/min)		4244		m3/sec <sup>e</sup>		
<b>Process Characteristics</b>			Stack Velocity (m/s)		15.51				
	2		25 Fd (dscf stack gas/BTU)				Method 19 dscf/hr	20170330	
m3 LFG used/yr	3	8,092,675	1 Fw (wscf stack gas/BTU)				234074	Stack Test	
		0.660731558					3901	110.47	m3/min
Hours of Operation (hr/yr)	8,760		<b>Site Information</b>				2.03	1.84	m3/sec
Annual Availability	100%		Site Barometric Pressure (mm Hg)	655.3					
% Methane	50%	Actual Base Elevation <sup>m</sup>	Site Grade	4978.5	ft MSL	1517.45	m MSL		
Destruction Efficiency	0.95								
						UTM East	UTM North		
			Point Source Coordinates (m)	387786.1	4737579.3				Design as of 20200205
<b>Criteria Pollutants</b>									
Pollutant	Pollutant Source	Emission Factor <sup>a,b</sup>	Emission Factor Unit	Potential Emissions (lb/hr)	Potential Emissions (TPY)	Potential Emissions (g/s)	Significant Level <sup>f</sup> (TPY)	Below Regulatory Concern <sup>g</sup>	Significant Contribution <sup>h</sup>
PM <sub>10</sub>	LFG Combustion	15	lb/10 <sup>6</sup> dscf CH <sub>4</sub>	0.24	1.07	3.083E-02	15	yes	no
PM <sub>2.5</sub>	LFG Combustion	15	lb/10 <sup>6</sup> dscf CH <sub>4</sub>	0.24	1.07	3.083E-02	15	yes	no
SO <sub>2</sub>	LFG Combustion	see SO <sub>2</sub> calcs tab		1.15	5.04	1.452E-01	40	no	no
NO <sub>x</sub> <sup>i</sup>	LFG Combustion	1.120	g/hp-hr	5.47	23.98	6.897E-01	40	no	no
CO <sup>j</sup>	LFG Combustion	4.505	g/hp-hr	22.01	96.39	2.773E+00	100	no	no
VOC <sup>k</sup>	LFG Combustion	0.628	g/hp-hr	3.07	13.44	3.866E-01	40	no	no
Lead <sup>l</sup>	LFG Combustion	P2009.0146 T 3.2	NA	0.00	0.00	0.000E+00	0.6	yes	no
				5.47E+00	NO <sub>2</sub> Annual	6.90E-01			
				2.45E-01	PM <sub>25</sub> Ann	3.08E-02			
<b>Non-Criteria Pollutants with Significant Threshold</b>									
Pollutant	Pollutant Source	Emission Factor <sup>a</sup>	Emission Factor Unit	Potential Emissions (lb/hr)	Potential Emissions (TPY)	Potential Emissions (g/s)	Significant Level <sup>f</sup> (TPY)	Below Regulatory Concern <sup>g</sup>	Significant Contribution <sup>h</sup>
PM	LFG Combustion	15	lb/10 <sup>6</sup> dscf CH <sub>4</sub>	0.245	1.07	3.083E-02	25	yes	no
<b>Other Pollutants</b>									
Pollutant	Pollutant Source	Emission Factor <sup>j,k</sup>	Emission Factor Unit	Potential Emissions (lb/hr)	Potential Emissions (TPY)	Potential Emissions (g/s)	CO <sub>2</sub> e Multiplier	Emissions (TPY CO <sub>2</sub> e)	
TOC <sup>j</sup>	LFG Combustion	1.47	lb/10 <sup>6</sup> Btu	2.16E+01	94.525	2.719E+00	0.0	0.000	
Methane <sup>j</sup>	LFG Combustion	1.25	lb/10 <sup>6</sup> Btu	1.84E+01	80.378	2.312E+00	25.0	2009.462	
CO <sub>2</sub> <sup>k</sup>	LFG Combustion	120,000	lb/10 <sup>6</sup> scf	3.91E+03	17147.408	4.933E+02	1.0	17147.408	
N <sub>2</sub> O <sup>k</sup>	LFG Combustion	2.2	lb/10 <sup>6</sup> scf	7.18E-02	0.314	9.043E-03	298.0	93.682	
								19250.552	
<b>Process Weight Rule - Not Applicable<sup>e</sup></b>									
<b>PM Grain Loading Standard<sup>f</sup></b>									
Pollutant	Pollutant Source	Potential Emissions (lb/hr)	Potential Emissions (gr/dscf)	Allowable Emissions (gr/dscf)	Meets Standard?	gr/hr	20170330 Stack dscf/hr	20170330 Stack O <sub>2</sub>	
PM	LFG Combustion	0.245	0.0063	0.015	yes	1712.7833	234074	8.36%	
Notes:									
(a) Engine E1 and E2 emissions for NO <sub>2</sub> , CO and VOC in g/hp-hr use Mar 30, 2017 E1 stack test x1.15 compliance margin									
(b) Emission factors for PM-10 & PM-2.5 from AP-42 Table 2.4-4 [Flare or IC engine], per DEQ									
(b) Emission factors for SO <sub>2</sub> from AP-42 Table 2.4 pp7-10, using 120 ppmv H <sub>2</sub> S (35% above upper sampled LFG values)									
(c) IDAPA 58.01.01.006.106									
(d) IDAPA 58.01.01.221.01 (less than ten percent (10%) of the significant emission rates) = No PTC is Required for this source									
(e) IDAPA 58.01.01.701.02									
(f) IDAPA 58.01.01.676, PM stack not collected; however, PM grain loading uses Mar 30, 2017 E1 stack test data to estimate this emission level.									
(g) Method 19 Stack volumetric flow from Mar 30, 2017 E1 stack test 15,944 dscf/ MMBtu/hr, times Input Heat Capacity of 14.681 MMBtu/hr =234,074 ft <sup>3</sup> /hr= 1.84 m3/sec Applied 1.1 uncertainty factor = 2.0 m3/sec									
(h) Engine Exhaust Exit Temp = 892 F at Mar 30, 2017 E1 stack test, reduced to 850 F for actual stack temp as conservative engineering estimate									
(i) Emissions estimates based on Engine Manufacturer's emissions ratings									
(j) Uncontrolled Emission Factors for 4 Stroke LB Engines from AP-42 Table 3.2-2 - Supplement F, August 2000									
(k) Emission factors for Criteria Pollutants and Greenhouse Gases from AP-42 Table 1.4-2 - Supplement D, July 1998									
(l) Lead not a constituent found in landfill gas. NA = Not applicable.									
(m) AERMAP's default base elevation for the E1 is 1528.24 m. This receptor is set to the actual base elevation of 1517.45 m for modeling.									

## Source E1 FHMRL Cat 3520C at 100% Power TAPs EMISSION RATES

Combustion Source Characteristics			Stack Data		Plot Plan Key "T"	
Engine	Caterpillar		Stack Height (ft)(m)	31	9.4488	
Model	3520C		Stack Diameter (ft)(m)	1.33	0.41	
Input Heat Capacity (BTU/hr) (annual bhp-hr)	14,681,000	19,412,160	Exit Gas Temp (°F)(K)	850	728	
Fuel	Landfill Gas scfm	544	Exit Gas Moisture Content			
Heating Value (BTU/scf) (Btu/bhphr)	450	6625	Wet Actual Flow Rate (wacf/min)			
Fuel Consumption (scf/hr) [m3/hr]	32,624	923.8	Wet Standard Flow Rate	m3/sec	2.00	
Max Engine Power	2216		Dry Standard Flow Rate (dscf/min)		4244	
Process Characteristics			Stack Velocity (m/s)		15.51	
	C	D	25 Fd (dscf stack gas/BTU)			
	2		1 Fw (wscf stack gas/BTU)			
	m3 LFG used/yr	3	8,092,675			
Hours of Operation (hr/yr)	8,760		Site Information		387786	4737579
Annual Availability	100%		Site Barometric Pressure (mm Hg)		655.3	
	% Methane	0.50	Site Grade		4978.5 ft MSL	
Destruction Efficiency	0.95				1517.45 m MSL	
			<i>Design as of 20200205</i>			

### Idaho Toxic Air Pollutants -- Non-Carcinogenic

Pollutant	Concentration in LFG [ppmv]	LFG Flow @25°C, 1 atm (m3/yr)	PTE [95% control] (lb/hr)	Potential Emissions (g/s)	Emission Limit <sup>b</sup> (lb/hr)	Modeling Required? <sup>c</sup> [0= No]
VOC	8.35E+02	8.760E-03	3.88E-07	4.89E-08	n/a	n/a
1,1,1-Trichloroethane c	2.43E-01	3.933E+00	2.70E-04	3.40E-05	unk	0
1,2,4-Trichlorobenzene c	5.51E-03	8.918E-02	8.32E-06	1.05E-06	2.470E+00	0
1,2,4-Trimethylbenzene	1.37E+00	2.217E+01	1.37E-03	1.73E-04	8.200E+00	0
1,2-Dichloroethane	1.14E+01	1.845E+02	9.20E-03	1.16E-03	5.270E+01	0
1,2-Dichloropropane c	5.20E-02	8.416E+01	4.89E-05	6.16E-06	2.313E+01	0
1,3,5-Trimethylbenzene	5.51E-03	8.918E-02	8.32E-06	1.05E-06	2.470E+00	0
2,2,4-Trimethylpentane c	1.37E+00	2.217E+01	1.37E-03	1.73E-04	8.200E+00	0
2-Butanone (Methyl ethyl ketone) c	4.01E+00	6.490E+01	2.41E-03	3.03E-04	3.930E+01	0
2-Hexanone (Methyl butyl ketone)	6.13E-01	9.922E+00	5.11E-04	6.44E-05	1.330E+00	0
2-Methyl-2-propanethiol (tert-Butylmercaptan)	3.25E-01	5.260E+00	2.44E-04	3.07E-05	1.200E-01	0
2-Propanol (Isopropyl alcohol)	1.80E+00	2.913E+01	9.00E-04	1.13E-04	6.530E+01	0
4-Methyl-2-pentanone (MIBK) c	8.83E-01	1.429E+01	7.36E-04	9.28E-05	unk	0
Acetone	6.70E+00	1.084E+02	3.24E-03	4.08E-04	1.190E+02	0
Acetonitrile c	5.56E-01	8.999E+00	1.90E-04	2.39E-05	4.470E+00	0
Benzyl chloride c	1.81E-02	2.930E-01	1.91E-05	2.40E-06	unk	0
Bromomethane (Methyl bromide) c	2.10E-02	3.399E-01	1.66E-05	2.09E-06	1.270E+00	0
Carbon disulfide c	1.47E-01	2.379E+00	9.32E-05	1.17E-05	2.000E+00	0
Carbonyl sulfide (Carbon oxysulfide) c	1.22E-01	1.975E+00	6.10E-05	7.69E-06	2.700E-02	0
Chlorobenzene	4.84E-01	7.834E+00	4.53E-04	5.71E-05	2.330E+01	0
Chlorodifluoromethane (Freon 22) c	7.96E-01	1.288E+01	5.73E-04	7.22E-05	unk	0
Chloroethane (Ethyl chloride) c	3.95E+00	6.393E+01	2.12E-03	2.67E-04	1.760E+02	0
Cyclohexane	1.01E+00	1.635E+01	7.08E-04	8.92E-05	7.000E+01	0
Cyclohexene	1.84E-02	2.978E-01	1.26E-05	1.59E-06	6.770E+01	0
Cyclopentane	2.21E-02	3.577E-01	1.29E-05	1.63E-06	1.147E+02	0
Dichlorobenzene c,e	9.40E-01	1.521E+01	1.15E-03	1.45E-04	3.000E+01	0
Ethyl acetate	1.88E+00	3.043E+01	1.38E-03	1.74E-04	9.330E+01	0
Ethyl mercaptan (Ethanediol)	1.98E-01	3.205E+00	1.02E-04	1.29E-05	6.700E-02	0
Ethylbenzene c	4.86E+00	7.866E+01	4.30E-03	5.41E-04	2.900E+01	0
Heptane	1.34E+00	2.169E+01	1.12E-03	1.41E-04	1.090E+02	0
Hexane c	3.10E+00	5.017E+01	2.22E-03	2.80E-04	1.200E+01	0
Hydrogen sulfide (at source 300 ppmv; 100% to SO2 95% control)	3.00E+02	4.856E+03	8.51E-02	1.07E-02	0.933	0
Isopropylbenzene (Cumene) c	4.30E-01	6.960E+00	4.30E-04	5.42E-05	1.630E+01	0
Mercury (total) c ** Note: Assumes control =0% **	1.22E-04	1.975E-03	4.07E-06	5.13E-07	3.000E-03	0
Naphthalene c	1.07E-01	1.732E+00	1.14E-04	1.44E-05	3.330E+00	0
Nonane	2.37E+00	3.836E+01	2.53E-03	3.19E-04	7.000E+01	0
Octane	1.08E+00	1.748E+01	1.03E-03	1.29E-04	9.330E+01	0
Pentane	4.46E+00	7.219E+01	2.68E-03	3.37E-04	1.180E+02	0
Styrene (Vinylbenzene) c	4.11E-01	6.652E+00	3.56E-04	4.49E-05	6.670E+00	0
Tetrahydrofuran (Diethylene oxide)	9.69E-01	1.568E+01	5.82E-04	7.33E-05	3.930E+01	0
Toluene (Methyl benzene) c	2.95E+01	4.775E+02	2.26E-02	2.85E-03	2.500E+01	0
Tribromomethane (Bromoform) c	1.24E-02	2.007E-01	2.61E-05	3.29E-06	3.330E-01	0
Trichloroethylene (Trichloroethene) c	8.28E-01	1.340E+01	9.06E-04	1.14E-04	1.793E+01	0
Vinyl acetate c	2.48E-01	4.014E+00	1.78E-04	2.24E-05	unk	0
Xylenes (o-, m-, p-, mixtures)	9.23E+00	1.494E+02	8.16E-03	1.03E-03	2.900E+01	0
Methylcyclohexane	1.29E+00	2.088E+01	1.05E-03	1.33E-04	1.070E+02	0

### Source E1 Existing FHMRL Engine #1 Idaho Toxic Air Pollutants -- Carcinogenic

Pollutant	Concentration in LFG [ppmv]	LFG Flow @25°C, 1 atm (m3/yr)	PTE [95% control] (lb/hr)	Potential Emissions (g/s)	Emission Limit <sup>b</sup> (lb/hr)	Modeling Required? <sup>c</sup> [0= No]
1,1,2,2-Tetrachloroethane c	5.35E-01	8.659E+00	7.47E-04	9.42E-05	1.100E-05	1
1,1,2,3,4,4-Hexachloro-1,3-butadiene (Hexachlorobutadiene) c	3.49E-03	5.649E-02	7.58E-06	9.54E-07	3.300E-04	0
1,1,2-Trichloroethane c	1.58E-01	2.557E+00	1.75E-04	2.21E-05	4.200E-04	0
1,1-Dichloroethane c	2.08E+00	3.367E+01	1.71E-03	2.16E-04	2.500E-04	1
1,1-Dichloroethane (1,1-Dichloroethylene) c	1.60E-01	2.590E+00	1.29E-04	1.63E-05	1.300E-04	0
1,2-Dibromoethane (Ethylene dibromide) c	4.80E-03	7.769E-02	7.51E-06	9.46E-07	3.000E-05	0
1,2-Dichloroethane (Ethylene dichloride) c	1.59E-01	2.573E+00	1.31E-04	1.65E-05	2.500E-04	0
1,3-Butadiene (Vinyl ethylene) c	1.66E-01	2.687E+00	7.47E-05	9.42E-06	2.400E-05	1
1,4-Dioxane (1,4-Diethylene dioxide) c	8.29E-03	1.342E-01	6.08E-06	7.66E-07	4.800E-03	0
Acetaldehyde c	7.74E-02	1.253E+00	2.84E-05	3.58E-06	3.000E-03	0
Acrylonitrile c,d	BDL	0.000E+00	0.00E+00	0.00E+00	9.800E-05	0
Benzene c	2.40E+00	3.884E+01	1.56E-03	1.97E-04	8.000E-04	1
Carbon tetrachloride c	7.98E-03	1.292E-01	1.02E-05	1.29E-06	4.400E-04	0
Chloromethane (Methyl chloride) c	2.44E-01	3.949E+00	1.03E-04	1.29E-05	1.900E-03	0
Dichloromethane (Methylene chloride) c	6.15E+00	9.954E+01	4.35E-03	5.48E-04	1.600E-03	1
Formaldehyde c **Note: Cat 3520C Spec = 8.82 tpy **	4.03E+02	6.515E+03	2.01E+00	2.54E-01	5.100E-04	1
Tetrachloroethylene (Perchloroethylene) c	2.03E+00	3.286E+01	2.80E-03	3.53E-04	1.300E-02	0
Trichloroethylene (Trichloroethene) c	8.28E-01	1.340E+01	9.06E-04	1.14E-04	5.100E-04	1
Trichloromethane (Chloroform) c	7.08E-02	1.146E+00	7.04E-05	8.86E-06	2.800E-04	0
Vinyl chloride (Chloroethene) c	1.42E+00	2.298E+01	7.39E-04	9.31E-05	9.400E-04	0
			9.58E+00	TOTAL TAPs (tpy)		

Source E2 FHMRL Cat 3520C @100% Power CRITERIA POLLUTANT EMISSION RATES										AP Handk Nomograms	
<b>Combustion Source Characteristics</b>				<b>Stack Data</b>		Plot Plan Key "T"				6.06 m3/sec	
Engine	Caterpillar			Stack Height (ft)	31	9.45	m			Cat 3520 sheet wet	
Model	3520C			Stack Diameter (ft)	1.33	0.41	m			5.39 m3/sec	
Input Heat Capacity (BTU/hr) (annual bhp-hr)	14,681,000	19,412,160			Exit Gas Temperature (°F) <sup>h</sup>	850	727.61	K			205.90 wscf/sec
Fuel	Landfill Gas scfm	544			Exit Gas Moisture Content					5.83 m3/sec	
Heating Value (BTU/scf) (Btu/bhphr)	450	6625			Wet Actual Flow Rate (wacf/min)	12354	120.11			m3/min	
Fuel Consumption (scf/hr) (m3/hr)	32,624	923.8			Wet Standard Flow Rate (wscf/min)			2.00			m3/sec <sup>e</sup>
Max Engine Power	2216			Method 19 Dry Std Flow (dscf/min)	4244						m3/sec <sup>e</sup>
<b>Process Characteristics</b>		C	D	Stack Velocity (m/s)		15.51					
2				25 Fd (dscf stack gas/BTU)				Method 19 dscf/hr		20170330	
m3 LFG used/yr 3		8092675		1 Fw (wscf stack gas/BTU)				234074		Stack Test	
		0.660731558						3901		110.47 m3/min	
Hours of Operation (hr/yr)	8,760			<b>Site Information</b>				2.03		1.84 m/sec	
Annual Availability	100%			Site Barometric Pressure (mm Hg)		655.3				of LFG collection	
% Methane	0.50	Actual Base Elevation <sup>m</sup>		Site Grade		4978.5 ft MSL		1517.45 m MSL			
Destruction Efficiency	0.95							UTM East		UTM North	
								387785.4		4737580.0	
				Point Source Coordinates (m)						Design as of 20200205	
<b>Criteria Pollutants</b>											
Pollutant	Pollutant Source	Emission Factor <sup>a,b</sup>	Emission Factor Unit	Potential Emissions (lb/hr)	Potential Emissions (TPY)	Potential Emissions (g/s)	Significant Level <sup>c</sup> (TPY)	Below Regulatory Concern? <sup>d</sup>	Significant Contribution? <sup>e</sup>		
PM <sub>10</sub>	LFG Combustion	15	lb/10 <sup>6</sup> dscf CH4	0.24	1.07	3.083E-02	15	yes	no		
PM <sub>25</sub>	LFG Combustion	15	lb/10 <sup>6</sup> dscf CH4	0.24	1.07	3.083E-02	15	yes	no		
SO <sub>2</sub>	LFG Combustion	see SO2 calcs tab		1.15	5.04	1.452E-01	40	no	no		
NO <sub>x</sub> <sup>l</sup>	LFG Combustion	1.120	g/hp-hr	5.47	23.98	6.897E-01	40	no	no		
CO <sup>l</sup>	LFG Combustion	4.505	g/hp-hr	22.01	96.39	2.773E+00	100	no	no		
VOC <sup>l</sup>	LFG Combustion	0.628	g/hp-hr	3.07	13.44	3.866E-01	40	no	no		
Lead <sup>l</sup>	LFG Combustion	P2009.0146 T 3.2	NA	0.00	0.00	0.000E+00	0.6	yes	no		
				5.47E+00	NO2 Annual	6.90E-01					
				2.45E-01	PM25 Ann	3.08E-02					
<b>Non-Criteria Pollutants with Significant Threshold</b>											
Pollutant	Pollutant Source	Emission Factor <sup>a</sup>	Emission Factor Unit	Potential Emissions (lb/hr)	Potential Emissions (TPY)	Potential Emissions (g/s)	Significant Level <sup>c</sup> (TPY)	Below Regulatory Concern? <sup>d</sup>	Significant Contribution? <sup>e</sup>		
PM	LFG Combustion	15	lb/10 <sup>6</sup> dscf CH4	0.245	1.07	3.083E-02	25	yes	no		
<b>Other Pollutants</b>											
Pollutant	Pollutant Source	Emission Factor <sup>j,k</sup>	Emission Factor Unit	Potential Emissions (lb/hr)	Potential Emissions (TPY)	Potential Emissions (g/s)	CO2e Multiplier	Potential Emissions (TPY CO2e)			
TOC <sup>l</sup>	LFG Combustion	1.47	lb/10 <sup>6</sup> Btu	2.16E+01	94.525	2.719E+00	0.0	0.000			
Methane <sup>l</sup>	LFG Combustion	1.25	lb/10 <sup>6</sup> Btu	1.84E+01	80.378	2.312E+00	25.0	2009.462			
CO <sub>2</sub> <sup>k</sup>	LFG Combustion	120,000	lb/10 <sup>6</sup> scf	3.91E+03	17147.408	4.933E+02	1.0	17147.408			
N <sub>2</sub> O <sup>k</sup>	LFG Combustion	2.2	lb/10 <sup>6</sup> scf	7.18E-02	0.314	9.043E-03	298.0	93.682			
								19250.552			
<b>Process Weight Rule - Not Applicable<sup>e</sup></b>											
<b>PM Grain Loading Standard<sup>f</sup></b>											
Pollutant	Pollutant Source	Potential Emissions (lb/hr)	Potential Emissions (gr/dscf)	Allowable Emissions (gr/dscf)	Meets Standard?	gr/hr	dscf/hr	Assumes O2 at			
PM	LFG Combustion	0.245	0.0063	0.015	yes	1712.7833	234074	8.50%			
Notes:											
(a) Engine E1 and E2 emissions for NO2, CO and VOC in g/hp-hr use Mar 30, 2017 E1 stack test x1.15 compliance margin											
(b) Emission factors for PM-10 & PM-2.5 from AP-42 Table 2.4-4 [Flare or IC engine], per DEQ											
(c) Emission factors for SO2 from AP-42 Table 2.4 pp7-10, using 120 ppmv H2S (35% above upper sampled LFG values)											
(d) IDAPA 58.01.01.006.106											
(e) IDAPA 58.01.01.221.01 (less than ten percent (10%) of the significant emission rates) = No PTC is Required for this source											
(f) IDAPA 58.01.01.701.02											
(g) IDAPA 58.01.01.676, PM stack not collected; however, PM grain loading uses Mar 30, 2017 E1 stack test data to estimate this emission level.											
(h) Method 19 Stack volumetric flow from Mar 30, 2017 E1 stack test 15,944 dscf/ MMBtu/hr, times Input Heat Capacity of 14.681 MMBtu/hr =234,074 ft3/hr= 1.84 m3/sec Applied 1.1 uncertainty factor = 2.0 m3/sec											
(i) Engine Exhaust Exit Temp = 892 F at Mar 30, 2017 E1 stack test, reduced to 850 F for actual stack temp as conservative engineering estimate											
(j) Emissions estimates based on Engine Manufacturer's emissions ratings											
(k) Uncontrolled Emission Factors for 4 Stroke LB Engines from AP-42 Table 3.2-2 - Supplement F, August 2000											
(l) Emission factors for Criteria Pollutants and Greenhouse Gases from AP-42 Table 1.4-2 - Supplement D, July 1998											
(m) Lead not a constituent found in landfill gas. NA = Not applicable.											
(n) AERMAP's default base elevation for the E1 is 1528.38 m. This receptor is set to the actual base elevation of 1517.45 m for modeling.											

Source E2 FHMRL Cat 3520C @100% Power TAPs EMISSION RATES					
<b>Combustion Source Characteristics</b>			<b>Stack Data</b>		Plot Plan Key "T"
Engine	Caterpillar		Stack Height (ft)(m)	31	9.4488
Model	3520C		Stack Diameter (ft)(m)	1.33	0.41
Input Heat Capacity (BTU/hr) ( annual bhp-hr)	14,681,000	19,412,160	Exit Gas Temp (°F)(K)	850	728
Fuel	Landfill Gas scfm	544	Exit Gas Moisture Content		
Heating Value (BTU/scf) (Btu/bphr)	450	6625	Wet Actual Flow Rate (wacf/min)		
Fuel Consumption (scf/hr) [m3/hr]	32,624	923.8	Wet Standard Flow Rate	m3/sec	2.00
Max Engine Power	2216		Dry Standard Flow Rate (dscf/min)		4244
<b>Process Characteristics</b>			Stack Velocity (m/s)		15.51
	2		25 Fd (dscf stack gas/BTU)		
m3 LFG used/yr	3	8,092,675	1 Fw (wscf stack gas/BTU)		
				UTM East	UTM North
				m	m
Hours of Operation (hr/yr)	8,760		<b>Site Information</b>		
Annual Availability	100%		Site Barometric Pressure (mm Hg)	655.3	
% Methane	0.50		Site Grade	4978.5 ft MSL	
Destruction Efficiency	0.95			1517.45 m MSL	
				Design as of 20200205	

**Idaho Toxic Air Pollutants -- Non-Carcinogenic**

Pollutant	Concentration in LFG [ppmv]	LFG Flow @25°C, 1 atm [m3/yr]	PTE [95% control] (lb/hr)	Potential Emissions (g/s)	Emission Limit <sup>b</sup> (lb/hr)	Modeling Required? <sup>c</sup> [0= No]
VOC	8.35E+02	8.760E-03	3.88E-07	4.89E-08	n/a	n/a
1,1,1-Trichloroethane c	2.43E-01	3.933E+00	2.70E-04	3.40E-05	unk	0
1,2,4-Trichlorobenzene c	5.51E-03	8.918E-02	8.32E-06	1.05E-06	2.470E+00	0
1,2,4-Trimethylbenzene	1.37E+00	2.217E+01	1.37E-03	1.73E-04	8.200E+00	0
1,2-Dichloroethene	1.14E+01	1.845E+02	9.20E-03	1.16E-03	5.270E+01	0
1,2-Dichloropropane c	5.20E-02	8.416E-01	4.89E-05	6.16E-06	2.313E+01	0
1,3,5-Trimethylbenzene	5.51E-03	8.918E-02	8.32E-06	1.05E-06	2.470E+00	0
2,2,4-Trimethylpentane c	1.37E+00	2.217E+01	1.37E-03	1.73E-04	8.200E+00	0
2-Butanone (Methyl ethyl ketone) c	4.01E+00	6.490E+01	2.41E-03	3.03E-04	3.930E+01	0
2-Hexanone (Methyl butyl ketone)	6.13E-01	9.922E+00	5.11E-04	6.44E-05	1.330E+00	0
2-Methyl-2-propanethiol (tert-Butylmercaptan)	3.25E-01	5.260E+00	2.44E-04	3.07E-05	1.200E-01	0
2-Propanol (Isopropyl alcohol)	1.80E+00	2.913E+01	9.00E-04	1.13E-04	6.530E+01	0
4-Methyl-2-pentanone (MIBK) c	8.83E-01	1.429E+01	7.36E-04	9.28E-05	unk	0
Acetone	6.70E+00	1.084E+02	3.24E-03	4.08E-04	1.190E+02	0
Acetonitrile c	5.56E-01	8.999E+00	1.90E-04	2.39E-05	4.470E+00	0
Benzyl chloride c	1.81E-02	2.930E-01	1.91E-05	2.40E-06	unk	0
Bromomethane (Methyl bromide) c	2.10E-02	3.399E-01	1.66E-05	2.09E-06	1.270E+00	0
Carbon disulfide c	1.47E-01	2.379E+00	9.32E-05	1.17E-05	2.000E+00	0
Carbonyl sulfide (Carbon oxy sulfide) c	1.22E-01	1.975E+00	6.10E-05	7.69E-06	2.700E-02	0
Chlorobenzene	4.84E-01	7.834E+00	4.53E-04	5.71E-05	2.330E+01	0
Chlorodifluoromethane (Freon 22) c	7.96E-01	1.288E+01	5.73E-04	7.22E-05	unk	0
Chloroethane (Ethyl chloride) c	3.95E+00	6.393E+01	2.12E-03	2.67E-04	1.760E+02	0
Cyclohexane	1.01E+00	1.635E+01	7.08E-04	8.92E-05	7.000E+01	0
Cyclohexene	1.84E-02	2.978E-01	1.26E-05	1.59E-06	6.770E+01	0
Cyclopentane	2.21E-02	3.577E-01	1.29E-05	1.63E-06	1.147E+02	0
Dichlorobenzene c,e	9.40E-01	1.521E+01	1.15E-03	1.45E-04	3.000E+01	0
Ethyl acetate	1.88E+00	3.043E+01	1.38E-03	1.74E-04	9.330E+01	0
Ethyl mercaptan (Ethanediol)	1.98E-01	3.205E+00	1.02E-04	1.29E-05	6.700E-02	0
Ethylbenzene c	4.86E+00	7.866E+01	4.30E-03	5.41E-04	2.900E+01	0
Heptane	1.34E+00	2.169E+01	1.12E-03	1.41E-04	1.090E+02	0
Hexane c	3.10E+00	5.017E+01	2.22E-03	2.80E-04	1.200E+01	0
Hydrogen sulfide (at source 300 ppmv; 100% to SO2 95% control)	3.00E+02	4.856E+03	8.51E-02	1.07E-02	9.330E-01	0
Isopropylbenzene (Cumene) c	4.30E-01	6.960E+00	4.30E-04	5.42E-05	1.630E+01	0
Mercury (total) c ** 0% control assumed **	1.22E-04	1.975E-03	4.07E-06	5.13E-07	3.000E-03	0
Naphthalene c	1.07E-01	1.732E+00	1.14E-04	1.44E-05	3.330E+00	0
Nonane	2.37E+00	3.836E+01	2.53E-03	3.19E-04	7.000E+01	0
Octane	1.08E+00	1.748E+01	1.03E-03	1.29E-04	9.330E+01	0
Pentane	4.46E+00	7.219E+01	2.68E-03	3.37E-04	1.180E+02	0
Styrene (Vinylbenzene) c	4.11E-01	6.652E+00	3.56E-04	4.49E-05	6.670E+00	0
Tetrahydrofuran (Diethylene oxide)	9.69E-01	1.568E+01	5.82E-04	7.33E-05	3.930E+01	0
Toluene (Methyl benzene) c	2.95E+01	4.775E+02	2.26E-02	2.85E-03	2.500E+01	0
Tribromomethane (Bromoform) c	1.24E-02	2.007E-01	2.61E-05	3.29E-06	3.330E-01	0
Trichloroethylene (Trichloroethene) c	8.28E-01	1.340E+01	9.06E-04	1.14E-04	1.793E+01	0
Vinyl acetate c	2.48E-01	4.014E+00	1.78E-04	2.24E-05	unk	0
Xylenes (o-, m-, p-, mixtures)	9.23E+00	1.494E+02	8.16E-03	1.03E-03	2.900E+01	0
Methylcyclohexane	1.29E+00	2.088E+01	1.05E-03	1.33E-04	1.070E+02	0

**Source E2 Existing FHMRL Engine #2 Idaho Toxic Air Pollutants -- Carcinogenic**

Pollutant	Concentration in LFG [ppmv]	LFG Flow @25°C, 1 atm [m3/yr]	PTE [95% control] (lb/hr)	Potential Emissions (g/s)	Emission Limit <sup>b</sup> (lb/hr)	Modeling Required? <sup>c</sup> [0= No]
VOC	8.35E+02	8.760E-03	3.88E-07	4.89E-08	n/a	n/a
1,1,2,2-Tetrachloroethane c	5.35E-01	8.659E+00	7.47E-04	9.42E-05	1.100E-05	1
1,1,2,3,4,4-Hexachloro-1,3-butadiene (Hexachlorobutadiene) c	3.49E-03	5.649E-02	7.58E-06	9.54E-07	3.300E-04	0
1,1,2-Trichloroethane c	1.58E-01	2.557E+00	1.75E-04	2.21E-05	4.200E-04	0
1,1-Dichloroethane c	2.08E+00	3.367E+01	1.71E-03	2.16E-04	2.500E-04	1
1,1-Dichloroethene (1,1-Dichloroethylene) c	1.60E-01	2.590E+00	1.29E-04	1.63E-05	1.300E-04	0
1,2-Dibromoethane (Ethylene dibromide) c	4.80E-03	7.769E-02	7.51E-06	9.46E-07	3.000E-05	0
1,2-Dichloroethane (Ethylene dichloride) c	1.59E-01	2.573E+00	1.31E-04	1.65E-05	2.500E-04	0
1,3-Butadiene (Vinyl ethylene) c	1.66E-01	2.687E+00	7.47E-05	9.42E-06	2.400E-05	1
1,4-Dioxane (1,4-Diethylene dioxide) c	8.29E-03	1.342E-01	6.08E-06	7.66E-07	4.800E-03	0
Acetaldehyde c	7.74E-02	1.253E+00	2.84E-05	3.58E-06	3.000E-03	0
Acrylonitrile c,d	BDL	0.000E+00	0.00E+00	0.00E+00	9.800E-05	0
Benzene c	2.40E+00	3.884E+01	1.56E-03	1.97E-04	8.000E-04	1
Carbon tetrachloride c	7.98E-03	1.292E-01	1.02E-05	1.29E-06	4.400E-04	0
Chloromethane (Methyl chloride) c	2.44E-01	3.949E+00	1.03E-04	1.29E-05	1.900E-03	0
Dichloromethane (Methylene chloride) c	6.15E+00	9.954E+01	4.35E-03	5.48E-04	1.600E-03	1
Formaldehyde c **Note: Cat 3520C Spec = 8.82 tpy **	4.03E+02	6.515E+03	2.01E+00	2.54E-01	5.100E-04	1
Tetrachloroethylene (Perchloroethylene) c	2.03E+00	3.286E+01	2.80E-03	3.53E-04	1.300E-02	0
Trichloroethylene (Trichloroethene) c	8.28E-01	1.340E+01	9.06E-04	1.14E-04	5.100E-04	1
Trichloromethane (Chloroform) c	7.08E-02	1.146E+00	7.04E-05	8.86E-06	2.800E-04	0
Vinyl chloride (Chloroethene) c	1.42E+00	2.298E+01	7.39E-04	9.31E-05	9.400E-04	0
			9.58E+00	TOTAL TAPs (tpy)		

**Bannock County Solid Waste Department**  
**LFGE Facility**  
**SO2 Emissions**  
**Flare F1 or Engine E1 or Engine E2**  
**05-Feb-20**

*Design as of 20200205*

Sulfur-Containing-Compounds								
<i>Note: This methodology used as a check on Reduced Sulfur Compound Methodology, below</i>								
	CAS	Abundance <sup>b</sup>		Sulfur		Element	Atomic Wt.	
		Published Mol Wt	in LFG, ( ppmv )	Calculated Mol Wt	Mol Wt.in Molecule			
Methanethiol (Methyl mercaptan)	74931	48.11	3.01E+00	47.095	32.06	1	S	32.06
Hydrogen sulfide	7783064	34.08	3.00E+02	34.076	32.06	1	C	12.011
Ethyl mercaptan (Ethanethiol)	75081	62.14	2.24E-01	62.13	32.06	1	H	1.008
Ethyl methyl sulfide	624895	76.16	5.80E-02	76.157	32.06	1	O	15.9994
Diethyl sulfide	352932	90.19	5.80E-02	90.184	32.06	1		Pressure (atm) 1
Dimethyl disulfide	624920	94.2	5.80E-02	94.19	64.12	2		Temp (°C) 25
Dimethyl sulfide	75183	62.14	2.93E+00	62.13	32.06	1		LFG Collect Efficiency % 75
Carbonyl sulfide (Carbon oxysulfide) COS	463581	60.08	5.80E-02	60.0704	32.06	1		
Carbon disulfide CS2	75150	76.14	5.80E-02	76.131	64.12	2		
			306.5					

Reduced Sulfur Compounds	CAS	Sulfur		Abundance <sup>b</sup> in LFG, ( ppmv )	[ AP-42 Chap 2.4 p7 Equation 3 ]		[ AP-42 Chap 2.4 p7 Equation 4 ]		kg/yr	Uncontrolled Mass Emissions of RSCs as Sulfur
		in Molecule Mol Wt	Number of Moles		Qrscp	UMrscp				
Methanethiol (Methyl mercaptan)	74931	32.06	1	3.01E+00	65.0	8.53E+01	kg/yr			
Hydrogen sulfide <sup>a</sup>	7783064	32.06	1	3.00E+02	6,480.8	8.50E+03	kg/yr			
Ethyl mercaptan (Ethanethiol)	75081	32.06	1	2.24E-01	4.8	6.34E+00	kg/yr			
Ethyl methyl sulfide	624895	32.06	1	5.80E-02	1.3	1.64E+00	kg/yr			
Diethyl sulfide	352932	32.06	1	5.80E-02	1.3	1.64E+00	kg/yr			
Dimethyl disulfide	624920	32.06	2	5.80E-02	1.3	3.29E+00	kg/yr			
Dimethyl sulfide	75183	32.06	1	2.93E+00	63.3	8.30E+01	kg/yr			
Carbonyl sulfide (Carbon oxysulfide) COS	463581	32.06	1	5.80E-02	1.3	1.64E+00	kg/yr			
Carbon disulfide CS2	75150	32.06	2	5.80E-02	1.3	3.29E+00	kg/yr			
				306.5						

Q rsc terms in FRONT of Equation = 21.6027  
 UM rsc p terms in FRONT of Equation = 4.09E-02

**UM rsc = 8.68E+03 kg/yr** Uncontrolled Mass Emissions of RSCs as Sulfur

(a) Hydrogen sulfide expected to reach 300 ppm by end of engine project April 30, 2033. Chart trending of the FHMRL's Total Reduced Sulfurs is provided in the TRS Exhibit.

(b) Source % abundance from FHMRL TRS Stack Test 20170405 Atmos Analy & Consulting Inc with the exception of the H2S concentration as noted in (a).

[ AP-42 Chap 2.4 p10 Equation 7 ]		LFG Collection System-Controlled Mass Emissions of Sulfur Dioxide	
<b>CM SO2 =</b>	13025.590 kg/yr		
	3.28 lb/hr		3.64E+01 lbs/10E6 scfm LFG
	0.41 g/sec		
	14.36 tpy		SO2 total

**Source H1: Propane-Fired Space Heater CRITERIA POLLUTANT EMISSION RATES**

**Combustion Source Characteristics**

Burner Manufacturer **EconoAir**  
 Model **CMI-23**  
 Input Heat Capacity (BTU/hr) **19,000**  
 Fuel **Propane**  
 Heating Value (BTU/gal) **91,500**  
 Fuel Consumption (gal/hr) **0.21**  
 AP42, T1.5-1, footnote 1 convert: **0.08971**

**Stack Data**

Stack Height (ft) **26** **7.9248** m  
 Stack Diameter (ft) **0.5** **0.1524** m  
 Avg Exit Gas Temperature (°F) **215** **374.8**  
 Exit Gas Moisture Content  
 Wet Actual Flow Rate (wacf/min)  
 Wet Standard Flow Rate (wscf/min)  
 Dry Standard Flow Rate (dscf/min) **140** **2.33**  
 Stack Velocity (m/s) **11.38** 37.33  
 F<sub>d</sub> (dscf stack gas/BTU)  
 F<sub>w</sub> (wscf stack gas/BTU)

**Process Characteristics**

Total PM Emission Rate (lb/hr)  
 PM2.5 Emission Rate (lb/hr)

8,760

Actual Hours of Operation (hr/yr) 1300 10 hrs/day  
 Hrs/Day Nov1toApr30  
 26 weeks 5 days/week

**Site Information**

MBL Barometric Pressure (mm Hg) **663.93**

<b>UTM North UTM East</b>	
<b>m</b>	<b>m</b>

**Criteria Pollutants** **\*\* Emissions from this discovered source were evaluated -- found to be Below Regulatory Con**

Pollutant	Pollutant Source	Emission Factor <sup>a,b</sup>	Emission Factor Unit	Potential Emissions (lb/hr)	Potential Emissions (TPY)	Potential Emissions (g/s)	Significant Level <sup>c</sup> (TPY)	Below Regulatory Concern? <sup>d</sup>	Significant Contribution? <sup>e</sup>	PTE as % of Sig Lvl
PM <sub>10</sub>	NG Combustion	0.68	lb/1000 gal	1.412E-04	6.185E-04	<b>1.779E-05</b>	15	yes	no	0.004%
PM <sub>2.5</sub>	NG Combustion	0.68	lb/1000 gal	1.412E-04	6.185E-04	<b>1.779E-05</b>	10	yes	no	0.006%
SO <sub>2</sub>	NG Combustion	0.1	lb/1000 gal	2.077E-05	9.095E-05	2.616E-06	40	yes	no	0.000%
NO <sub>x</sub>	NG Combustion	13	lb/1000 gal	2.699E-03	1.182E-02	<b>3.401E-04</b>	40	yes	no	0.030%
CO	NG Combustion	7.5	lb/1000 gal	1.557E-03	6.821E-03	1.962E-04	100	yes	no	0.007%
VOC	NG Combustion	0.5	lb/1000 gal	1.038E-04	4.548E-04	1.308E-05	40	yes	no	0.001%
Lead	NG Combustion	0.0005	lb/1000 gal	9.314E-09	4.079E-08	1.174E-09	0.6	yes	no	0.000%
				1.41E-04	<b>PM25 24h</b>	1.779E-05				
				1.41E-04	<b>PM25 Ann</b>	1.78E-05				
				2.70E-03	<b>NOx Ann</b>	<b>3.40E-04</b>				

**Non-Criteria Pollutants with Significant Threshold**

Pollutant	Pollutant Source	Emission Factor <sup>a,b</sup>	Emission Factor Unit	Potential Emissions (lb/hr)	Potential Emissions (TPY)	Potential Emissions (g/s)	Significant Level <sup>c</sup> (TPY)	Below Regulatory Concern? <sup>d</sup>	Significant Contribution? <sup>e</sup>
PM	NG Combustion	0.68	lb/1000 gal	1.412E-04	6.185E-04	<b>1.779E-05</b>	25	yes	no
Beryllium	NG Combustion	1.20E-05	lb/1000 gal	2.235E-10	9.791E-10	2.816E-11	0.0004	yes	no
Mercury	NG Combustion	2.60E-04	lb/1000 gal	4.843E-09	2.121E-08	6.102E-10	0.1	yes	no

**Other Pollutants**

Pollutant	Pollutant Source	Emission Factor <sup>a</sup>	Emission Factor Unit	Potential Emissions (lb/hr)	Potential Emissions (TPY)	Potential Emissions (g/s)	CO <sub>2</sub> e Multiplier	Emissions (TPY CO <sub>2</sub> e)
TOC	NG Combustion	1	lb/1000 gal	2.077E-04	9.095E-04	<b>2.616E-05</b>	0.0	0.000
Methane	NG Combustion	0.2	lb/1000 gal	4.153E-05	1.819E-04	<b>5.233E-06</b>	25.0	0.005
CO <sub>2</sub>	NG Combustion	12,500	lb/1000 gal	2.596E+00	1.137E+01	<b>3.270E-01</b>	1.0	11
N <sub>2</sub> O	NG Combustion	0.9	lb/1000 gal	1.869E-04	8.186E-04	<b>2.355E-05</b>	298.0	0

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**Process Weight Rule - Not Applicable<sup>g</sup>**

**PM Grain Loading Standard<sup>f</sup>**

Pollutant	Pollutant Source	Potential Emissions (lb/hr)	Potential Emissions (gr/dscf)	Allowable Emissions (gr/dscf)	Meets Standard?
PM	NG Combustion	n/a	< 0.01	0.015	yes

Notes:

- (a) Emission Factors from AP-42 Chapter 1.5, Table 1.5-1: "LPG Propane Combustion"; plus A National Methodology and Emission Inventory for Residential Fuel Combustion Bernd H. Hanek PES, Inc. E-mail: bhhanek@mactec.com
- (b) All particulate emissions assumed to be PM2.5
- (c) IDAPA 58.01.01.006.106
- (d) IDAPA 58.01.01.221.01 (less than ten percent (10%) of the significant emission rates) = No PTC is Required for this source
- (e) IDAPA 58.01.01.701.02
- (f) IDAPA 58.01.01.676
- \*\* NA - Not Applicable

**cern** \*\*

**Source H1: Propane-Fired Space Heater TOXIC AIR POLLUTANT EMISSION RATES**

**Combustion Source Characteristics**

Burner **EconoAir**  
 Model **CMI-23**  
 Input Heat Capacity (BTU/hr) **19,000**  
 Fuel **Propane**  
 Heating Value (BTU/gal) **91,500**  
 Product Consumption (gal/hr) **0.21**

**Stack Data**

Stack Height (ft) **30** **9.144** m  
 Stack Diameter (m) **0.5** **0.1524** m  
 Exit Gas Temperature (°F) **215** **374.8**  
 Exit Gas Moisture Content  
 Wet Actual Flow Rate (wacf/min)  
 Wet Standard Flow Rate (wscf/min)  
 Dry Standard Flow Rate (dscf/min) **2170** **36**  
 Stack Velocity (m/s) **14.13**

**Process Characteristics** **8,760**

Actual Hours of Operation (hr) **1300**  
 10 hrs/day  
 Nov1toApr30 **26 weeks**  
 5 days/week

Fd (dscf stack gas/BTU)  
 Fw (wscf stack gas/BTU)

**UTM North UTM East**

**Site Information**

AP42, T1.5-1, footnote 1 con **0.08971** MBL Barometric Pressure (mm Hg) **663.93**

**\*\* Emissions from this discovered source were evaluated -- found to be Below Regulatory Concern \*\***

**Idaho Toxic Air Pollutants -- Non-Carcinogenic**

Pollutant	Nat Gas AP42 EF <sup>a</sup>	Emission Factor Unit	Potential Emissions (lb/hr)	Potential Emissions (g/s)	Emission Limit <sup>b</sup> (lb/hr)	Modeling Required? <sup>c</sup>	PTE as % of EL
Barium	4.40E-03	lb/1000 gal	8.20E-08	1.03E-08	3.30E-02	no	0.00025%
Chromium	1.40E-03	lb/1000 gal	2.61E-08	3.29E-09	3.30E-02	no	0.00008%
Cobalt	8.40E-05	lb/1000 gal	1.56E-09	1.97E-10	3.30E-03	no	0.00005%
Copper	8.50E-04	lb/1000 gal	1.58E-08	2.00E-09	3.33E-01	no	0.00000%
Dibutylphthalate	FNA	lb/1000 gal	NA	NA	6.70E-02	no	
Dichlorobenzene	1.20E-03	lb/1000 gal	2.24E-08	2.82E-09	2.00E+01	no	0.00000%
Ethylbenzene	FNA	lb/1000 gal	NA	NA	2.90E+01	no	
Fluorene	2.80E-06	lb/1000 gal	5.22E-11	6.57E-12	1.33E-01	no	0.00000%
Hexane	1.80E+00	lb/1000 gal	3.35E-05	4.22E-06	1.20E+01	no	0.00028%
Manganese	3.80E-04	lb/1000 gal	7.08E-09	8.92E-10	3.33E-01	no	0.00000%
Mercury	2.60E-04	lb/1000 gal	4.84E-09	6.10E-10	3.00E-03	no	0.00016%
Molybdenum	1.10E-03	lb/1000 gal	2.05E-08	2.58E-09	3.33E-01	no	0.00001%
Napthalene	6.10E-04	lb/1000 gal	1.14E-08	1.43E-09	3.33E+00	no	0.00000%
Pentane	2.60E+00	lb/1000 gal	4.84E-05	6.10E-06	1.18E+02	no	0.00004%
Phenol	FNA	lb/1000 gal	NA	NA	1.27E+00	no	
Selenium	2.40E-05	lb/1000 gal	4.47E-10	5.63E-11	1.30E-02	no	0.00000%
Toluene	3.40E-03	lb/1000 gal	6.33E-08	7.98E-09	2.50E+01	no	0.00000%
Vanadium	2.30E-03	lb/1000 gal	4.28E-08	5.40E-09	3.00E-03	no	0.00143%
o-Xylene	FNA	lb/1000 gal	NA	NA	2.90E+01	no	
Zinc	2.90E-02		5.40E-07	6.81E-08	6.67E-01	no	0.00008%

**Idaho Toxic Air Pollutants -- Carcinogenic**

Arsenic	2.00E-04	lb/1000 gal	3.73E-09	4.69E-10	1.50E-06	no	0.24837%
Benzene	2.10E-03	lb/1000 gal	3.91E-08	4.93E-09	8.00E-04	no	0.00489%
Beryllium	1.20E-05	lb/1000 gal	2.24E-10	2.82E-11	2.80E-05	no	0.00080%
Benzo(a)pyrene	1.20E-06	lb/1000 gal	2.24E-11	2.82E-12	2.00E-06	no	0.00112%
Bis (2-ethylhexyl)phthalate	FNA	lb/1000 gal	NA	NA	2.80E-02	no	
Cadmium	1.10E-03	lb/1000 gal	2.05E-08	2.58E-09	3.70E-06	no	0.55379%
Formaldehyde	7.50E-02	lb/1000 gal	1.40E-06	1.76E-07	5.10E-04	no	0.27393%
Nickel	2.10E-03	lb/1000 gal	3.91E-08	4.93E-09	2.70E-05	no	0.14488%

0.000 TOTAL TAPs (tpy)

**Source H1: Propane-Fired Space Heater HAZARDOUS AIR POLLUTANT EMISSION RATES**

**Federal Hazardous Air Pollutants**

Pollutant	Emission Factor <sup>a</sup>	Emission Factor Unit	Potential Emissions (lb/hr)	Potential Emissions (g/s)	Emission Limit <sup>b</sup> (lb/hr)	Modeling Required? <sup>c</sup>	
2-Methylnaphthalene	2.40E-05	lb/1000 gal	4.47E-10	5.63E-11	9.10E-05	no	0.00049%
3-Methylchloranthrene	1.80E-06	lb/1000 gal	3.35E-11	4.22E-12	9.10E-05	no	0.00004%
1,2-Dimethylbenz(a)anthracene	1.60E-05	lb/1000 gal	2.98E-10	3.76E-11	9.10E-05	no	0.00033%
Acenaphthene	1.80E-06	lb/1000 gal	3.35E-11	4.22E-12	9.10E-05	no	0.00004%
Acenaphthylene	1.80E-06	lb/1000 gal	3.35E-11	4.22E-12	9.10E-05	no	0.00004%
Anthracene	2.40E-06	lb/1000 gal	4.47E-11	5.63E-12	9.10E-05	no	0.00005%
Benzo(g,h,i)perylene	1.20E-06	lb/1000 gal	2.24E-11	2.82E-12	9.10E-05	no	0.00002%
Fluoranthene	3.00E-06	lb/1000 gal	5.59E-11	7.04E-12	9.10E-05	no	0.00006%
Phenanthrene	1.70E-05	lb/1000 gal	3.17E-10	3.99E-11	9.10E-05	no	0.00035%
Pyrene	5.00E-06	lb/1000 gal	9.31E-11	1.17E-11	9.10E-05	no	0.00010%
Fluorene	2.80E-06	lb/1000 gal	5.22E-11	6.57E-12	1.33E-01	no	0.00000%
<b>Benzo(a)pyrene</b>	1.20E-06	lb/1000 gal	2.24E-11	2.82E-12	2.00E-06		
Benzo(a)anthracene	1.80E-06	lb/1000 gal	3.35E-11	4.22E-12			
Benzo(b)fluoranthene	1.80E-06	lb/1000 gal	3.35E-11	4.22E-12	POM		
Benzo(k)fluoranthene	1.80E-06	lb/1000 gal	3.35E-11	4.22E-12	POM		
Chrysene	1.80E-06	lb/1000 gal	3.35E-11	4.22E-12	POM		
Dibenzo(a,h)anthracene	1.20E-06	lb/1000 gal	2.24E-11	2.82E-12	POM		
Indeno(1,2,3-cd)pyrene	1.80E-06	lb/1000 gal	3.35E-11	4.22E-12	POM		
		SUM of POMs	2.12E-10	2.68E-11	<b>2.00E-06</b>	no	0.01062%
Dichlorobenzene	1.20E-03	lb/1000 gal	2.24E-08	2.82E-09	2.00E+01	no	0.00000%
Formaldehyde	7.50E-02	lb/1000 gal	1.40E-06	1.76E-07	5.10E-04	no	0.27393%
Benzene	2.10E-03	lb/1000 gal	3.91E-08	4.93E-09	8.00E-04	no	0.00489%
Hexane	1.80E+00	lb/1000 gal	3.35E-05	4.22E-06	1.20E+01	no	0.00028%
Napthalene	6.10E-04	lb/1000 gal	1.14E-08	1.43E-09	3.33E+00	no	0.00000%
Toluene	3.40E-03	lb/1000 gal	6.33E-08	7.98E-09	2.50E+01	no	0.00000%

0.000 TOTAL HAPs (tpy)

**Notes:**

- (a) Emission Factors from AP-42 Chapter 1.4, "Natural Gas Combustion".
- (a1) EF xform to EI per C3H6 from AP-42 Chapter 1.5, Table 1, Note a: "LPG Propane Combustion".
- (b) IDAPA 58.01.01.585 and 586
- (c) IDAPA 58.01.01.210.05(b)
- \* FNA - Factor Not Available

**Source H2: Propane-Fired Space Heater CRITERIA POLLUTANT EMISSION RATES**

**Combustion Source Characteristics**

Burner Manufacturer **Empire**  
 Model **DV-25-2SG**  
 Input Heat Capacity (BTU/hr) **22,500**  
 Fuel **Propane**  
 Heating Value (BTU/gal) **91,500**  
 Fuel Consumption (gal/hr) **0.25**  
 AP42, T1.5-1, footnote 1 convert: **0.08971**

**Stack Data**

Stack Height (ft) **26** **7.9248** m  
 Stack Diameter (ft) **0.5** **0.1524** m  
 Avg Exit Gas Temperature (°F) **215** **374.8**  
 Exit Gas Moisture Content  
 Wet Actual Flow Rate (wacf/min)  
 Wet Standard Flow Rate (wscf/min)  
 Dry Standard Flow Rate (dscf/min) **140** **2.33**  
 Stack Velocity (m/s) **11.38** 37.33  
 F<sub>d</sub> (dscf stack gas/BTU)  
 F<sub>w</sub> (wscf stack gas/BTU)

UTM North UTM East	
m	m

**Process Characteristics**

Total PM Emission Rate (lb/hr)  
 PM2.5 Emission Rate (lb/hr)

Actual Hours of Operation (hr/yr) 1300  
 Hrs/Day 10 hrs/day  
 26 weeks Nov1toApr30  
 5 days/week

**Site Information**

MBL Barometric Pressure (mm Hg) 663.93

**Criteria Pollutants** **\*\* Emissions from this discovered source were evaluated -- found to be Below Regulatory Conc**

Pollutant	Pollutant Source	Emission Factor a,b	Emission Factor Unit	Potential Emissions (lb/hr)	Potential Emissions (TPY)	Potential Emissions (g/s)	Significant Level <sup>c</sup> (TPY)	Below Regulatory Concern? <sup>d</sup>	Significant Contribution ? <sup>c</sup>	PTE as % of Sig Lvl
PM <sub>10</sub>	NG Combustion	0.68	lb/1000 gal	1.672E-04	7.324E-04	<b>2.107E-05</b>	15	yes	no	0.005%
PM <sub>2.5</sub>	NG Combustion	0.68	lb/1000 gal	1.672E-04	7.324E-04	<b>2.107E-05</b>	10	yes	no	0.007%
SO <sub>2</sub>	NG Combustion	0.1	lb/1000 gal	2.459E-05	1.077E-04	3.098E-06	40	yes	no	0.000%
NO <sub>x</sub>	NG Combustion	13	lb/1000 gal	3.197E-03	1.400E-02	<b>4.028E-04</b>	40	yes	no	0.035%
CO	NG Combustion	7.5	lb/1000 gal	1.844E-03	8.078E-03	2.324E-04	100	yes	no	0.008%
VOC	NG Combustion	0.5	lb/1000 gal	1.230E-04	5.385E-04	1.549E-05	40	yes	no	0.001%
Lead	NG Combustion	0.0005	lb/1000 gal	1.103E-08	4.831E-08	1.390E-09	0.6	yes	no	0.000%
				1.67E-04	<b>PM25 24h</b>	2.107E-05				
				1.67E-04	<b>PM25 Ann</b>	2.11E-05				
				3.20E-03	<b>NOx Ann</b>	<b>4.03E-04</b>				

**Non-Criteria Pollutants with Significant Threshold**

Pollutant	Pollutant Source	Emission Factor a,b	Emission Factor Unit	Potential Emissions (lb/hr)	Potential Emissions (TPY)	Potential Emissions (g/s)	Significant Level <sup>c</sup> (TPY)	Below Regulatory Concern? <sup>d</sup>	Significant Contribution ? <sup>c</sup>
PM	NG Combustion	0.68	lb/1000 gal	1.672E-04	7.324E-04	<b>2.107E-05</b>	25	yes	no
Beryllium	NG Combustion	1.20E-05	lb/1000 gal	2.647E-10	1.159E-09	3.335E-11	0.0004	yes	no
Mercury	NG Combustion	2.60E-04	lb/1000 gal	5.735E-09	2.512E-08	7.226E-10	0.1	yes	no

**Other Pollutants**

Pollutant	Pollutant Source	Emission Factor a	Emission Factor Unit	Potential Emissions (lb/hr)	Potential Emissions (TPY)	Potential Emissions (g/s)	CO <sub>2</sub> e Multiplier	Emissions (TPY CO <sub>2</sub> e)
TOC	NG Combustion	1	lb/1000 gal	2.459E-04	1.077E-03	<b>3.098E-05</b>	0.0	0.000
Methane	NG Combustion	0.2	lb/1000 gal	4.918E-05	2.154E-04	<b>6.197E-06</b>	25.0	0.005
CO <sub>2</sub>	NG Combustion	12,500	lb/1000 gal	3.074E+00	1.346E+01	<b>3.873E-01</b>	1.0	13
N <sub>2</sub> O	NG Combustion	0.9	lb/1000 gal	2.213E-04	9.693E-04	<b>2.789E-05</b>	298.0	0

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**Process Weight Rule - Not Applicable<sup>e</sup>**

**PM Grain Loading Standard<sup>f</sup>**

Pollutant	Pollutant Source	Potential Emissions (lb/hr)	Potential Emissions (gr/dscf)	Allowable Emissions (gr/dscf)	Meets Standard?
PM	NG Combustion	n/a	< 0.01	0.015	yes

Notes:

- (a) Emission Factors from AP-42 Chapter 1.5, Table 1.5-1: "LPG Propane Combustion"; plus A National Methodology and Emission Inventory for Residential Fuel Combustion Bernd H. Hanek PES, Inc. E-mail: bhhanek@mactec.com
- (b) All particulate emissions assumed to be PM2.5
- (c) IDAPA 58.01.01.006.106
- (d) IDAPA 58.01.01.221.01 (less than ten percent (10%) of the significant emission rates) = No PTC is Required for this source
- (e) IDAPA 58.01.01.701.02
- (f) IDAPA 58.01.01.676
- \*\* NA - Not Applicable

ern \*\*

**Source H2: Propane-Fired Space Heater TOXIC AIR POLLUTANT EMISSION RATES**

**Combustion Source Characteristics**

Burner **Empire**  
 Model **DV-25-2SG**  
 Input Heat Capacity (BTU/hr) **22,500**  
 Fuel **Propane**  
 Heating Value (BTU/gal) **91,500**  
 Product Consumption (gal/hr) **0.25**

**Stack Data**

Stack Height (ft) **n/a** #VALUE! m  
 Stack Diameter (m) **n/a** #VALUE! m  
 Exit Gas Temperature (°F)  
 Exit Gas Moisture Content  
 Wet Actual Flow Rate (wacf/min)  
 Wet Standard Flow Rate (wscf/min)  
 Dry Standard Flow Rate (dscf/min) **2170** **36**  
 Stack Velocity (m/s) **14.13**  
 Fd (dscf stack gas/BTU)  
 Fw (wscf stack gas/BTU) **UTM North UTM East**

**Process Characteristics**

8,760  
 Actual Hours of Operation (hr/yr) **1300**  
 10 hrs/day  
 Nov1toApr30 **26 weeks**  
 5 days/week

**Site Information**

n/a n/a  
 MBL Barometric Pressure (mm Hg) **663.93**

AP42, T1.5-1, footnote 1 convert: **0.08971**

**\*\* Emissions from this discovered source were evaluated -- found to be Below Regulatory Concern \*\***

**Idaho Toxic Air Pollutants -- Non-Carcinogenic**

Pollutant	Nat Gas AP42 EF <sup>a</sup>	Emission Factor Unit	Potential Emissions (lb/hr)	Potential Emissions (g/s)	Emission Limit <sup>b</sup> (lb/hr)	Modeling Required? <sup>c</sup>	PTE as % of EL
Barium	4.40E-03	lb/1000 gal	9.71E-08	1.22E-08	3.30E-02	no	0.00029%
Chromium	1.40E-03	lb/1000 gal	3.09E-08	3.89E-09	3.30E-02	no	0.00009%
Cobalt	8.40E-05	lb/1000 gal	1.85E-09	2.33E-10	3.30E-03	no	0.00006%
Copper	8.50E-04	lb/1000 gal	1.88E-08	2.36E-09	3.33E-01	no	0.00001%
Dibutylphthalate	FNA	lb/1000 gal	NA	NA	6.70E-02	no	
Dichlorobenzene	1.20E-03	lb/1000 gal	2.65E-08	3.34E-09	2.00E+01	no	0.00000%
Ethylbenzene	FNA	lb/1000 gal	NA	NA	2.90E+01	no	
Fluorene	2.80E-06	lb/1000 gal	6.18E-11	7.78E-12	1.33E-01	no	0.00000%
Hexane	1.80E+00	lb/1000 gal	3.97E-05	5.00E-06	1.20E+01	no	0.00033%
Manganese	3.80E-04	lb/1000 gal	8.38E-09	1.06E-09	3.33E-01	no	0.00000%
Mercury	2.60E-04	lb/1000 gal	5.74E-09	7.23E-10	3.00E-03	no	0.00019%
Molybdenum	1.10E-03	lb/1000 gal	2.43E-08	3.06E-09	3.33E-01	no	0.00001%
Napthalene	6.10E-04	lb/1000 gal	1.35E-08	1.70E-09	3.33E+00	no	0.00000%
Pentane	2.60E+00	lb/1000 gal	5.74E-05	7.23E-06	1.18E+02	no	0.00005%
Phenol	FNA	lb/1000 gal	NA	NA	1.27E+00	no	
Selenium	2.40E-05	lb/1000 gal	5.29E-10	6.67E-11	1.30E-02	no	0.00000%
Toluene	3.40E-03	lb/1000 gal	7.50E-08	9.45E-09	2.50E+01	no	0.00000%
Vanadium	2.30E-03	lb/1000 gal	5.07E-08	6.39E-09	3.00E-03	no	0.00169%
o-Xylene	FNA	lb/1000 gal	NA	NA	2.90E+01	no	
Zinc	2.90E-02		6.40E-07	8.06E-08	6.67E-01	no	0.00010%

**Idaho Toxic Air Pollutants -- Carcinogenic**

Arsenic	2.00E-04	lb/1000 gal	4.41E-09	5.56E-10	1.50E-06	no	0.29412%
Benzene	2.10E-03	lb/1000 gal	4.63E-08	5.84E-09	8.00E-04	no	0.00579%
Beryllium	1.20E-05	lb/1000 gal	2.65E-10	3.34E-11	2.80E-05	no	0.00095%
Benzo(a)pyrene	1.20E-06	lb/1000 gal	2.65E-11	3.34E-12	2.00E-06	no	0.00132%
Bis (2-ethylhexyl)phthalate	FNA	lb/1000 gal	NA	NA	2.80E-02	no	
Cadmium	1.10E-03	lb/1000 gal	2.43E-08	3.06E-09	3.70E-06	no	0.65580%
Formaldehyde	7.50E-02	lb/1000 gal	1.65E-06	2.08E-07	5.10E-04	no	0.32439%
Nickel	2.10E-03	lb/1000 gal	4.63E-08	5.84E-09	2.70E-05	no	0.17157%

0.000 TOTAL TAPs (tpy)

**Source H1: Propane-Fired Space Heater HAZARDOUS AIR POLLUTANT EMISSION RATES**

**Federal Hazardous Air Pollutants**

Pollutant	Emission Factor <sup>a</sup>	Emission Factor Unit	Potential Emissions (lb/hr)	Potential Emissions (g/s)	Emission Limit <sup>b</sup> (lb/hr)	Modeling Required? <sup>c</sup>	
2-Methylnaphthalene	2.40E-05	lb/1000 gal	5.29E-10	6.67E-11	9.10E-05	no	0.00058%
3-Methylchloranthrene	1.80E-06	lb/1000 gal	3.97E-11	5.00E-12	9.10E-05	no	0.00004%
7,12-Dimethylbenz(a)anthracene	1.60E-05	lb/1000 gal	3.53E-10	4.45E-11	9.10E-05	no	0.00039%
Acenaphthene	1.80E-06	lb/1000 gal	3.97E-11	5.00E-12	9.10E-05	no	0.00004%
Acenaphthylene	1.80E-06	lb/1000 gal	3.97E-11	5.00E-12	9.10E-05	no	0.00004%
Anthracene	2.40E-06	lb/1000 gal	5.29E-11	6.67E-12	9.10E-05	no	0.00006%
Benzo(g,h,i)perylene	1.20E-06	lb/1000 gal	2.65E-11	3.34E-12	9.10E-05	no	0.00003%
Fluoranthene	3.00E-06	lb/1000 gal	6.62E-11	8.34E-12	9.10E-05	no	0.00007%
Phenanthrene	1.70E-05	lb/1000 gal	3.75E-10	4.73E-11	9.10E-05	no	0.00041%
Pyrene	5.00E-06	lb/1000 gal	1.10E-10	1.39E-11	9.10E-05	no	0.00012%
Fluorene	2.80E-06	lb/1000 gal	6.18E-11	7.78E-12	1.33E-01	no	0.00000%
<b>Benzo(a)pyrene</b>	1.20E-06	lb/1000 gal	2.65E-11	3.34E-12	2.00E-06		
Benzo(a)anthracene	1.80E-06	lb/1000 gal	3.97E-11	5.00E-12	POM		
Benzo(b)fluoranthene	1.80E-06	lb/1000 gal	3.97E-11	5.00E-12	POM		
Benzo(k)fluoranthene	1.80E-06	lb/1000 gal	3.97E-11	5.00E-12	POM		
Chrysene	1.80E-06	lb/1000 gal	3.97E-11	5.00E-12	POM		
Dibenzo(a,h)anthracene	1.20E-06	lb/1000 gal	2.65E-11	3.34E-12	POM		
Indeno(1,2,3-cd)pyrene	1.80E-06	lb/1000 gal	3.97E-11	5.00E-12	POM		
		SUM of POMs	2.51E-10	3.17E-11	<b>2.00E-06</b>	no	0.01257%
Dichlorobenzene	1.20E-03	lb/1000 gal	2.65E-08	3.34E-09	2.00E+01	no	0.00000%
Formaldehyde	7.50E-02	lb/1000 gal	1.65E-06	2.08E-07	5.10E-04	no	0.32439%
Benzene	2.10E-03	lb/1000 gal	4.63E-08	5.84E-09	8.00E-04	no	0.00579%
Hexane	1.80E+00	lb/1000 gal	3.97E-05	5.00E-06	1.20E+01	no	0.00033%
Napthalene	6.10E-04	lb/1000 gal	1.35E-08	1.70E-09	3.33E+00	no	0.00000%
Toluene	3.40E-03	lb/1000 gal	7.50E-08	9.45E-09	2.50E+01	no	0.00000%

0.000 TOTAL HAPs (tpy)

**Notes:**

- (a1) Emission Factors from AP-42 Chapter 1.4, "Natural Gas Combustion".
- (a1) EF xform to EI per C3H6 from AP-42 Chapter 1.5, Table 1, Note a: "LPG Propane Combustion".
- (b) IDAPA 58.01.01.585 and 586
- (c) IDAPA 58.01.01.210.05(b)
- \* FNA - Factor Not Available

**SUMMARY ANNUAL FUGITIVE DUST EMISSIONS (tpy)**

	<b>PM [TSP] (tpy)</b>	<b>PM-10 (tpy)</b>		<b>PM-2.5 (tpy)</b>
Paved Roads within FHMRL	<b>4.57E+00</b>	<b>4.57E+00</b>		<b>1.14E+00</b>
Unpaved Roadways within FHMRL	<b>4.95E+00</b>	<b>4.95E+00</b>		<b>4.95E-01</b>
Scraper Loading for Cover	<b>2.69E-01</b>	<b>2.69E-01</b>	<b>1.22E+00</b>	<b>2.69E-01</b>
Scraper Haul for Cover	<b>4.72E+00</b>	<b>1.14E+00</b>		<b>1.46E-01</b>
Scraper Unloading -Cover Placement	<b>8.44E-01</b>	<b>8.44E-01</b>		<b>8.44E-01</b>
Compacting (Dozer Equation) Cover	<b>7.05E-01</b>	<b>7.05E-01</b>		<b>3.87E-01</b>
Exposed Area Wind Erosion	<b>1.62E+00</b>	<b>5.65E-01</b>	<b>3.13E-01</b>	<b>8.56E-02</b>
<b>TOTAL (tpy)</b>	<b>17.67</b>	<b>13.04</b>		<b>3.37</b>

These data are an abstract from a separate spreadsheet.

Source: 20180217 FHMRL PTC2 Fugitive Emissions Calc R10

## **APPENDIX B – AMBIENT AIR QUALITY IMPACT ANALYSES**

**MEMORANDUM**

**DATE:** May 19, 2020

**TO:** Zach Pierce, Permit Writer, Air Program

**FROM:** Pao Baylon, Modeling Review Analyst, Air Program

**PROJECT:** P-2009.0146 PROJ 62411, Permit for an Existing Municipal Waste Landfill Facility located in Bannock County, Idaho.

**SUBJECT:** Demonstration of Compliance with IDAPA 58.01.01.203.02 (NAAQS) and 203.03 (TAPs) as it relates to air quality impact analyses.

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## Acronyms, Units, and Chemical Nomenclature

AAC	Acceptable Ambient Concentration of a non-carcinogenic TAP
AACC	Acceptable Ambient Concentration of a Carcinogenic TAP
acfm	Actual cubic feet per minute
AERMAP	The terrain data preprocessor for AERMOD
AERMET	The meteorological data preprocessor for AERMOD
AERMOD	American Meteorological Society/Environmental Protection Agency Regulatory Model
AERSCREEN3	An EPA-recommended screening model based on AERMOD
Appendix W	40 CFR 51, Appendix W – Guideline on Air Quality Models
ASOS	Automated Surface Observing System
BPIP	Building Profile Input Program
BRC	Below Regulatory Concern
CFR	Code of Federal Regulations
CMAQ	Community Multi-Scale Air Quality Modeling System
CO	Carbon Monoxide
DEQ	Idaho Department of Environmental Quality
DV	Design Values
EL	Emissions Screening Level of a TAP
EPA	United States Environmental Protection Agency
FHMRL	Fort Hall Mine Road Landfill (permittee)
ft	Feet
fps	Feet per second
GEP	Good Engineering Practice
hr	hours
IC	Internal Combustion
Idaho Air Rules	Rules for the Control of Air Pollution in Idaho, located in the Idaho Administrative Procedures Act 58.01.01
ISCST3	Industrial Source Complex Short Term 3 dispersion model
K	Kelvin
lb/hr	Pounds per hour
LFG	Landfill Gas
m	Meters
m/sec	Meters per second
MMBtu	Million British Thermal Units
NAAQS	National Ambient Air Quality Standards
NED	National Elevation Dataset
NESHAP	National Emission Standards for Hazardous Air Pollutants
NO	Nitrogen Oxide
NO <sub>2</sub>	Nitrogen Dioxide
NO <sub>x</sub>	Oxides of Nitrogen
NSPS	New Source Performance Standards
NW AIRQUEST	Northwest International Air Quality Environmental Science and Technology Consortium
NWS	National Weather Service

O <sub>3</sub>	Ozone
OLM	Ozone Limiting Method
Paragon	Paragon Consulting, Inc. (permittee's permitting consultant)
Pb	Lead
PM <sub>10</sub>	Particulate matter with an aerodynamic particle diameter less than or equal to a nominal 10 micrometers
PM <sub>2.5</sub>	Particulate matter with an aerodynamic particle diameter less than or equal to a nominal 2.5 micrometers
ppb	parts per billion
ppm	parts per million
PRIME	Plume Rise Model Enhancement
PSD	Prevention of Significant Deterioration
PTC	Permit to Construct
PTE	Potential to Emit
PVMRM	Plume Volume Molar Ratio Method
SIL	Significant Impact Level
SO <sub>2</sub>	Sulfur Dioxide
TAP	Toxic Air Pollutant
tpy	Tons per year
Trinity	Trinity Consultants/MSI (permittee's modeling consultant)
TRS	Total Reduced Sulfur
USGS	United States Geological Survey
UTM	Universal Transverse Mercator
VOC	Volatile Organic Compounds
°F	Degrees Fahrenheit
µg/m <sup>3</sup>	Micrograms per cubic meter of air

## **1.0 Summary**

Fort Hall Mine Road Landfill (FHMRL) submitted a Permit to Construct (PTC) application for modifications to their existing municipal waste landfill facility located in Bannock County, Idaho. The project modifications involve: (1) updating the emission inventory for NO<sub>x</sub>, CO, VOC, and formaldehyde to utilize the engine manufacturer's emission ratings; (2) updating SO<sub>2</sub> emissions to account for the historical trend of Total Reduced Sulfur (TRS); and (3) modeling FHMRL's ambient air impacts with the new emission inventory, meteorological data, and updated background concentration data. Project-specific air quality analyses involving atmospheric dispersion modeling of estimated emissions associated with the proposed modification were submitted to DEQ to demonstrate that applicable emissions do not result in violation of a National Ambient Air Quality Standard (NAAQS) or Toxic Air Pollutant (TAP) increment as required by the Idaho Administrative Procedures Act 58.01.01.203.02 and 203.03 (Idaho Air Rules Section 203.02 and 203.03). This memorandum provides a summary of the applicability assessment for analyses and air impact analyses used to demonstrate compliance with applicable NAAQS and TAP increments, as required by Idaho Air Rules Section 203.02 and 203.03.

Paragon Consulting, Inc. (Paragon) and Trinity Consultants/MSI (Trinity), on behalf of FHMRL, prepared the PTC application and performed ambient air impact analyses for this project. DEQ review of submitted data and DEQ analyses summarized by this memorandum addressed only the rules, policies, methods, and data pertaining to the air impact analyses used to demonstrate that estimated emissions associated with operation of the facility will not cause or significantly contribute to a violation of any applicable air quality standard. This review did not address/evaluate compliance with other rules or analyses not pertaining to the air impact analyses. Evaluation of emission estimates was the responsibility of the DEQ permit writer and is addressed in the main body of the DEQ Statement of Basis, and emission calculation methods were not evaluated in this modeling review memorandum.

Table 1 presents key assumptions and results to be considered in the development of the permit. Idaho Air Rules require air impact analyses be conducted in accordance with methods outlined in 40 CFR 51, Appendix W *Guideline on Air Quality Models* (Appendix W). Appendix W requires that air quality impacts be assessed using atmospheric dispersion models with emissions and operations representative of design capacity or as limited by a federally enforceable permit condition.

The submitted information and analyses: 1) utilized appropriate methods and models; 2) was conducted using reasonably accurate or conservative model parameters and input data (review of emission estimates was addressed by the DEQ permit writer); 3) adhered to established DEQ guidelines for new source review dispersion modeling; 4) showed either a) that estimated potential/allowable emissions are at a level defined as below regulatory concern (BRC) and do not require a NAAQS compliance demonstration; b) that predicted pollutant concentrations from emissions associated with the project as modeled were below Significant Impact Levels (SILs) or other applicable regulatory thresholds; or c) that predicted pollutant concentrations from emissions associated with the project, when appropriately combined with co-contributing sources and background concentrations, were below applicable NAAQS at ambient air locations where and when the project has a significant impact; 5) showed that TAP emission increases associated with the project will not result in increased ambient air impacts exceeding allowable TAP increments. This conclusion assumes that conditions in Table 1 are representative of facility design capacity or operations as limited by a federally enforceable permit condition. The DEQ permit writer should use Table 1 and other information presented in this memorandum to generate appropriate permit provisions/restrictions to assure emissions do not exceed applicable regulatory thresholds requiring further analyses and to assure the requirements of Appendix W are met regarding emissions representative of design capacity or permit allowable rates.

<b>Table 1. KEY ASSUMPTIONS USED IN MODELING ANALYSES.</b>	
<b>Criteria/Assumption/Result</b>	<b>Explanation/Consideration</b>
<p><b>General Emission Rates.</b> Emission rates used in the air impact analyses, as listed in this memorandum, must represent maximum potential emissions as given by design capacity, inherently limited by the nature of the process or configuration of the facility, or as limited by the issued permit for the specific pollutant and averaging period.</p>	<p>Compliance has not been demonstrated for emission rates greater than those used in the air impact analyses. The emission sources were modeled at 8,760 hours a year for conservatism.</p>
<p><b>Air Impact Analyses for Criteria Pollutant Emissions.</b> Short-term and long-term facility-wide emissions of NO<sub>2</sub><sup>a</sup>, CO<sup>b</sup>, and SO<sub>2</sub><sup>c</sup> are greater than DEQ Level I modeling thresholds. Therefore, these pollutants and all averaging times are subject to NAAQS Compliance Demonstration requirements.</p> <p>Although PM<sub>10</sub><sup>d</sup> and PM<sub>2.5</sub><sup>e</sup> emissions were unchanged from the 2018 modeling analysis, both pollutants and all averaging periods were modeled to account for new background concentrations and updated meteorological data.</p>	<p>Project-specific air impact analyses demonstrating compliance with NAAQS, as required by Idaho Air Rules Section 203.02, are required for pollutant increases above BRC thresholds, or for pollutants having an emissions increase that is greater than Level I modeling applicability thresholds (where the BRC exclusion cannot be used). Compliance with NAAQS has not been demonstrated for emissions that exceed the emission estimates presented in the application.</p> <p>Although a comparison of the emission inventory with the Level I modeling thresholds (summarized in Table 3 of this modeling memo) indicates that modeling was required only for NO<sub>2</sub>, CO, and SO<sub>2</sub>, all criteria pollutants were modeled. This is because new background concentrations and updated meteorological data are available for the facility location.</p>
<p><b>Air Impact Analyses for TAP Emissions.</b> Allowable emissions of all TAPs except formaldehyde are below screening emission levels (ELs). However, formaldehyde is a federal Hazardous Air Pollutant (HAP), and the internal combustion engines are covered by the New Source Performance Standards (NSPS) and National Emission Standards for Hazardous Air Pollutants (NESHAP). Therefore, formaldehyde was excluded from the TAPs modeling analysis.</p> <p>Hydrogen sulfide emissions increased from the 2018 modeling analysis. However, the emission increase does not exceed the EL. Therefore, modeling is not required for hydrogen sulfide.</p> <p>No TAPs were modeled for this project.</p>	<p>A TAP increment compliance demonstration would be required for any TAPs with emissions above ELs.</p> <p>Although emission increase of formaldehyde exceeds the applicable screening emission level, it is a federal HAP and the combustion engines are covered under federal NSPS or NESHAP. IDAPA 58.01.01.210.20(a) states, <i>“No demonstration of compliance with the toxic air pollutant provisions is required to obtain a permit to construct or to demonstrate permit to construct exemption criteria for a new source or for modification of an existing source if the toxic air pollutant is also a listed hazardous air pollutant from: The equipment or activity covered by a NSPS or NESHAP.”</i></p>

<sup>a</sup>. Nitrogen dioxide.

<sup>b</sup>. Carbon monoxide.

<sup>c</sup>. Sulfur dioxide.

<sup>d</sup>. Particulate matter with an aerodynamic diameter less than or equal to a nominal 10 micrometers.

<sup>e</sup>. Particulate matter with an aerodynamic diameter less than or equal to a nominal 2.5 micrometers.

## Summary of Submittals and Actions

December 11, 2019 Pre-application meeting held at DEQ State Office. It was agreed that DEQ would review FHMRL’s most recent modeling protocol (from 2016).

January 10, 2020 DEQ sent a conditional modeling protocol approval to Paragon and Trinity.

March 17, 2020 Regulatory start date.

April 13, 2020 Application deemed complete by DEQ.

## **2.0 Background Information**

This section provides background information applicable to the project and the site proposed for the facility. It also provides a brief description of the applicable air impact analyses requirements for the project.

### **2.1 Project Description**

Bannock County operates the Fort Hall Mine Road Landfill (FHMRL), a municipal solid waste landfill. FHMRL currently consists of two active cells, Cell 2 and Cell 4. The closed Cell 1 was succeeded by Cell 2. A third cell, Cell 4, began operations in 2016 and has increased the total landfill design capacity. Cell 3 is a disposal cell for construction and demolition debris which includes a dedicated cell for asbestos-containing materials.

The facility occupies 820 acres and utilizes an existing landfill gas (LFG)-to-energy system composed of the following: a landfill-gas collection system, two internal combustion (IC) engines that drive electrical generators which produce electrical power for sale, and one open flare that burns excess landfill gas when the generator(s) are offline or when the production of landfill gas exceeds the capacities of the engines. FHMRL owns and operates all emission sources.

The project will modify the existing facility to address the following: (1) CO, NO<sub>x</sub>, VOC, and formaldehyde emission increases for the previously permitted Caterpillar Model 3520C IC engines; and (2) SO<sub>2</sub> emission increase from the flare based on FHMRL's historical Total Reduced Sulfur (TRS) and projected TRS concentration data. Emissions of SO<sub>2</sub> for the flare and IC engines were revised using a TRS concentration of 300 parts per million (ppm) which was based on historical test data, and a future projected TRS concentration of 250 ppm with a 20% compliance safety factor applied. Emission rates for VOC and NO<sub>x</sub> for the IC engines were revised based on manufacturer's emission ratings plus a 20% compliance safety factor. CO and formaldehyde emissions for the IC engines were based solely on the manufacturer's emission ratings. PM<sub>10</sub>, PM<sub>2.5</sub>, and TAP emissions (except for formaldehyde and hydrogen sulfide), were unchanged from the previous 2018 modeling analyses.

### **2.2 Project Location and Area Classification**

The facility is located in Bannock County, Idaho (Northing: 4,736,730.5 m; Easting: 387,548.9 m; UTM Zone 12). This area is designated as an attainment or unclassifiable area for sulfur dioxide (SO<sub>2</sub>), nitrogen dioxide (NO<sub>2</sub>), carbon monoxide (CO), lead (Pb), ozone (O<sub>3</sub>), particulate matter with an aerodynamic diameter less than or equal to a nominal 10 micrometers (PM<sub>10</sub>), and particulate matter with an aerodynamic diameter less than or equal to a nominal 2.5 micrometers (PM<sub>2.5</sub>). The area is not classified as non-attainment for any criteria pollutants.

### **2.3 Air Impact Analyses Required for All Permits to Construct**

Idaho Air Rules Sections 203.02 and 203.03:

*No permit to construct shall be granted for a new or modified stationary source unless the applicant shows to the satisfaction of the Department all of the following:*

**02. NAAQS.** *The stationary source or modification would not cause or significantly contribute to a violation of any ambient air quality standard.*

**03. Toxic Air Pollutants.** *Using the methods provided in Section 210, the emissions of toxic air pollutants from the stationary source or modification would not injure or unreasonably affect human or animal life or vegetation as required by Section 161. Compliance with all applicable toxic air pollutant carcinogenic increments and toxic air pollutant non-carcinogenic increments will also demonstrate preconstruction compliance with Section 161 with regards to the pollutants listed in Sections 585 and 586.*

Atmospheric dispersion modeling, using computerized simulations, is used to demonstrate compliance with both NAAQS and TAPs. Idaho Air Rules Section 202.02 states:

**02. Estimates of Ambient Concentrations.** *All estimates of ambient concentrations shall be based on the applicable air quality models, data bases, and other requirements specified in 40 CFR 51 Appendix W (Guideline on Air Quality Models).*

## **2.4 Significant Impact Level and Cumulative NAAQS Impact Analyses**

If specific criteria pollutant emission increases associated with the proposed permitting project cannot qualify for a BRC exemption as per Idaho Air Rules Section 221, then the permit cannot be issued unless the application demonstrates that applicable emission increases will not cause or significantly contribute to a violation of NAAQS, as required by Idaho Air Rules Section 203.02.

The first phase of a NAAQS compliance demonstration is to evaluate whether the proposed facility/project could have a significant impact to ambient air. Section 3.1.1 of this memorandum describes the applicability evaluation of Idaho Air Rules Section 203.02. The Significant Impact Level (SIL) analysis for a new facility or proposed modification to a facility involves modeling estimated criteria air pollutant emissions from the facility or modification to determine the potential impacts to ambient air. Air impact analyses are required by Idaho Air Rules to be conducted in accordance with methods outlined in Appendix W. Appendix W requires that facilities be modeled using emissions and operations representative of design capacity or as limited by a federally enforceable permit condition.

A facility or modification is considered to have a significant impact on air quality if maximum modeled impacts to ambient air exceed the established SIL listed in Idaho Air Rules Section 006 (referred to as a “significant contribution” in Idaho Air Rules) or as incorporated by reference as per Idaho Air Rules Section 107.03.b. Table 2 lists the applicable SILs.

If modeled maximum pollutant impacts to ambient air from the emission sources associated with a new facility or modification exceed the SILs, then a cumulative NAAQS impact analysis is necessary to demonstrate compliance with NAAQS and Idaho Air Rules Section 203.02.

A cumulative NAAQS impact analysis for attainment area pollutants involves assessing ambient impacts (typically the design values consistent with the form of the standard) from potential/allowable emissions resulting from the project and emissions from any nearby co-contributing sources (including existing emissions from the facility that are unrelated to the project), and then adding a DEQ-approved background concentration value to the modeled result that is appropriate for the criteria pollutant/averaging-period at the facility location and the area of significant impact. The resulting pollutant concentrations in ambient air are then compared to the NAAQS listed in Table 2. Table 2 also specifies the modeled design value that must be used for comparison to the NAAQS. NAAQS compliance is evaluated on a receptor-by-receptor basis for the modeling domain.

<b>Table 2. APPLICABLE REGULATORY LIMITS.</b>				
<b>Pollutant</b>	<b>Averaging Period</b>	<b>Significant Impact Levels<sup>a</sup> (µg/m<sup>3</sup>)<sup>b</sup></b>	<b>Regulatory Limit<sup>c</sup> (µg/m<sup>3</sup>)</b>	<b>Modeled Design Value Used<sup>d</sup></b>
PM <sub>10</sub> <sup>e</sup>	24-hour	5.0	150 <sup>f</sup>	Maximum 6 <sup>th</sup> highest <sup>g</sup>
PM <sub>2.5</sub> <sup>h</sup>	24-hour	1.2	35 <sup>i</sup>	Mean of maximum 8 <sup>th</sup> highest <sup>j</sup>
	Annual	0.2	12 <sup>k</sup>	Mean of maximum 1 <sup>st</sup> highest <sup>l</sup>
Carbon monoxide (CO)	1-hour	2,000	40,000 <sup>m</sup>	Maximum 2 <sup>nd</sup> highest <sup>n</sup>
	8-hour	500	10,000 <sup>m</sup>	Maximum 2 <sup>nd</sup> highest <sup>n</sup>
Sulfur Dioxide (SO <sub>2</sub> )	1-hour	3 ppb <sup>o</sup> (7.8 µg/m <sup>3</sup> )	75 ppb <sup>p</sup> (196 µg/m <sup>3</sup> )	Mean of maximum 4 <sup>th</sup> highest <sup>q</sup>
	3-hour	25	1,300 <sup>m</sup>	Maximum 2 <sup>nd</sup> highest <sup>n</sup>
	24-hour	5	365 <sup>m</sup>	Maximum 2 <sup>nd</sup> highest <sup>n</sup>
	Annual	1.0	80 <sup>r</sup>	Maximum 1 <sup>st</sup> highest <sup>n</sup>
Nitrogen Dioxide (NO <sub>2</sub> )	1-hour	4 ppb (7.5 µg/m <sup>3</sup> )	100 ppb <sup>s</sup> (188 µg/m <sup>3</sup> )	Mean of maximum 8 <sup>th</sup> highest <sup>t</sup>
	Annual	1.0	100 <sup>r</sup>	Maximum 1 <sup>st</sup> highest <sup>n</sup>
Lead (Pb)	3-month <sup>u</sup>	NA	0.15 <sup>r</sup>	Maximum 1 <sup>st</sup> highest <sup>n</sup>
	Quarterly	NA	1.5 <sup>r</sup>	Maximum 1 <sup>st</sup> highest <sup>n</sup>
Ozone (O <sub>3</sub> )	8-hour	40 TPY VOC <sup>v</sup>	70 ppb <sup>w</sup>	Not typically modeled

- <sup>a</sup> Idaho Air Rules Section 006 (definition for significant contribution) or as incorporated by reference as per Idaho Air Rules Section 107.03.b.
- <sup>b</sup> Micrograms per cubic meter.
- <sup>c</sup> Incorporated into Idaho Air Rules by reference, as per Idaho Air Rules Section 107.
- <sup>d</sup> The maximum 1<sup>st</sup> highest modeled value is always used for the significant impact analysis unless indicated otherwise. Modeled design values are calculated for each ambient air receptor.
- <sup>e</sup> Particulate matter with an aerodynamic diameter less than or equal to a nominal 10 micrometers.
- <sup>f</sup> Not to be exceeded more than once per year on average over 3 years.
- <sup>g</sup> Concentration at any modeled receptor when using five years of meteorological data.
- <sup>h</sup> Particulate matter with an aerodynamic diameter less than or equal to a nominal 2.5 micrometers.
- <sup>i</sup> 3-year mean of the upper 98<sup>th</sup> percentile of the annual distribution of 24-hour concentrations.
- <sup>j</sup> 5-year mean of the 8<sup>th</sup> highest modeled 24-hour concentrations at the modeled receptor for each year of meteorological data modeled. For the SIL analysis, the 5-year mean of the 1<sup>st</sup> highest modeled 24-hour impacts at the modeled receptor for each year.
- <sup>k</sup> 3-year mean of annual concentration.
- <sup>l</sup> 5-year mean of annual averages at the modeled receptor.
- <sup>m</sup> Not to be exceeded more than once per year.
- <sup>n</sup> Concentration at any modeled receptor.
- <sup>o</sup> Interim SIL established by EPA policy memorandum.
- <sup>p</sup> 3-year mean of the upper 99<sup>th</sup> percentile of the annual distribution of maximum daily 1-hour concentrations.
- <sup>q</sup> 5-year mean of the 4<sup>th</sup> highest daily 1-hour maximum modeled concentrations for each year of meteorological data modeled. For the significant impact analysis, the 5-year mean of 1<sup>st</sup> highest modeled 1-hour impacts for each year is used.
- <sup>r</sup> Not to be exceeded in any calendar year.
- <sup>s</sup> 3-year mean of the upper 98<sup>th</sup> percentile of the annual distribution of maximum daily 1-hour concentrations.
- <sup>t</sup> 5-year mean of the 8<sup>th</sup> highest daily 1-hour maximum modeled concentrations for each year of meteorological data modeled. For the significant impact analysis, the 5-year mean of maximum modeled 1-hour impacts for each year is used.
- <sup>u</sup> 3-month rolling average.
- <sup>v</sup> An annual emissions rate of 40 ton/year of VOCs is considered significant for O<sub>3</sub>.
- <sup>w</sup> Annual 4<sup>th</sup> highest daily maximum 8-hour concentration averaged over three years.

If the cumulative NAAQS impact analysis indicates a violation of the standard, the permit may not be issued if the proposed project has a significant contribution (exceeding the SIL) to the modeled violation. If project-specific impacts are below the SIL, then the project does not have a significant contribution to the specific violations.

Compliance with Idaho Air Rules Section 203.02 is generally demonstrated if: a) applicable specific criteria pollutant emission increases are at a level defined as BRC, using the criteria established by DEQ regulatory interpretation<sup>1</sup>; or b) all modeled impacts of the SIL analysis are below the applicable SIL or other level determined to be inconsequential to NAAQS compliance; or c) modeled design values of the

cumulative NAAQS impact analysis (modeling all emissions from the facility and co-contributing sources, and adding a background concentration) are less than applicable NAAQS at receptors where impacts from the proposed facility/modification exceeded the SIL or other identified level of consequence; or d) if the cumulative NAAQS analysis showed NAAQS violations, the impact of proposed facility/modification to any modeled violation was inconsequential (typically assumed to be less than the established SIL) for that specific receptor and for the specific modeled time when the violation occurred.

## **2.5 Toxic Air Pollutant Analyses**

Emissions of toxic substances are generally addressed by Idaho Air Rules Section 161:

*Any contaminant which is by its nature toxic to human or animal life or vegetation shall not be emitted in such quantities or concentrations as to alone, or in combination with other contaminants, injure or unreasonably affect human or animal life or vegetation.*

Permitting requirements for toxic air pollutants (TAPs) from new or modified sources are specifically addressed by Idaho Air Rules Section 203.03 and require the applicant to demonstrate to the satisfaction of DEQ the following:

*Using the methods provided in Section 210, the emissions of toxic air pollutants from the stationary source or modification would not injure or unreasonably affect human or animal life or vegetation as required by Section 161. Compliance with all applicable toxic air pollutant carcinogenic increments and toxic air pollutant non-carcinogenic increments will also demonstrate preconstruction compliance with Section 161 with regards to the pollutants listed in Sections 585 and 586.*

Per Idaho Air Rules Section 210, if the total project-wide emission increase of any TAP associated with a new source or modification exceeds screening emission levels (ELs) of Idaho Air Rules Section 585 or 586, then the ambient impact of the emission increase must be estimated. If ambient impacts are less than applicable Acceptable Ambient Concentrations (AACs) for non-carcinogens of Idaho Air Rules Section 585 and Acceptable Ambient Concentrations for Carcinogens (AACCs) of Idaho Air Rules Section 586, then compliance with TAP requirements has been demonstrated.

Idaho Air Rules Section 210.20 states that if TAP emissions from a specific source are regulated by the Department or EPA under 40 CFR 60, 61, or 63, then a TAP impact analysis under Section 210 is not required for that TAP. The DEQ permit writer evaluates the applicability of specific TAPs to the Section 210.20 exclusion.

## **3.0 Analytical Methods and Data**

This section describes the methods and data used in the analyses to demonstrate compliance with applicable air quality impact requirements. The DEQ Statement of Basis provides a discussion of the methods and data used to estimate criteria and TAP emission rates.

### **3.1 Emission Source Data**

Emissions of criteria pollutants and TAPs resulting from operation of the proposed modification were estimated by Paragon for various applicable averaging periods. The calculation of potential emissions is

the responsibility of the DEQ permit writer, and the representativeness and accuracy of emission estimates is not addressed in this modeling memorandum. DEQ air impact analysts are responsible for assuring that potential emission rates provided in the emission inventory are properly used in the model. The rates listed must represent the maximum allowable rate as averaged over the specified period.

Emission rates used in the impact modeling applicability analyses and any modeling analyses, as listed in this memorandum, should be reviewed by the DEQ permit writer and compared with those in the final emission inventory. All modeled criteria air pollutant and TAP emission rates must be equal to or greater than the facility's potential emissions calculated in the PTC emission inventory or proposed permit allowable emission rates.

### ***3.1.1 Modeling Applicability and Modeled Criteria Pollutant Emission Rates***

If project-specific emission increases for criteria pollutants would qualify for a BRC permit exemption as per Idaho Air Rules Section 221 if it were not for potential emissions of one or more pollutants exceeding the BRC threshold of 10 percent of emissions defined by Idaho Air Rules as significant, then a NAAQS compliance demonstration may not be required for those pollutants with emissions below BRC levels. DEQ's regulatory interpretation policy of exemption provisions of Idaho Air Rules is that: "A DEQ NAAQS compliance assertion will not be made by the DEQ modeling group for specific criteria pollutants having a project emissions increase below BRC levels, provided the proposed project would have qualified for a Category I Exemption for BRC emissions quantities except for the emissions of another criteria pollutant."<sup>1</sup> The interpretation policy also states that the exemption criteria of uncontrolled potential to emit (PTE) not to exceed 100 ton/year (Idaho Air Rules Section 220.01.a.i) is not applicable when evaluating whether a NAAQS impact analyses is required. A permit will be issued limiting PTE below 100 ton/year, thereby negating the need to maintain calculated uncontrolled PTE under 100 ton/year. The BRC exemption cannot be used to exempt a project from a pollutant-specific NAAQS compliance demonstration in most cases where a PTC is required for the action regardless of emission quantities, such as the modification of an existing emission or throughput limit.

A NAAQS compliance demonstration must be performed for pollutant increases that would not qualify for the BRC exemption from the requirement to demonstrate compliance with NAAQS.

Site-specific air impact modeling analyses may not be necessary for some pollutants, even where such emissions do not qualify for the BRC exemption. DEQ has developed modeling applicability thresholds, below which a site-specific modeling analysis is not required. DEQ generic air impact modeling analyses that were used to develop the modeling thresholds provide a conservative SIL analysis for projects with emissions below identified threshold levels. Project-specific modeling applicability thresholds are provided in the *Idaho Air Modeling Guideline*<sup>2</sup>. These thresholds were based on assuring an ambient impact of less than the established SIL for specific pollutants and averaging periods.

If total project-specific emission rate increases of a pollutant are below Level I Modeling Applicability Thresholds, then project-specific air impact analyses are not necessary for permitting. Use of Level II Modeling Applicability Thresholds are conditional, requiring DEQ approval. DEQ approval is based on dispersion-affecting characteristics of the emission sources such as stack height, stack gas exit velocity, stack gas temperature, distance from sources to ambient air, presence of elevated terrain, and potential exposure to sensitive public receptors.

Table 3 provides a comparison between facility-wide post-project PTE and modeling applicability thresholds. PTE emissions were calculated as the sum of the flare and IC engine emissions. Note that although PM<sub>10</sub> and PM<sub>2.5</sub> emissions remain unchanged from the previous 2018 modeling analysis, all

criteria pollutants were modeled to account for new background concentrations and updated meteorological data.

<b>Pollutant</b>	<b>Averaging Period</b>	<b>Emissions</b>	<b>Level I Modeling Thresholds</b>	<b>Level II Modeling Thresholds<sup>a</sup></b>	<b>Site-Specific Modeling Required?</b>
PM <sub>10</sub> <sup>b</sup>	24-hour	0.68 lb/hr <sup>c</sup>	0.22	2.6	Yes <sup>d</sup>
PM <sub>2.5</sub> <sup>e</sup>	24-hour	0.68 lb/hr	0.054	0.63	Yes <sup>d</sup>
	Annual	2.96 ton/yr <sup>f</sup>	0.35	4.1	Yes <sup>d</sup>
Carbon Monoxide (CO)	1-hour, 8-hour	44.68 lb/hr	15	175	Yes
Sulfur Dioxide (SO <sub>2</sub> )	1-hour, 3-hour, 24-hour	3.28 lb/hr	0.21	2.5	Yes
	Annual	14.36 ton/yr	1.2	14	Yes
Nitrogen Oxides (NOx)	1-hour	11.53 lb/hr	0.20	2.4	Yes
	Annual	50.49 ton/yr	1.2	14	Yes
Lead (Pb)	Annual	0 lb/mo <sup>g</sup>	14 lb/mo		No

- <sup>a</sup> Level II Modeling Thresholds were not approved for use with this project.
- <sup>b</sup> Particulate matter with an aerodynamic diameter less than or equal to a nominal 10 micrometers.
- <sup>c</sup> Pounds per hour.
- <sup>d</sup> PM<sub>10</sub> and PM<sub>2.5</sub> emissions were unchanged from the previous 2018 modeling analysis. However, both pollutants and all applicable averaging periods were modeled to account for new background concentrations and updated meteorological data.
- <sup>e</sup> Particulate matter with an aerodynamic diameter less than or equal to a nominal 2.5 micrometers.
- <sup>f</sup> Tons per year.
- <sup>g</sup> Pounds per month.

As indicated in Table 3, modeling was performed for all criteria pollutants based on the Level I modeling thresholds. Lead (Pb) was not modeled because it is not present in landfill gas (LFG). Level II modeling thresholds were not approved by DEQ for this project.

Table 4 lists criteria pollutant emission rates used in the cumulative NAAQS impact analyses. A SIL analysis was not performed by the facility since preliminary modeling results showed that SILs were exceeded. NAAQS modeling was based on all sources (flare and the two IC engines) operating at 8,760 hours per year for conservatism.

<b>Source ID</b>	<b>Source Description</b>	<b>Pollutant</b>	<b>Averaging Period</b>	<b>Emission Total<sup>a</sup></b>
F1	Flare	PM <sub>2.5</sub>	24-hour	0.19 lb/hr <sup>b</sup>
			Annual	0.81 tpy <sup>c</sup>
		PM <sub>10</sub>	24-hour	0.19 lb/hr
		NOx	1-hour	0.58 lb/hr
			Annual	2.54 tpy
		CO	1-hour	0.67 lb/hr
			8-hour	0.67 lb/hr
		SO <sub>2</sub>	1-hour	0.90 lb/hr
			3-hour	0.90 lb/hr
24-hour	0.90 lb/hr			
Annual	3.95 tpy			
E1	IC Engine	PM <sub>2.5</sub>	24-hour	0.24 lb/hr
			Annual	1.07 tpy
		PM <sub>10</sub>	24-hour	0.24 lb/hr
		NOx	1-hour	5.47 lb/hr

E2	IC Engine	CO	Annual	23.98 tpy	
			1-hour	22.01 lb/hr	
			8-hour	22.01 lb/hr	
		SO <sub>2</sub>	1-hour	1.19 lb/hr	
			3-hour	1.19 lb/hr	
			24-hour	1.19 lb/hr	
		PM <sub>2.5</sub>	Annual	5.21 tpy	
			24-hour	0.24 lb/hr	
				1.07 tpy	
			PM <sub>10</sub>	24-hour	0.24 lb/hr
				NOx	1-hour
			Annual		23.98 tpy
CO	1-hour		22.01 lb/hr		
	8-hour		22.01 lb/hr		
	SO <sub>2</sub>		1-hour	1.19 lb/hr	
3-hour		1.19 lb/hr			
24-hour		1.19 lb/hr			
Annual	5.21 tpy				

a. Modeled emission rate is the total potential/allowable emission rate for the averaging period specified for the pollutant.

b. Pounds per hour.

c. Tons per year

Ozone (O<sub>3</sub>) differs from other criteria pollutants in that it is not typically emitted directly into the atmosphere. O<sub>3</sub> is formed in the atmosphere through reactions of VOCs, NOx, and sunlight. Atmospheric dispersion models used in stationary source air permitting analyses cannot be used to estimate O<sub>3</sub> impacts resulting from VOC and NOx emissions from an industrial facility. O<sub>3</sub> concentrations resulting from area-wide emissions are predicted by using more complex airshed models such as the Community Multi-Scale Air Quality (CMAQ) modeling system. Use of the CMAQ model is very resource-intensive and DEQ asserts that performing a CMAQ analysis for a particular permit application is not typically a reasonable or necessary requirement for air quality permitting. Addressing secondary formation of O<sub>3</sub> within the context of permitting a new stationary source has been somewhat addressed in EPA regulation and policy. As stated in a letter from Gina McCarthy of EPA to Robert Ukeiley, acting on behalf of the Sierra Club (letter from Gina McCarthy, Assistant Administrator, United States Environmental Protection Agency, to Robert Ukeiley, January 4, 2012):

*... footnote 1 to sections 51.166(I)(5)(I) of the EPA's regulations says the following: "No de minimis air quality level is provided for ozone. However, any net emission increase of 100 tons per year or more of volatile organic compounds or nitrogen oxides subject to PSD would be required to perform an ambient impact analysis, including the gathering of air quality data."*

*The EPA believes it unlikely a source emitting below these levels would contribute to such a violation of the 8-hour ozone NAAQS, but consultation with an EPA Regional Office should still be conducted in accordance with section 5.2.1.c. of Appendix W when reviewing an application for sources with emissions of these ozone precursors below 100 TPY."*

DEQ determined it was not appropriate or necessary to require a quantitative source-specific O<sub>3</sub> impact analysis because allowable emission estimates of VOCs and NOx are below the 100 tons/year threshold.

### 3.1.2 TAPs Modeling Applicability

TAP emission regulations under Idaho Air Rules Section 210 are only applicable for new or modified sources constructed after July 1, 1995.

Facility-wide emissions of hydrogen sulfide increased from the previous 2018 modeling analysis. However, the change in emission rate for hydrogen sulfide was below the applicable screening emission level (EL) listed in Idaho Air Rules Section 585. Therefore, modeling was not required for this TAP per IDAPA 58.01.01.585.

Facility-wide emissions of formaldehyde exceed the applicable EL listed in Idaho Air Rules Section 586. However, it is a federal HAP and the combustion engine is covered by New Source Performance Standards (NSPS) and National Emission Standards for Hazardous Air Pollutants (NESHAP). Therefore, TAPs modeling of formaldehyde was not conducted per IDAPA 58.01.01.20(a).

No TAPs were modeled for this project.

### 3.1.3 Emission Release Parameters

Table 5 lists the emission release parameters, including stack height, exhaust temperature, exhaust velocity, and stack diameter for emission sources modeled in the air impact analyses in metric units (English units are in parentheses). Emission point release parameters were based on information provided in the application. Justification for emission release parameters is summarized in the next section.

<b>Table 5. POINT SOURCE EMISSION RELEASE PARAMETERS IN METRIC UNITS (ENGLISH UNITS IN PARENTHESES).</b>								
Source ID	Description	UTM <sup>a</sup> Coordinates		Stack Height in m (ft) <sup>c</sup>	Stack Exhaust Temp. in K (°F) <sup>d</sup>	Stack Exhaust Velocity in m/sec (fps) <sup>e</sup>	Stack Diameter in m (ft)	Orient. Of Release <sup>f</sup>
		Easting-X in m <sup>b</sup>	Northing-Y in m					
F1	Flare	387,756.90	4,737,543.20	13.0 (42.6)	1,273.0 (1,831.7)	20.00 (65.62)	0.59 (1.94)	D
E1	IC Engine	387,786.10	4,737,579.30	9.5 (31.0)	727.6 (850.0)	15.51 (50.89)	0.41 (1.33)	D
E2	IC Engine	387,785.40	4,737,579.80	9.5 (31.0)	727.6 (850.0)	15.51 (50.89)	0.41 (1.33)	D

- a. Universal Transverse Mercator.
- b. m: meters.
- c. ft: feet.
- d. K: Kelvin; °F: degrees Fahrenheit.
- e. m/sec: meters per second; fps: feet per second.
- f. D: default (vertical, uninterrupted release).

### 3.1.4 Emission Release Parameter Justification

#### Flare

##### **Model ID: F1**

The existing flare provides combustion of any LFG during an outage of one or both IC engines. The modeled stack parameters for the flare were based on EPA's AERSCREEN3 manual to assess the enhanced buoyancy occurring with open flare sources.<sup>3</sup> The AERSCREEN3 method sets the exit gas velocity and temperature constant at 20 meters/second (65.62 feet per second) and 1,273 K (1,831.7°F), respectively. The stack diameter (*D*) is then calculated based on the heat released from the combustion of gases in the flare using the following equation:

$$D = 9.88 \times 10^{-4}(q_n)^{0.5}$$

where

$D$ : effective stack diameter in meters; and  
 $q_n$ : net heat released in calories/second.

The net heat released ( $q_n$ ) is calculated from the gross heat released using the following equation:

$$q_n = 0.45q$$

where

$q$ : gross heat released in calories/second.

Using a gross heat release ( $q$ ) of 780,000 calories/second, a net heat release ( $q_n$ ) of 351,000 calories/second was calculated, giving a final effective diameter ( $D$ ) of 0.59 meters (1.94 feet).

An effective stack height was also calculated by the AERSCREEN3 method using the following equation:

$$H_e = H_a + [(4.56 \times 10^{-3})(q^{0.478})]$$

where

$H_e$ : effective stack height in meters;  
 $H_a$ : actual height of flare at tip in meters.

The actual flare height ( $H_a$ ) is 10 meters, giving an effective height ( $H_e$ ) of 13.0 meters (42.6 feet).

The flare was modeled with vertical, uninterrupted release.

Flare release parameters were appropriately documented and justified. These stack parameters were unchanged from the 2018 modeling analysis.

## **Internal Combustion (IC) Engines 1 and 2**

### **Model IDs: E1 and E2**

The IC engines are existing sources with vertical, uninterrupted release stacks. The listed manufacturer for both IC engines (model 3520C) is Caterpillar. They operate continuously, except for scheduled maintenance, which occurs not more than 5% of all annual hours. All PTE emissions used in the modeling analysis were based on 8,760 operating hours with the engines operating at 100% load.

The IC engines were modeled with an exhaust temperature of 727.6 K (850.0°F). This is more conservative than the March 30, 2017 source test report documenting an exhaust temperature of 750.9 K (892.0°F) from IC engine E1.

The stack exit diameter of both IC engines was modeled at 0.41 meters (1.33 feet) to represent the outlet

of the stacks. Both IC engines have a stack height of 9.5 meters (31.0 feet). They were modeled with an exit velocity of 15.51 meters/second (50.89 feet/second) based on a flow of 2 cubic meters per second that was calculated from the 2017 source test report.

IC engine release parameters were appropriately documented and justified. These stack parameters were unchanged from the 2018 modeling analysis.

### 3.2 Background Concentrations

Background concentrations are used if a cumulative NAAQS impact analysis is needed to demonstrate compliance with applicable NAAQS. Background design values (DV) for all criteria pollutants were obtained from the Northwest International Air Quality Environmental Science and Technology Consortium (NW AIRQUEST; <https://arcg.is/1jXmHH>) using the project site coordinates. These background air pollutant levels are based on regional scale air pollution modeling of pollutants in Washington, Oregon, and Idaho, with modeling results adjusted according to available monitoring data. The values from NW AIRQUEST are listed in Table 6.

<b>Pollutant</b>	<b>Averaging Period</b>	<b>Background Concentration (<math>\mu\text{g}/\text{m}^3</math>)<sup>a,b</sup></b>
PM <sub>2.5</sub> <sup>c</sup>	24-hr	13.3
	Annual	3.6
PM <sub>10</sub> <sup>d</sup>	24-hr	70.0
NO <sub>2</sub> <sup>e</sup>	1-hr	25.0
	Annual	3.2
SO <sub>2</sub> <sup>f</sup>	1-hr	13.6
	8-hr	17.3
	24-hr	8.1
	Annual	1.8
CO <sup>g</sup>	1-hr	2,223
	8-hr	1,180

- a. Micrograms per cubic meter.
- b. NW AIRQUEST ambient background lookup tool, mid 2014–mid 2017.
- c. Particulate matter with an aerodynamic diameter of 2.5 microns or less.
- d. Particulate matter with an aerodynamic diameter of 10 microns or less.
- e. Nitrogen dioxide.
- f. Sulfur dioxide.
- g. Carbon monoxide.

### 3.3 Impact Modeling Methodology

This section describes the modeling methods used by Trinity on behalf of FHMRL to demonstrate preconstruction compliance with applicable air quality standards.

#### 3.3.1 General Overview of Impact Analyses

Trinity performed the project-specific air pollutant emission inventory and air impact analyses that were submitted with the application. The submitted information/analyses, in combination with results from DEQ’s air impact analyses, demonstrate compliance with applicable air quality standards to DEQ’s satisfaction, provided the facility is operated as described in the submitted application and in this memorandum.

Table 7 provides a brief description of parameters used in the modeling analyses.

<b>Table 7. MODELING PARAMETERS.</b>		
<b>Parameter</b>	<b>Description/Values</b>	<b>Documentation/Addition Description</b>
General Facility Location	Bannock County, Idaho	The area is an attainment or unclassified area for all criteria pollutants.
Model	AERMOD	AERMOD with the PRIME downwash algorithm, version 19191.
Meteorological Data	Soda Springs/P4 surface data; Boise upper air data	See Section 3.3.5 of this memorandum for additional details on the meteorological data.
Terrain	Considered	National Elevation Dataset (NED) was acquired from the USGS for the surrounding area. AERMAP version 19191 was used to process terrain elevation data for all buildings and receptors. See Section 3.3.6 for more details.
Building Downwash	Considered	See Section 3.3.7 for more details.
NOx Chemistry	Tier 2	Tier 2 Ambient Ratio Method (ARM2) assumes default minimum (0.5) and maximum (0.9) ambient ratios of NO <sub>2</sub> /NO <sub>x</sub> . See Section 3.3.8.
Receptor Grid	<b>SIL Analysis</b> SIL Analysis was not performed for this project.	
	<b>Cumulative NAAQS Impact Analysis</b> The selection of receptors for use in the Cumulative NAAQS Impact Analysis is as follows (see Section 3.3.10):	
	Grid 1	20-meter spacing in areas of maximum impact (northwest of facility)
	Grid 2	100-meter spacing at ambient air boundary
	Grid 3	200-meter spacing out to 5,000 meters
<b>TAPs Analysis</b> No TAPs were modeled for this project.		

### 3.3.2 Modeling Protocol

On December 11, 2019, representatives from Bannock County’s Public Works and Solid Waste Departments, Paragon, and Trinity conducted a pre-application meeting with DEQ to discuss project modifications to the FHMRL facility. It was agreed in the meeting that DEQ’s modeling team would review the most recent modeling protocol which was submitted by FHMRL on August 29, 2016. However, DEQ noted that the initial PTC application that was submitted by FHMRL on September 21, 2017 was determined incomplete by DEQ on October 24, 2017. FHMRL submitted a revised application on November 20, 2017 but it was determined incomplete again on December 20, 2017. FHMRL submitted a revised modeling analysis on February 21, 2018 and it was deemed complete by DEQ on March 15, 2018.

DEQ’s modeling protocol review therefore relied more on the 2018 modeling analysis, instead of the outdated modeling protocol from 2016. DEQ further noted that although revised modeling files were submitted by the applicant in 2018, no revised dispersion modeling report was submitted.

DEQ sent a conditional protocol approval to Paragon and Trinity on January 10, 2020.

### 3.3.3 Modeling Methodology

Project-specific modeling and other required impact analyses were generally conducted using data and methods described in the *Idaho Air Quality Modeling Guideline*<sup>2</sup>.

### 3.3.4 Model Selection

Idaho Air Rules Section 202.02 requires that estimates of ambient concentrations be based on air quality models specified in Appendix W. The refined, steady-state, multiple-source, Gaussian dispersion model

AERMOD was promulgated as the replacement model for ISCST3 in December 2005. AERMOD retains the single straight-line trajectory of ISCST3, but it includes more advanced algorithms to assess turbulent mixing processes in the planetary boundary layer for both convective and stable stratified layers.

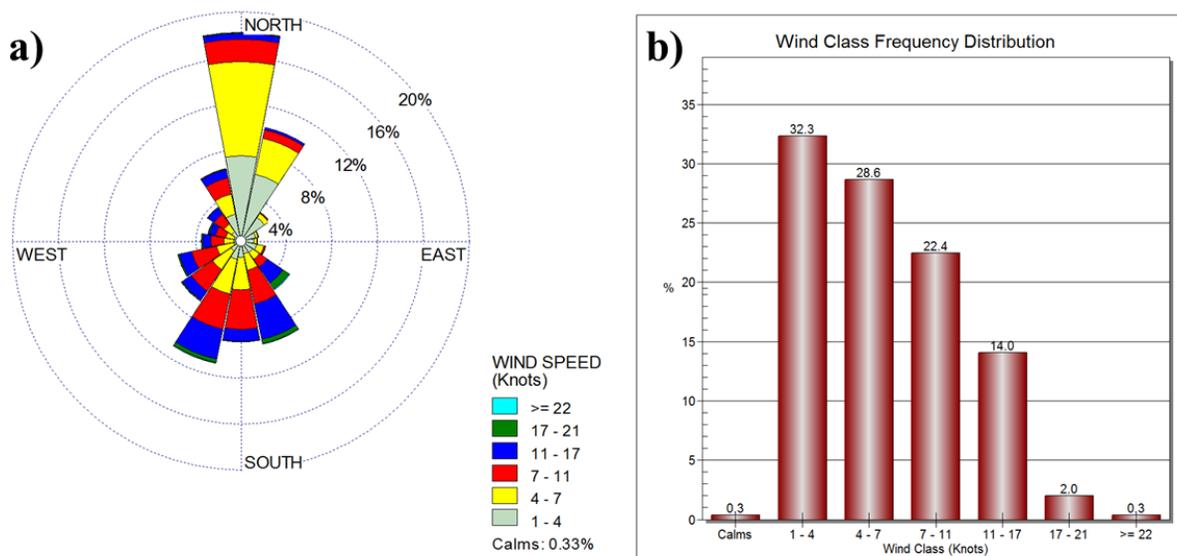
AERMOD version 19191 was used by Trinity for the modeling analyses to evaluate impacts of the facility. This version was the current version at the time the application was received by DEQ.

### 3.3.5 Meteorological Data

DEQ processed a meteorological dataset collected at the P4 facility near Soda Springs, Idaho for the period 2004-2008. National Weather Service (NWS) surface data from Pocatello, Idaho (KPIH; site ID 725780-24156) were also downloaded for the years 2004-2008. The upper air soundings required by AERMET were taken from the Boise, Idaho Airport station (KBOI, site ID 24131). Surface characteristics were determined by DEQ staff using AERSURFACE version 13016. DEQ modeling staff evaluated annual moisture conditions for the AERSURFACE runs based on thirty years of precipitation data. Conditions were determined to be “wet” for 2005 and “average” for 2004, 2006, 2007, and 2008. Average moisture content is defined as within a 30 percentile of the 30-year mean of 11.3 inches. Calms were relatively low, and less than 1 percent of the data were missing from the 5-year record.

Figure 1 shows a wind rose and wind speed histogram in Soda Springs, Idaho. AERMINUTE version 15272 was used to process Automated Surface Observing Systems (ASOS) wind data for use in AERMET. AERMET version 19191 was used to process surface and upper air data and to generate a model-ready meteorological data input file. The “adjust u star” (ADJ\_U\*) option was applied in AERMET to enhance model performance during low wind speeds under stable conditions. DEQ provided meteorological data to Trinity, with and without the ADJ\_U\* option enabled. In the submitted modeling files, Trinity used the meteorological data with the ADJ\_U\* option enabled.

**Figure 1. (a) WIND ROSE AND (b) WIND SPEED HISTOGRAM IN SODA SPRINGS, IDAHO.**



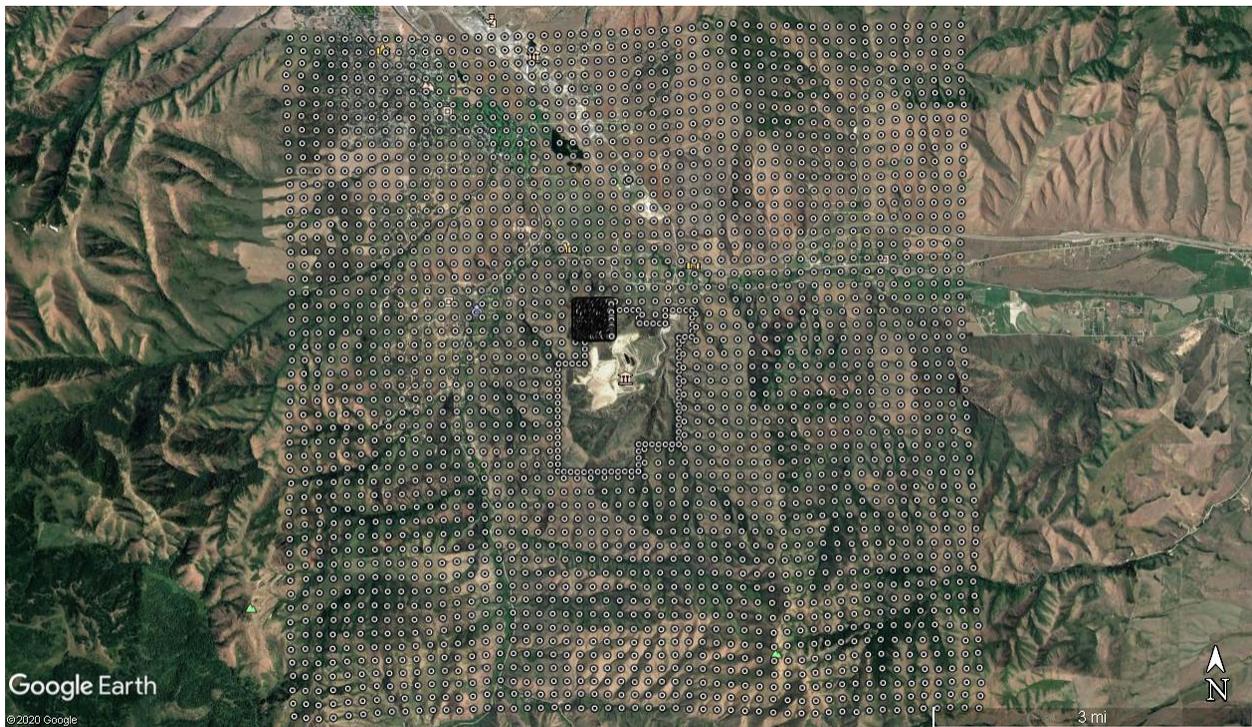
DEQ determined that the meteorological data in Soda Springs were representative for modeling at the FHMRL facility after an adjustment of 135 degrees, which rotates the wind patterns to match the orientation of winds collected at the facility location.

### 3.3.6 *Effects of Terrain on Modeled Impacts*

Submitted ambient air impact analyses used terrain data extracted from United States Geological Survey (USGS) National Elevation Dataset (NED) files.

The terrain preprocessor AERMAP version 19191 was used by Trinity to extract the elevations from the NED files and assign them to receptors in the modeling domain in a format usable by AERMOD. AERMAP also determined the hill-height scale for each receptor. The hill-height scale is an elevation value based on the surrounding terrain which has the greatest effect on that individual receptor. AERMOD uses those heights to evaluate whether the emissions plume has sufficient energy to travel up and over the terrain or if the plume will travel around the terrain. Figure 2 depicts the full receptor grid used in the analyses, overlaid on a terrain image from Google Earth.

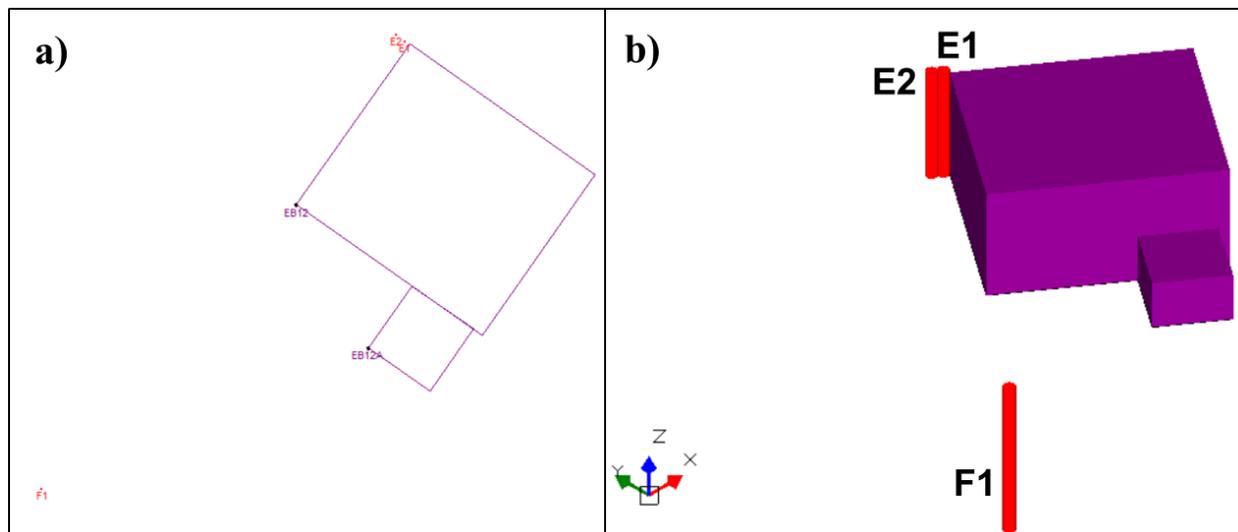
**Figure 2. THE FULL RECEPTOR GRID CENTERED AT THE FORT HALL MINE ROAD LANDFILL FACILITY IN BANNOCK COUNTY, IDAHO.**



### 3.3.7 *Facility Layout and Downwash*

Figure 3 shows the facility's structures and emission sources in the modeling analyses. Red dots in Figure 3a represent point sources. Figure 3b depicts a three-dimensional view of the modeled buildings and point sources, as viewed from the southwest.

**Figure 3. (a) FHMRL'S MODEL SETUP WITH POINT SOURCES LABELED IN RED, AND (b) THREE-DIMENSIONAL VIEW OF FHMRL'S MODEL SETUP AS VIEWED FROM THE SOUTHWEST.**



DEQ verified proper identification of the site location, equipment locations, and the ambient air boundary by comparing a graphical representation of the modeling input file to plot plans submitted in the application. Aerial photographs on Google Earth (available at <https://www.google.com/earth>) were also used to assure that horizontal coordinates were accurate as described in the application.

Potential downwash effects on emission plumes were accounted for in the model by using building dimensions and locations (locations of building corners, base elevation, and building heights). Dimensions and orientation of proposed buildings were used as input to the Building Profile Input Program for the Plume Rise Model Enhancements downwash algorithm (BPIP-PRIME version 04274) to calculate direction-specific dimensions and Good Engineering Practice (GEP) stack height information for input to AERMOD.

### 3.3.8 *NOx Chemistry*

The atmospheric chemistry of NO, NO<sub>2</sub>, and O<sub>3</sub> complicates accurate prediction of NO<sub>2</sub> impacts resulting from NO<sub>x</sub> emissions. The conversion of NO to NO<sub>2</sub> can be conservatively addressed through the use of several methods as outlined in a *2014 EPA NO<sub>2</sub> Modeling Clarification Memorandum*.<sup>4</sup> The guidance outlines a three-tiered approach:

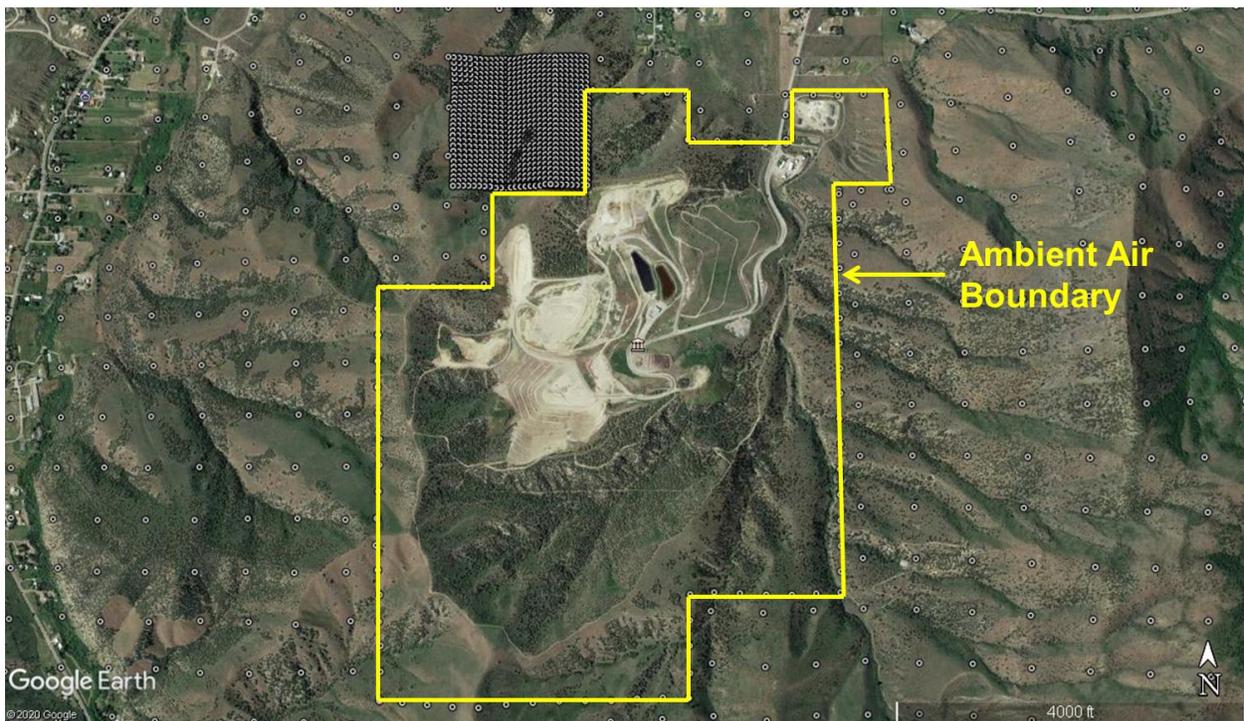
- Tier 1 – assume full conversion of NO to NO<sub>2</sub> where total NO<sub>x</sub> emissions are modeled and modeled impacts are assumed to be 100 percent NO<sub>2</sub>.
- Tier 2 – use an ambient ratio to adjust impacts from the Tier 1 analysis.
- Tier 3 – use a detailed screening method to account for NO/NO<sub>2</sub>/O<sub>3</sub> chemistry such as the Ozone Limiting Method (OLM) or the Plume Volume Molar Ratio Method (PVMRM).

Trinity used the ARM2 method, a Tier 2 analysis method which assumes an ambient equilibrium between NO and NO<sub>2</sub>, in which the conversion of NO to NO<sub>2</sub> is predicted using hourly ambient NO<sub>x</sub> monitoring data. ARM2 has been adopted by the EPA as a default regulatory Tier 2 option. A minimum and maximum NO<sub>2</sub>/NO<sub>x</sub> ratio of 0.5 and 0.9, respectively, were specified in the model.

### 3.3.9 Ambient Air Boundary

Ambient air is defined in Section 006 of the Idaho Air Rules as “that portion of the atmosphere, external to buildings, to which the general public has access.” The ambient air boundary for the FHMRL facility is based on the property boundary, as shown below in Figure 4. The four cells of the landfill are completely fenced; however, not all fencing is located at the property line boundary of the 5.75-mile perimeter. Steep terrain with no road access makes a “natural defense” against intrusion into these areas. In addition, the facility is controlled by an attended gate. All roads and historic trails crossing or on the property are gated and locked. Vehicle access to the entire property is restricted to a single entrance that is controlled by a gate which is attended during all hours that the landfill is open. DEQ determined that the facility is adequately able to preclude public access to areas excluded from the air impact assessment. DEQ assumes that the landfill is only open to those having business with the landfill, and that members of the general public not conducting business with the landfill would be asked to leave.

**Figure 4. FORT HALL MINE ROAD LANDFILL AMBIENT AIR BOUNDARY.**



### 3.3.10 Receptor Network

DEQ determined that the receptor grid used in the submitted modeling analyses was adequate to resolve maximum modeled impacts.

Table 7 describes the receptor network used in the submitted modeling analyses. The full grid, along with the fence-line receptors, includes a total of 4,920 receptors (Figure 2). The receptor grids used in the model provided good resolution of the maximum design concentrations for the project and provided extensive coverage. The full receptor grid was used for the cumulative NAAQS impact analysis. SIL analysis was not performed for this project.

DEQ determined that the receptor network was effective in reasonably assuring compliance with applicable air quality standards at all ambient air locations.

### ***3.3.11 Good Engineering Practice Stack Height***

An allowable good engineering practice (GEP) stack height may be established using the following equation in accordance with Idaho Air Rules Section 512.03.b:

$H = S + 1.5L$ , where:

H = good engineering practice stack height measured from the ground-level elevation at the base of the stack.

S = height of the nearby structure(s) measured from the ground-level elevation at the base of the stack.

L = lesser dimension, height or projected width, of the nearby structure.

All source stack release heights at the FHMRL facility are below GEP stack height. Therefore, consideration of downwash caused by nearby buildings was required.

## **4.0 NAAQS and TAPs Impact Modeling Results**

This section describes the air impact modeling results for both NAAQS and TAPs analyses.

### ***4.1 Results for NAAQS Analyses***

#### ***4.1.1 Significant Impact Level Analyses***

A SIL Analysis was not performed for this project since preliminary modeling results showed that SILs were exceeded for most criteria pollutants, and therefore a Cumulative NAAQS Impact Analysis would be required to demonstrate NAAQS compliance.

#### ***4.1.2 Cumulative NAAQS Impact Analyses***

Table 8 provides results for the Cumulative NAAQS Impact Analysis. The full receptor grid described in Table 7 of this modeling memo was used. For each modeled pollutant, the total impact was calculated by adding the design value (DV) of the impact to the ambient background value. The sum was then compared to the NAAQS. Ambient impacts for the FHMRL facility, when combined with approved ambient backgrounds, were below the NAAQS at all receptors.

<b>Table 8. RESULTS FOR CUMULATIVE NAAQS IMPACT ANALYSES.</b>						
<b>Pollutant</b>	<b>Averaging Period</b>	<b>Modeled Design Value Concentration (<math>\mu\text{g}/\text{m}^3</math>)<sup>a</sup></b>	<b>Background Concentration (<math>\mu\text{g}/\text{m}^3</math>)</b>	<b>Total Ambient Impact (<math>\mu\text{g}/\text{m}^3</math>)</b>	<b>NAAQS (<math>\mu\text{g}/\text{m}^3</math>)</b>	<b>Percent of NAAQS</b>
PM <sub>2.5</sub> <sup>b</sup>	24-hour	1.67	13.3	15.0	35	42.9%
	Annual	0.34	3.6	3.9	12	32.5%
PM <sub>10</sub> <sup>c</sup>	24-hour	2.8	70.0	72.8	150	48.5%
NO <sub>2</sub> <sup>d</sup>	1-hour	132.7	25.0	157.7	188	83.9%
	Annual	5.9	3.2	9.1	100	9.1%
SO <sub>2</sub> <sup>e</sup>	1-hour	69.4	13.6	83.0	196	42.3%
	3-hour	47.5	17.3	64.8	1,300	5.0%
	24-hr	15.7	8.1	23.8	365	6.5%
	Annual	1.6	1.8	3.4	80	4.3%
CO <sup>f</sup>	1-hour	1,345.0	2,223	3,568.0	40,000	8.9%
	8-hour	528.0	1,180	1,708.0	10,000	17.1%

a. Micrograms per cubic meter.

b. Particulate matter with an aerodynamic diameter less than or equal to a nominal 2.5 micrometers.

c. Particulate matter with an aerodynamic diameter less than or equal to a nominal 10 micrometers.

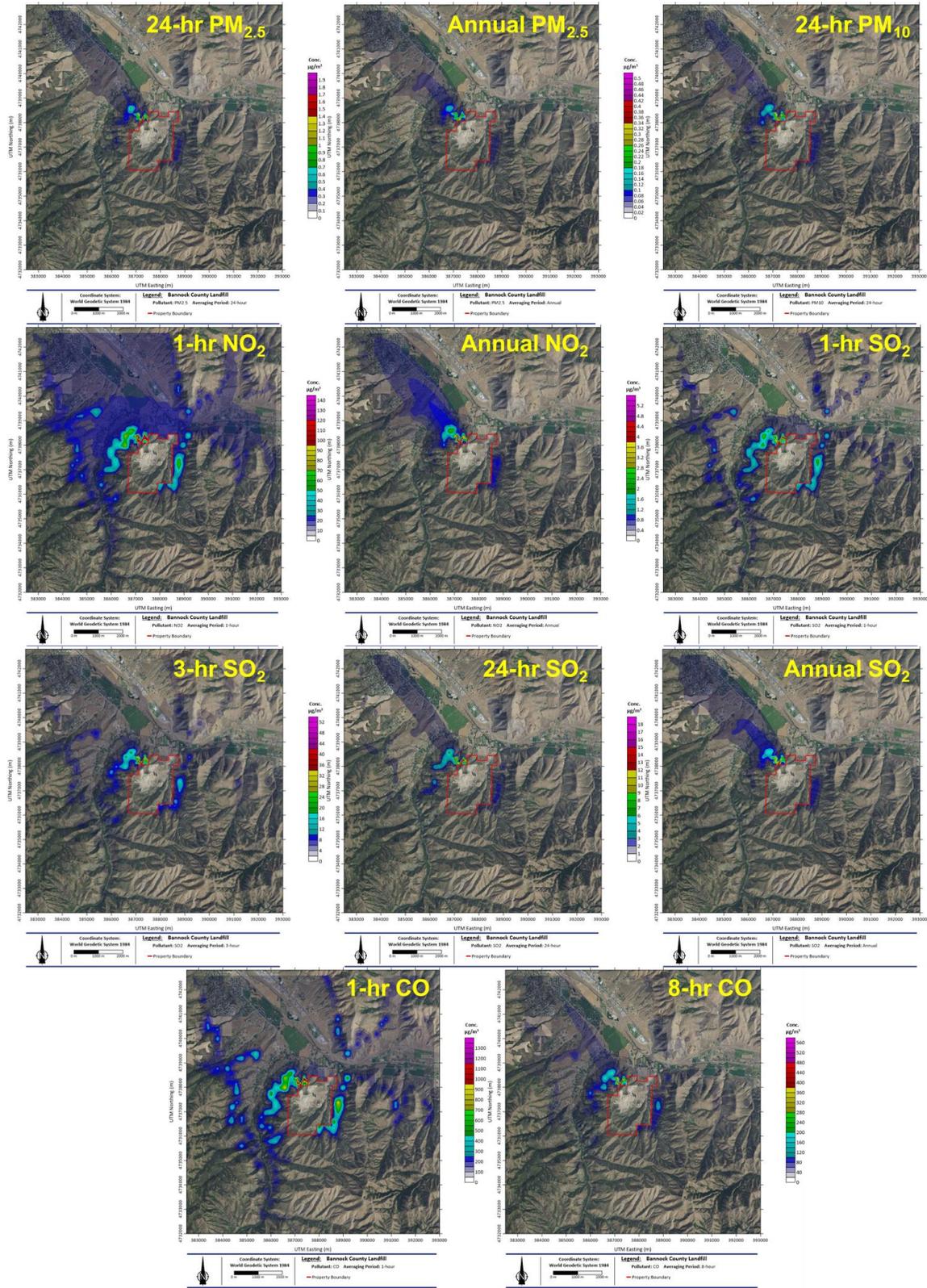
d. Nitrogen dioxide.

e. Sulfur dioxide.

f. Carbon monoxide.

Figure 5 shows plots of design value concentrations for all modeled criteria pollutants. High design values are located northwest and east of the facility. Maximum DVs are located directly northwest of the facility, which is adequately represented by the tighter receptor grids as shown in Figure 4.

**Figure 5. MODELED DESIGN VALUES FOR CUMULATIVE NAAQS IMPACT ANALYSES.**



#### **4.2 Results for TAPs Impact Analyses**

No TAPs were modeled for this analysis.

#### **5.0 Conclusions**

The information submitted with the PTC application, combined with DEQ air impact analyses, demonstrated to DEQ's satisfaction that emissions from the Fort Hall Mine Road Landfill modification project will not cause or significantly contribute to a violation of any applicable ambient air quality standard or TAP increment.

## References

1. *Policy on NAAQS Compliance Demonstration Requirements*. Idaho Department of Environmental Quality Policy Memorandum. July 11, 2014.
2. *State of Idaho Guideline for Performing Air Quality Impact Analyses*. Idaho Department of Environmental Quality. September 2013. State of Idaho DEQ Air Doc. ID AQ-011. Available at <http://www.deq.idaho.gov/media/1029/modeling-guideline.pdf>.
3. *AERSCREEN User's Guide*. U.S. Environmental Protection Agency. EPA-454/B-16-004. December 2016.
4. *Clarification on the Use of AERMOD Dispersion Modeling for Demonstrating Compliance with the NO<sub>2</sub> National Ambient Air Quality Standard*. Office of Air Quality Planning and Standards. Air Quality Modeling Group. Research Triangle Park, NC. Guidance memorandum from R. Chris Owen and Roger Brode to Regional Dispersion Modeling Contacts. September 30, 2014.

## **APPENDIX C – FACILITY DRAFT COMMENTS**

**The following comments were received from the facility on June 23, 2020:**

**Facility Comment:** Page 5 - Please adjust the Formaldehyde limit from 17.6 to 17.64 to match the significant digits of the rest of this table. We propose adding note e to Table 3.2 - Compliance with SO<sub>2</sub> requirements will be completed by confirming the total reduced sulfurs (TRS) levels remain below 300 ppmv.

**DEQ Response:** Facility Request granted.

## **APPENDIX D – FRA REVIEW**

## Section 4. Applicable Requirements

- 4.1 Federal Requirements
- 4.2 State of Idaho Requirements

## FHMRL Updated Regulatory Analysis

**Notes:**

■ This regulatory analysis is based on the FHMRL facility as configured and permitted with one existing open flare and two existing stationary spark-ignition internal combustion engine emissions rates. Primary sources include 1) existing open flare F1, 2) existing engine E1, and 3) existing engine E2. The pending regulatory action is associated with modifying the existing permitted landfill gas emissions inventories for the engines and adjusting the air dispersion modeling analysis to modify the existing PTC P-2009-0146.

**Contents:**

<b>4.1</b>	<b>Federal Requirements</b>	
4.1.1	40 CFR 52 Subpart A	PSD
4.1.2	40 CFR 60 Subpart A	NSPS GENERAL PROVISIONS (40 CFR 60)
4.1.3	40 CFR 60 Subpart Cc	EMISSIONS GUIDELINES -- MSW LANDFILLS
4.1.4	40 CFR 60 Subpart Cf	EMISSIONS GUIDELINES -- MSW LANDFILLS
4.1.5	40 CFR 60 Subpart E	INCINERATORS (N/A this Application)
4.1.6	40 CFR 60 Subpart JJJJ	NSPS FOR STATIONARY SPK IGNIT IC ENGINES
4.1.7	40 CFR 60 Subpart WWW	NSPS FOR MSW LANDFILLS < July 7, 2014
4.1.8	40 CFR 60 Subpart XXX	NSPS FOR MSW LANDFILLS > July 7, 2014
4.1.9	40 CFR 61 Subpart M	NESHAPS FOR ASBESTOS
4.1.10	40 CFR 63 Subpart A	NESHAPS APPLICABILITY
4.1.11	40 CFR 63 Subpart AAAA	NESHAPS FOR MSW LANDFILLS
4.1.12	40 CFR 63 Subpart ZZZZ	NESHAPS FOR RICE ENGINES
4.1.13	40 CFR 70	TITLE V CLASSIFICATION
4.1.14	40 CFR 82 Subpart F	FREON MANAGEMENT
4.1.15	40 CFR 98 Subpart A et seq.	REPORTING GREENHOUSE GAS EMISSIONS
<b>4.2</b>	<b>Idaho Requirements</b>	
4.2.1	IDAPA 58.01.01.123	CERTIFICATION OF REGULATORY SUBMITTALS
4.2.2	IDAPA 58.01.01.200 et seq.	PERMITS TO CONSTRUCT
4.2.3	IDAPA 58.01.01.300 et seq.	OPERATING PERMITS
4.2.4	IDAPA 58.01.01.401&577	TIER II PERMITS AND FLOURIDES
4.2.5	IDAPA 58.01.01.585, 586	TOXIC AIR POLLUTANTS
4.2.6	IDAPA 58.01.01.590	NEW SOURCE PERFORMACE STANDARDS
4.2.7	IDAPA 58.01.01.591	NATIONAL EMISSION STANDARDS FOR HAPs
4.2.8	IDAPA 58.01.01.625	VISIBLE EMISSIONS
4.2.9	IDAPA 58.01.01.650-651	FUGITIVE DUST
4.2.10	IDAPA 58.01.01.675-681	FUEL BURNING EQUIPMENT (N/A this Application)
4.2.11	IDAPA 58.01.01.702 & 703	PARTICULATE MATTER –PROCESS (N/A this App)
4.2.12	IDAPA 58.01.01.775	ODOR CONTROL
4.2.13	IDAPA 58.01.01.859-860	STDS & EMISSIONS GUIDELINES -- MSW LANDFILLS

**Notes**

1. Applicability to individual emissions units - Unless otherwise noted, the applicability designations in this section pertain to all facility point sources, i.e., Flare F1 and Engines E1 and E2.

2. Methods for determining compliance status, including recordkeeping and reporting - The methods for determining compliance status for individual emissions units and regulation components are summarized in the Table in the latter part of this section 4, with the detail provided in this section as applicable.
3. Yellow highlighting – Used to identify key subject matter for FHMRL’s regulatory status
4. Shortened regulatory text - In some cases, the regulatory text has been edited to remove non-applicable details and is marked, e.g., as “in the future... “

## **4.1 Federal Requirements**

### **4.1.1 40 CFR 52 Subpart A PREVENTION OF SIGNIFICANT DETERIORATION OF AIR QUALITY**

Title 40: Protection of Environment

PART 52—APPROVAL AND PROMULGATION OF IMPLEMENTATION PLANS

Subpart A-General Provisions

#### **§52.21 Prevention of significant deterioration of air quality.**

...(a)(2) *Applicability procedures.* (i) The requirements of this section apply to the construction of any new major stationary source (as defined in paragraph (b)(1) of this section) or any project at an existing major stationary source in an area designated as attainment or unclassifiable under sections 107(d)(1)(A)(ii) or (iii) of the Act.

(ii) The requirements of paragraphs (j) through (r) of this section apply to the construction of any new major stationary source or the major modification of any existing major stationary source, except as this section otherwise provides

...(b) *Definitions.* For the purposes of this section:

(1)(i) Major stationary source means:

(a) Any of the following stationary sources of air pollutants which emits, or has the potential to emit, 100 tons per year or more of any regulated NSR pollutant: Fossil fuel-fired steam electric plants of more than 250 million British thermal units per hour heat input, coal cleaning plants (with thermal dryers), kraft pulp mills, portland cement plants, primary zinc smelters, iron and steel mill plants, primary aluminum ore reduction plants (with thermal dryers), primary copper smelters, municipal incinerators capable of charging more than 250 tons of refuse per day, hydrofluoric, sulfuric, and nitric acid plants, petroleum refineries, lime plants, phosphate rock processing plants, coke oven batteries, sulfur recovery plants, carbon black plants (furnace process), primary lead smelters, fuel conversion plants, sintering plants, secondary metal production plants, chemical process plants (which does not include ethanol production facilities that produce ethanol by natural fermentation included in NAICS codes 325193 or 312140), fossil-fuel boilers (or combinations thereof) totaling more than 250 million British thermal units per hour heat input, petroleum storage and transfer units with a total storage capacity exceeding 300,000 barrels, taconite ore processing plants, glass fiber processing plants, and charcoal production plants;

(b) Notwithstanding the stationary source size specified in paragraph (b)(1)(i) of this section, any stationary source which emits, or has the potential to emit, 250 tons per year or more of a regulated NSR pollutant;

...(2)(i) *Major modification* means any physical change in or change in the method of operation of a major stationary source that would result in: a significant emissions increase (as defined in paragraph (b)(40) of this section) of a regulated NSR pollutant (as defined in paragraph (b)(50) of this section); and a significant net emissions increase of that pollutant from the major stationary source....

...(23)(i) **Significant** means, in reference to a net emissions increase or the potential of a source to emit any of the following pollutants, a rate of emissions that would equal or exceed any of the following rates:

POLLUTANT AND EMISSIONS RATE

**Carbon monoxide: 100 tons per year (tpy)**

**Nitrogen oxides: 40 tpy**

**Sulfur dioxide: 40 tpy**

**Particulate matter: 25 tpy of particulate matter emissions**

PM<sub>10</sub>: 15 tpy

PM<sub>2.5</sub>: 10 tpy of direct PM<sub>2.5</sub> emissions; 40 tpy of sulfur dioxide emissions; 40 tpy of nitrogen oxide emissions unless demonstrated not to be a PM<sub>2.5</sub> precursor under paragraph (b)(50) of this section

Ozone: 40 tpy of volatile organic compounds or nitrogen oxides

Lead: 0.6 tpy

Fluorides: 3 tpy

Sulfuric acid mist: 7 tpy

Hydrogen sulfide (H<sub>2</sub>S): 10 tpy

Total reduced sulfur (including H<sub>2</sub>S): 10 tpy

Reduced sulfur compounds (including H<sub>2</sub>S): 10 tpy

Municipal waste combustor organics (measured as total tetra-through octa-chlorinated dibenzo-p-dioxins and dibenzofurans):  $3.2 \times 10^{-6}$  megagrams per year ( $3.5 \times 10^{-6}$  tons per year)

Municipal waste combustor metals (measured as particulate matter): 14 megagrams per year (15 tons per year)

Municipal waste combustor acid gases (measured as sulfur dioxide and hydrogen chloride): 36 megagrams per year (40 tons per year)

Municipal solid waste landfills emissions (measured as nonmethane organic compounds): 45 megagrams per year (50 tons per year)

(ii) *Significant* means, in reference to a net emissions increase or the potential of a source to emit a regulated NSR pollutant that paragraph (b)(23)(i) of this section, does not list, any emissions rate.

(iii) Notwithstanding paragraph (b)(23)(i) of this section, *significant* means any emissions rate or any net emissions increase associated with a major stationary source or major modification, which would construct within 10 kilometers of a Class I area, and have an impact on such area equal to or greater than 1 µg/m<sup>3</sup>, (24-hour average)...

...(40) **Significant emissions increase** means, for a regulated NSR pollutant, an increase in emissions that is significant (as defined in paragraph (b)(23) of this section) for that pollutant...

...(49) *Subject to regulation* means, for any air pollutant, that the pollutant is subject to either a provision in the Clean Air Act, or a nationally-applicable regulation codified by the Administrator in subchapter C of this chapter, that requires actual control of the quantity of emissions of that pollutant, and that such a control requirement has taken effect and is operative to control, limit or restrict the quantity of emissions of that pollutant released from the regulated activity. Except that:

(i) *Greenhouse gases (GHGs)*, the air pollutant defined in §86.1818-12(a) of this chapter as the aggregate group of six greenhouse gases: Carbon dioxide, nitrous oxide, methane, hydrofluorocarbons, perfluorocarbons, and sulfur hexafluoride, shall not be subject to regulation except as provided in paragraphs (b)(49)(iv) through (v) of this section and shall not be subject to regulation if the stationary source maintains its total source-wide emissions below the GHG PAL level, meets the requirements in paragraphs (aa)(1) through (15) of this section, and complies with the PAL permit containing the GHG PAL.

(ii) For purposes of paragraphs (b)(49)(iii) through (v) of this section, the term tpy *CO<sub>2</sub> equivalent emissions (CO<sub>2</sub>e)* shall represent an amount of GHGs emitted, and shall be computed as follows:

(a) Multiplying the mass amount of emissions (tpy), for each of the six greenhouse gases in the pollutant GHGs, by the gas's associated global warming potential published at Table A-1 to subpart A of part 98 of

this chapter—Global Warming Potentials. For purposes of this paragraph, prior to July 21, 2014, the mass of the greenhouse gas carbon dioxide shall not include carbon dioxide emissions resulting from the combustion or decomposition of non-fossilized and biodegradable organic material originating from plants, animals, or micro-organisms (including products, by-products, residues and waste from agriculture, forestry and related industries as well as the non-fossilized and biodegradable organic fractions of industrial and municipal wastes, including gases and liquids recovered from the decomposition of non-fossilized and biodegradable organic material).

(b) Sum the resultant value from paragraph (b)(49)(ii)(a) of this section for each gas to compute a tpy CO<sub>2</sub>e.

(iii) The term *emissions increase* as used in paragraphs (b)(49)(iv) through (v) of this section shall mean that both a significant emissions increase (as calculated using the procedures in paragraph (a)(2)(iv) of this section) and a significant net emissions increase (as defined in paragraphs (b)(3) and (b)(23) of this section) occur. For the pollutant GHGs, an emissions increase shall be based on tpy CO<sub>2</sub>e, and shall be calculated assuming the pollutant GHGs is a regulated NSR pollutant, and “significant” is defined as 75,000 tpy CO<sub>2</sub>e instead of applying the value in paragraph (b)(23)(ii) of this section.

(iv) Beginning January 2, 2011, the pollutant GHGs is subject to regulation if:

(a) The stationary source is a new major stationary source for a regulated NSR pollutant that is not GHGs, and also will emit or will have the potential to emit 75,000 tpy CO<sub>2</sub>e or more; or

(b) The stationary source is an existing major stationary source for a regulated NSR pollutant that is not GHGs, and also will have an emissions increase of a regulated NSR pollutant, and an emissions increase of 75,000 tpy CO<sub>2</sub>e or more; and

(50) *Regulated NSR pollutant*, for purposes of this section, means the following:

(i) Any pollutant for which a national ambient air quality standard has been promulgated. This includes, but is not limited to, the following:

(a) PM<sub>2.5</sub> emissions and PM<sub>10</sub> emissions shall include gaseous emissions from a source or activity, which condense to form particulate matter at ambient temperatures. On or after January 1, 2011, such condensable particulate matter shall be accounted for in applicability determinations and in establishing emissions limitations for PM<sub>2.5</sub> and PM<sub>10</sub> in PSD permits. Compliance with emissions limitations for PM<sub>2.5</sub> and PM<sub>10</sub> issued prior to this date shall not be based on condensable particulate matter unless required by the terms and conditions of the permit or the applicable implementation plan. Applicability determinations made prior to this date without accounting for condensable particulate matter shall not be considered in violation of this section unless the applicable implementation plan required condensable particulate matter to be included.

(b) Any pollutant identified under this paragraph (b)(50)(i)(b) as a constituent or precursor for a pollutant for which a national ambient air quality standard has been promulgated. Precursors identified by the Administrator for purposes of NSR are the following:

(1) Volatile organic compounds and nitrogen oxides are precursors to ozone in all attainment and unclassifiable areas.

(2) Sulfur dioxide is a precursor to PM<sub>2.5</sub> in all attainment and unclassifiable areas.

(3) Nitrogen oxides are presumed to be precursors to PM<sub>2.5</sub> in all attainment and unclassifiable areas, unless the State demonstrates to the Administrator's satisfaction or EPA demonstrates that emissions of nitrogen oxides from sources in a specific area are not a significant contributor to that area's ambient PM<sub>2.5</sub> concentrations.

(4) Volatile organic compounds are presumed not to be precursors to PM<sub>2.5</sub> in any attainment or unclassifiable area, unless the State demonstrates to the Administrator's satisfaction or EPA demonstrates that emissions of volatile organic compounds from sources in a specific area are a significant contributor to that area's ambient PM<sub>2.5</sub> concentrations.

(ii) Any pollutant that is subject to any standard promulgated under section 111 of the Act;

(iii) Any Class I or II substance subject to a standard promulgated under or established by title VI of the Act;

(iv) Any pollutant that otherwise is subject to regulation under the Act as defined in paragraph (b)(49) of this section.

(v) Notwithstanding paragraphs (b)(50)(i) through (iv) of this section, the term *regulated NSR pollutant* shall not include any or all hazardous air pollutants either listed in section 112 of the Act, or added to the list pursuant to section 112(b)(2) of the Act, and which have not been delisted pursuant to section 112(b)(3) of the Act, unless the listed hazardous air pollutant is also regulated as a constituent or precursor of a general pollutant listed under section 108 of the Act...

EFFECTIVE DATE NOTE: At 76 FR 17556, Mar. 30, 2011, §52.21(b)(2)(v) and (b)(3)(iii)(c) were stayed indefinitely.

**Not Applicable. Fort Hall Mine Road Landfill (FHMRL) is an existing Title V major source for formaldehyde and with this PTC modification CO as well. FHMRL's criteria pollutant emissions by pollutant from the facility are below 250 tpy the PSD threshold. Likewise, the facility is not a major source for CO<sub>2</sub>e because it is an existing source that has not exceeded the GHG major source threshold of 100,000 tons per year, nor has it made a change that would increase GHG emissions by 75,000 tons per year. Therefore, in accordance with 40 CFR 52.21 (a)(2), PSD requirements are not applicable to this permitting action.**

#### **4.1.2 40 CFR 60 Subpart A NSPS GENERAL PROVISIONS**

Title 40: Protection of Environment

PART 60—STANDARDS OF PERFORMANCE FOR NEW STATIONARY SOURCES

Subpart A—GENERAL PROVISIONS

##### **§60.1 Applicability.**

- (a) Except as provided in subparts B and C, the provisions of this part apply to the **owner or operator of any stationary source which contains an affected facility**, the construction or modification of which is commenced **after the date of publication in this part** of any standard (or, if earlier, the date of publication of any proposed standard) applicable to that facility. ....

[40 FR 53346, Nov. 17, 1975, as amended at 55 FR 51382, Dec. 13, 1990; 59 FR 12427, Mar. 16, 1994; 62 FR 52641, Oct. 8, 1997]

**Applicable. The FHMRL's existing open flare (F1) and two existing LFG Engines E1 & E2 that are associated with the landfill, are affected sources under 40 CFR 60.**

#### **4.1.3 40 CFR 60 Subpart Cc EMISSIONS GUIDELINES – MSW LANDFILLS**

Title 40: Protection of Environment

PART 60—STANDARDS OF PERFORMANCE FOR NEW STATIONARY SOURCES

Subpart Cc—Emissions Guidelines and Compliance Times for Municipal Solid Waste Landfills

##### **§60.32c Designated facilities.**

- (a) The designated facility to which the guidelines apply is each existing MSW landfill for which **construction, reconstruction or modification was commenced before May 30, 1991.**

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

**Applicable to Idaho DEQ**

The FHMRL Cell 1 (formerly “Closed Cell”) began operations in 1943 and closed in 1993; however, FHMRL Cell 2 (formerly “Cell A”) was a continuation of work at FHMRL, located at the same property. The FHMRL Cell 2 began operations in 1993, and still operates today (closure expected after 2022). “Cell 4” construction began in October 2007. The latest Design Capacity Report on April 21, 2010, indicated a Municipal Solid Waste (MSW) Design Capacity for Cell 1 and 2 combined at 2,665,097 Mg. Subsequent modifications of the facility based on the design of Cell 4 resulted in a total Design Capacity of 7,310,000 Mg of MSW based on the 2010 Modified Design Plan. Although Subpart Cc requirements flowed down to FHMRL in T1-2018.0007, these requirements do not apply to this PTC modification.

#### §60.33c Emission guidelines for municipal solid waste landfill emissions.

(a) For approval, a State plan shall include control of MSW landfill emissions at each MSW landfill meeting the following three conditions:

(1) The landfill has accepted waste at any time since November 8, 1987, or has additional design capacity available for future waste deposition;

(2) The landfill has a design capacity greater than or equal to 2.5 million megagrams and 2.5 million cubic meters. 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 design capacity report; and

(3) The landfill has a non-methane organic compound emission rate of 50 megagrams per year or more. ...

Not Applicable to FHMRL or to PTC until after facility wide NMOC > 50 Mg/yr, per 40 CFR 60.33c(a)(3) or until Cell 4 expands past its current lined limits, when part 40 CFR 60 Subpart XXX applies expected in the year 2022.

[61 FR 9919, Mar. 12, 1996, as amended at 63 FR 32750, June 16, 1998; 64 FR 9261, Feb. 24, 1999]

#### 4.1.4 40 CFR 60 Subpart Cf EMISSIONS GUIDELINES – MSW LANDFILLS

Title 40: Protection of Environment

PART 60—STANDARDS OF PERFORMANCE FOR NEW STATIONARY SOURCES

Subpart Cf—Emissions Guidelines and Compliance Times for Municipal Solid Waste Landfills

#### §60.30f Scope and delegated authorities.

This subpart establishes Emission Guidelines and compliance times for the control of designated pollutants from certain designated municipal solid waste (MSW) landfills in accordance with section 111(d) of the Clean Air Act and subpart B of this part.

(a) If you are the Administrator of an air quality program in a state or United States protectorate with one or more existing MSW landfills that commenced construction, modification, or reconstruction on or before July 17, 2014, you must submit a state plan to the U.S. Environmental Protection Agency (EPA) that implements the Emission Guidelines contained in this subpart. The requirements for state plans are specified in subpart B of this part.

(b) You must submit a state plan to the EPA by August 29, 2019.

[81 FR 59313, Aug. 29, 2016, as amended at 84 FR 44555, Aug. 26, 2019]

**Not Applicable. EPA and DEQ have developed a plan for EPA to revise Subpart Cf by 2020, with applicability to follow the actual date.**

#### **4.1.5 40 CFR 60 Subpart E INCINERATORS**

Title 40: Protection of Environment

PART 60—STANDARDS OF PERFORMANCE FOR NEW STATIONARY SOURCES

Subpart E—Standard of Performance for Incinerators

##### **§60.50 Applicability and designation of affected facility.**

(a) The provisions of this subpart are applicable to each incinerator of more than 45 metric tons per day charging rate (50 tons/day), which is the affected facility.

(b) Any facility under paragraph (a) of this section that commences construction or modification after August 17, 1971, is subject to the requirements of this subpart.

(c) Any facility covered by subpart Cb, Eb, AAAA, or BBBB of this part is not covered by this subpart.

(d) Any facility covered by an EPA approved State section 111(d)/129 plan implementing subpart Cb or BBBB of this part is not covered by this subpart.

(e) Any facility covered by subpart FFF or JJJ of part 62 of this title (Federal section 111(d)/129 plan implementing subpart Cb or BBBB of this part) is not covered by this subpart.

[42 FR 37936, July 25, 1977, as amended at 71 FR 27335, May 10, 2006]

**Not Applicable. Although FHMRL operates flare F1, and although IDAPA 58.01.01.006.58 defines a flare as an incinerator, FHMRL's flare does not burn garbage nor have a charging capacity > 50 tpd. Not applicable to this PTC modification.**

#### **4.1.6 40 CFR 60 Subpart JJJJ NSPS FOR STATIONARY SPARK IGNITION INTERNAL COMBUSTION ENGINES**

Title 40: Protection of Environment

PART 60—STANDARDS OF PERFORMANCE FOR NEW STATIONARY SOURCES

(CONTINUED)

Subpart JJJJ—STANDARDS OF PERFORMANCE FOR STATIONARY SPARK IGNITION INTERNAL COMBUSTION ENGINES

##### **§60.4230 Am I subject to this subpart?**

(a) The provisions of this subpart are applicable to manufacturers, owners, and operators of stationary spark ignition (SI) internal combustion engines (ICE) as specified in paragraphs (a)(1) through (6) of this

section. For the purposes of this subpart, the date that construction commences is the **date the engine is ordered** by the owner or operator.

(4) Owners and operators of stationary SI ICE that commence construction after June 12, 2006, where the stationary SI ICE are manufactured:

(i) On or **after July 1, 2007**, for engines with a maximum engine power **greater than or equal to 500 HP** (except lean burn engines with a maximum engine power greater than or equal to 500 HP and less than 1,350 HP);

(6) The provisions of §60.4236 of this subpart are applicable to **all owners and operators of stationary SI ICE that commence construction after June 12, 2006.**

[73 FR 3591, Jan. 18, 2008, as amended at 76 FR 37972, June 28, 2011]

**Applicable. Existing LFG Engines E1 & E2 are stationary spark ignition engines that commenced construction after July 1, 2007, with an engine power ratings greater than 500 HP. Therefore, engine E1 and E2 are subject to Subpart JJJJ.**

**§60.4233 What **emission standards** must I meet if I am an owner or operator of a stationary SI internal combustion engine?**

(e) Owners and operators of stationary SI ICE with a maximum engine power **greater than or equal to 75 KW (100 HP)** (except gasoline and rich burn engines that use LPG) must comply with the emission standards in **Table 1** to this subpart for their stationary SI ICE. For owners and operators of stationary SI ICE with a maximum engine power greater than or equal to 100 HP (except gasoline and rich burn engines that use LPG) manufactured prior to January 1, 2011 that were certified to the certification emission standards in 40 CFR part 1048 applicable to engines that are not severe duty engines, if such stationary SI ICE was certified to a carbon monoxide (CO) standard above the standard in Table 1 to this subpart, then the owners and operators may meet the CO certification (not field testing) standard for which the engine was certified.

[73 FR 3591, Jan. 18, 2008, as amended at 76 FR 37973, June 28, 2011]

**Table 1 to Subpart JJJJ of Part 60—NO<sub>x</sub>, CO, and VOC Emission Standards for Stationary Non-Emergency SI Engines [>100 HP] (Except Gasoline and Rich Burn LPG), Stationary SI **Landfill/Digester Gas Engines**, and Stationary Emergency Engines >25 HP**

Engine type and fuel	Maximum engine power	Manufacture date	Emission standards <sup>a</sup>					
			g/HP-hr			ppmvd at 15% O <sub>2</sub>		
			NO <sub>x</sub>	CO	VOC <sup>d</sup>	NO <sub>x</sub>	CO	VOC <sup>d</sup>
<b>Landfill/Digester Gas</b> (except lean burn 500<HP<1,350)	<b>HP&gt;500</b>	7/1/2010	2.0	5.0	1.0	150	610	80

<sup>a</sup>Owners and operators of stationary non-certified SI engines may choose to comply with the emission standards in units of either g/HP-hr or ppmvd at 15 percent O<sub>2</sub>.

<sup>d</sup>For purposes of this subpart, when calculating emissions of volatile organic compounds, emissions of formaldehyde should not be included.

[76 FR 37975, June 28, 2011]

**Applicable. The existing LFG engines will comply with the emission standards as shown above in Table 1 to Subpart JJJJ. Compliance will be demonstrated by E1 and E2 source testing which will be required by this permit.**

**§60.4234 How long must I meet the emission standards if I am an owner or operator of a stationary SI internal combustion engine?**

Owners and operators of stationary SI ICE must operate and maintain stationary SI ICE that achieve the emission standards as required in §60.4233 over the entire life of the engine.

**Applicable. Engines E1 and E2 must meet the emission standards over the entire life of the engines. Compliance will be demonstrated by periodic E1 and E2 source testing, which is required in this permit.**

**§60.4236 What is the deadline for importing or installing stationary SI ICE produced in previous model years?**

(b) After July 1, 2009, owners and operators may not install stationary SI ICE with a maximum engine power of greater than or equal to 500 HP that do not meet the applicable requirements in §60.4233, except that lean burn engines with a maximum engine power greater than or equal to 500 HP and less than 1,350 HP that do not meet the applicable requirements in §60.4233 may not be installed after January 1, 2010.

**Applicable. Engines E1 and E2 are subject to §60.4233.**

**§60.4243 What are my compliance requirements if I am an owner or operator of a stationary SI internal combustion engine?**

(b) If you are an owner or operator of a stationary SI internal combustion engine and must comply with the emission standards specified in §60.4233(d) or (e), you must demonstrate compliance according to one of the methods specified in paragraphs (b)(1) and (2) of this section....

(2) Purchasing a non-certified engine and demonstrating compliance with the emission standards specified in §60.4233(d) or (e) and according to the requirements specified in §60.4244, as applicable, and according to paragraphs (b)(2)(i) and (ii) of this section....

(ii) If you are an owner or operator of a stationary SI internal combustion engine greater than 500 HP, you must **keep a maintenance plan and records of conducted maintenance** and must, to the extent practicable, maintain and operate the engine in a manner consistent with good air pollution control practice for minimizing emissions. In addition, you must **conduct an initial performance test** and conduct **subsequent performance testing every 8,760 hours or 3 years**, whichever comes first, thereafter to demonstrate compliance.

**Applicable. The permittee will keep a maintenance plan and records for minimizing emissions. Performance tests will be performed according to the schedule stated above. Compliance will be demonstrated by a maintenance plan and records as required by this permit.**

(g) It is expected that air-to-fuel ratio controllers will be used with the operation of three-way catalysts/non-selective catalytic reduction. The AFR controller must be maintained and operated appropriately in order to ensure proper operation of the engine and control device to minimize emissions at all times.

**Not Applicable. The installed Engines E1 and E2 do not include three-way catalysts/non-selective catalytic reduction, or associated air-to-fuel ratio controllers.**

**§60.4244 What test methods and other procedures must I use if I am an owner or operator of a stationary SI internal combustion engine?**

Owners and operators of stationary SI ICE who conduct performance tests must follow the procedures in paragraphs (a) through (f) of this section.

(a) Each performance test must be conducted **within 10 percent of 100 percent peak (or the highest achievable) load** and according to the requirements in §60.8 and under the specific conditions that are specified by **Table 2** to §60.4244.

(b) You may **not conduct performance tests during periods of startup, shutdown, or malfunction**, as specified in §60.8(c). If your stationary SI internal combustion engine is non-operational, you do not need to startup the engine solely to conduct a performance test; however, you must conduct the performance test immediately upon startup of the engine.

(c) You must conduct **three separate test runs** for each performance test required in this section, as specified in §60.8(f). Each test run must be conducted within 10 percent of 100 percent peak (or the highest achievable) load and **last at least 1 hour**.

(d) To determine compliance with the **NO<sub>x</sub>** mass per unit output emission limitation, convert the concentration of NO<sub>x</sub> in the engine exhaust using Equation 1 of this section:

$$ER = (C_d \times 1.912 \text{ E-03} \times Q \times T) / (\text{hp-hr}) \quad (\text{Eq. 1})$$

Where:

ER = Emission rate of NO<sub>x</sub> in g/HP-hr.

C<sub>d</sub> = Measured NO<sub>x</sub> concentration in parts per million by volume (ppmv).

1.912 x 10<sup>-3</sup> = Conversion constant for ppm NO<sub>x</sub> to grams per standard cubic meter at 20 degrees Celsius.

Q = Stack gas volumetric flow rate, in standard cubic meter per hour, dry basis.

T = Time of test run, in hours.

HP-hr = Brake work of the engine, horsepower-hour (HP-hr).

(e) To determine compliance with the **CO** mass per unit output emission limitation, convert the concentration of CO in the engine exhaust using Equation 2 of this section:

$$ER = (C_d \times 1.164 \text{ E-03} \times Q \times T) / (\text{hp-hr}) \quad (\text{Eq. 2})$$

Where:

ER = Emission rate of CO in g/HP-hr.

C<sub>d</sub> = Measured CO concentration in ppmv.

1.164 x 10<sup>-3</sup> = Conversion constant for ppm CO to grams per standard cubic meter at 20 degrees Celsius.

Q = Stack gas volumetric flow rate, in standard cubic meters per hour, dry basis.

T = Time of test run, in hours.

HP-hr = Brake work of the engine, in HP-hr.

(f) For purposes of this subpart, when calculating emissions of VOC, emissions of formaldehyde should not be included. To determine compliance with the VOC mass per unit output emission limitation, convert the concentration of VOC in the engine exhaust using Equation 3 of this section:

$$ER = (C_d \times 1.833 \text{ E-}03 \times Q \times T) / (\text{hp-hr}) \quad (\text{Eq. 3})$$

Where:

ER = Emission rate of VOC in g/HP-hr.

$C_d$  = VOC concentration measured as propane in ppmv.

$1.833 \times 10^{-3}$  = Conversion constant for ppm VOC measured as propane, to grams per standard cubic meter at 20 degrees Celsius.

Q = Stack gas volumetric flow rate, in standard cubic meters per hour, dry basis.

T = Time of test run, in hours.

HP-hr = Brake work of the engine, in HP-hr.

(g) If the owner/operator chooses to measure VOC emissions using either Method 18 of 40 CFR part 60, appendix A, or Method 320 of 40 CFR part 63, appendix A, then it has the option of correcting the measured VOC emissions to account for the potential differences in measured values between these methods and Method 25A. The results from Method 18 and Method 320 can be corrected for response factor differences using Equations 4 and 5 of this section. The corrected VOC concentration can then be placed on a propane basis using Equation 6 of this section.

$$RF_i = (C_{Mi} / C_{Ai}) \quad (\text{Eq. 4})$$

Where:

$RF_i$  = Response factor of compound i when measured with EPA Method 25A.

$C_{Mi}$  = Measured concentration of compound i in ppmv as carbon.

$C_{Ai}$  = True concentration of compound i in ppmv as carbon.

$$C_{i\text{corr}} = RF_i \times C_{i\text{meas}} \quad (\text{Eq. 5})$$

where:

$C_{i\text{corr}}$  = Concentration of compound i corrected to the value that would have been measured by EPA Method 25A, ppmv as carbon.

$C_{i\text{meas}}$  = Concentration of compound i measured by EPA Method 320, ppmv as carbon.

$$C_{\text{Peq}} = 0.6098 \times C_{i\text{corr}} \quad (\text{Eq. 6})$$

Where:

$C_{\text{Peq}}$  = Concentration of compound i in mg of propane equivalent per DSCM.

**Applicable.** The permittee will conduct performance tests according to the procedures outlined above. Compliance will be demonstrated by periodic source testing for existing Engine E1 and E2, which will be required in this permit.

**§60.4245 What are my notification, reporting, and recordkeeping requirements if I am an owner or operator of a stationary SI internal combustion engine?**

Owners or operators of stationary SI ICE must meet the following notification, reporting and recordkeeping requirements.

(a) Owners and operators of **all stationary SI ICE** must keep **records** of the information in paragraphs (a)(1) through (4) of this section.

(1) All **notifications** submitted to comply with this subpart and **all documentation supporting** any notification.

(2) **Maintenance conducted** on the engine.

... (3)... [re Certified Engine -- Not Applicable]

(4) If the stationary SI internal combustion engine is **not a certified engine** or is a certified engine operating in a non-certified manner and subject to §60.4243(a)(2), **documentation that the engine meets the emission standards**

(b)... [re Emergency Engines -- Not Applicable]

(c) Owners and operators of stationary SI ICE greater than or equal to 500 HP that have **not been certified** by an engine manufacturer to meet the emission standards in §60.4231 must **submit an initial notification** as required in §60.7(a)(1). The notification must include the information in paragraphs (c)(1) through (5) of this section.

(1) Name and address of the owner or operator;

(2) The address of the affected source;

(3) Engine information including make, model, engine family, serial number, model year, maximum engine power, and engine displacement;

(4) Emission control equipment; and

(5) Fuel used.

(d) Owners and operators of stationary SI ICE that are subject to performance testing must **submit a copy of each performance test** as conducted in §60.4244 **within 60 days** after the test has been completed.

[73 FR 3591, Jan. 18, 2008, as amended at 73 FR 59177, Oct. 8, 2008; 78 FR 6697, Jan. 30, 2013; 81 FR 59809, Aug. 30, 2016]

**Applicable.** Neither of the existing engines E1 or E2 were certified by the manufacturer; however, the permittee will continue to comply with the requirements above. Compliance will be demonstrated by periodic source testing and associated reporting for both Engine E1 and E2, which are required in this PTC.

#### 4.1.7 40 CFR 60 Subpart WWW NSPS FOR MSW LANDFILLS < July 7, 2014

Title 40: Protection of Environment

PART 60—STANDARDS OF PERFORMANCE FOR NEW STATIONARY SOURCES

(CONTINUED)

Subpart WWW—Standards of Performance for Municipal Solid Waste Landfills

**Applicable.** FHMRL completed the design and began construction of its most recent cell - Cell 4 in 2007. The latest Design Capacity Report on April 21, 2010, indicated an MSW Design Capacity for Cell 1 and 2 combined at 2,665,097 MG. Subsequent modifications of the facility based on the design of Cell 4 resulted in a total Design Capacity 7,310,000 MG of MSW based on the 2010 Modified Design Plan. This most recent increase in permitted Design Capacity occurred before July 17, 2014. Therefore, Subpart WWW—Standards of Performance for Municipal Solid Waste Landfills -- governs as NSPS for the landfill until Cell 4 expands past the current liner limits at which time Subpart XXX will govern.

#### §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...

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

**Applicable.** The FHMRL Cell 2 began operations in 1993 and is still open. Cell 4 began construction in 2007 and began operations in 2016 and is still open. The latest design approval for FHMRL occurred in 2010.

#### §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.....

**Controlled landfill** means any landfill at which collection and control systems are required under this subpart as a result of the non-methane 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.....

**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. ....

**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.....

**NMOC** means non-methane 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.....

**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.*). ....

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

**Applicable. Part 60.751 applies to all sources that are subject to Part 60.750**

#### **§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.

**Applicable. Part 60.752 applies to all sources that are subject to Part 60.750. FHMRL has filed an initial Design Capacity Report and amended it most recently in 2010. The latest Design Capacity Report on April 21, 2010, indicated an MSW Design Capacity for Cell 1 and 2 combined at 2,665,097 MG. Subsequent modifications of the facility based on the design of Cell 4 resulted in a total Design Capacity of 7,310,000 MG of MSW based on the 2010 Modified Design Plan. This most recent increase in permitted Design Capacity occurred before July 17, 2014.**

(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.

**Applicable. Part 60.752 applies to all sources that are subject to Part 60.750. FHMRL has filed an initial Design Capacity Report and has amended it most recently in 2010. The latest Design Capacity Report on April 21, 2010, indicated an MSW Design Capacity for Cell 1 and 2**

**combined at 2,665,097 MG. Subsequent modifications of the facility based on the design of Cell 4 resulted in a total Design Capacity of 7,310,000 MG of MSW based on the 2010 Modified Design Plan. This most recent increase in permitted Design Capacity occurred before July 17, 2014.**

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

**Applicable**

(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:

**Not Applicable, Sections 2(i), (ii), (iii), (iv) and (v) are Not Applicable -- NMOC is < 50 Mg/yr. NMOC emissions are anticipated to remain below 50 MG/yr beyond 2033, the life span of the Idaho Power Energy Sales Agreement.**

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

**Not Applicable**

(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).

**Not Applicable**

(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.

#### **Not Applicable**

(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.

#### **Not Applicable**

(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:

#### **Not Applicable**

(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.....

### §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:

**Not Applicable. FHMRL has an LFG collection system that is installed at the convenience of the owner but is not installed nor used to comply with 60.752.(b)(2)(ii). Requirements 753 (a) through (g) become applicable when NMOC >50 Mg/yr.**

- (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:

**Not Applicable until NMOC > 50 Mg/yr.**

- (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:

**Not Applicable until NMOC > 50 Mg/yr.**

(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.

**Not Applicable until NMOC > 50 Mg/yr.**

(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.

**Not Applicable until NMOC > 50 Mg/yr.**

(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

**Not Applicable until NMOC > 50 Mg/yr.**

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

**Not Applicable until NMOC > 50 Mg/yr.**

(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.

**Not Applicable until NMOC > 50 Mg/yr.**

[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.

**Applicable. FHMRL calculates the NMOC emission rate annually.**

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

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

where,

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

$k$  = methane generation rate constant, year<sup>-1</sup>

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

$M_i$  = mass of solid waste in the  $i^{\text{th}}$  section, megagrams

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

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

$3.6 \times 10^{-9}$  = 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.

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

Where:

$M_{\text{NMOC}}$  = 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<sup>-1</sup>

$t$  = age of landfill, years

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

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

$3.6 \times 10^{-9}$  = 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  $C_{\text{NMOC}}$  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  $C_{\text{NMOC}}$  as carbon to  $C_{\text{NMOC}}$  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:

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

where,

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

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

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

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

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

where,

$\text{NMOC}_{\text{in}}$  = mass of NMOC entering control device

$\text{NMOC}_{\text{out}}$  = mass of NMOC exiting control device

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

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

### §60.755 Compliance provisions

**Not Applicable.** FHMRL has an LFG collection system that is installed at the convenience of the owner but is not installed or used to comply with 60.752(b)(2)(ii). Requirements 755 (a) through (e) become applicable when NMOC >50 Mg/yr. Despite FHMRL's voluntary installation of a gas collection system, FHMRL does not become a "controlled landfill" until the owner's submittal of a design plan for the gas collection and control system per 60.752(b)(2) (ii). Note: FHMRL will sample NMOC next during FY 2023.

(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  $L$  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:

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

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<sup>-1</sup>

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

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

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

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

where,

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

$k$  = methane generation rate constant, year<sup>-1</sup>

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

$M_i$  = mass of solid waste in the  $i^{\text{th}}$  section, megagrams

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

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

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

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

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

(5) For the purpose of identifying whether excess air infiltration into the landfill is occurring, the owner or operator shall monitor each well monthly for temperature and nitrogen or oxygen as

provided in §60.753(c). If a well exceeds one of these operating parameters, action shall be initiated to correct the exceedance within 5 calendar days. If correction of the exceedance cannot be achieved within 15 calendar days of the first measurement, the gas collection system shall be expanded to correct the exceedance within 120 days of the initial exceedance. Any attempted corrective measure shall not cause exceedances of other operational or performance standards. An alternative timeline for correcting the exceedance may be submitted to the Administrator for approval.

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

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

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

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

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

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

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

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

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

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

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

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

(v) For any location where monitored methane concentration equals or exceeds 500 parts per million above background three times within a quarterly period, a new well or other collection

device shall be installed within 120 calendar days of the initial exceedance. An alternative remedy to the exceedance, such as upgrading the blower, header pipes or control device, and a corresponding timeline for installation may be submitted to the Administrator for approval.

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

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

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

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

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

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

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

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

#### **§60.756 Monitoring of operations**

**Not Applicable. FHMRL has an LFG collection system that is installed at the convenience of the owner but is not installed or used not used to comply with 60.752(b)(2)(ii). Requirements 756 (a) through (f)(4) become applicable when NMOC >50 Mg/yr. Despite FHMRL’s voluntary installation of a gas collection system, FHMRL does not become a “controlled landfill” until the owner’s submittal of a design plan for the gas collection and control system per 60.752(b)(2) (ii).**

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:

**FHMRL has an open flare F1 that supports an LFG collection system that is installed at the convenience of the owner but is not installed or used not used to comply with 60.752(b)(2)(iii).**

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

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

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

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

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

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

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

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

## §60.757 Reporting requirements

**Applicable while FHMRL's NMOC < 50 Mg/yr.**

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.....

**Applicable. (Original Design Capacity Report was filed 8 Oct 1993. The Amended Design Capacity Report, the first with respect to 40 CFR 60.752, was filed 21 April 2010).**

(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...

**Applicable. FHMRL samples NMOC at least every 5 years and reports NMOC emissions every year.**

(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,

**Not Applicable until NMOC > 50 Mg/yr.**

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).

**Not Applicable until NMOC >50 Mg/yr. In spite of FHMRL's voluntary installation of a gas collection system, FHMRL does not become a "controlled landfill" until the owner's submittal of a design plan for the gas collection and control system per 60.752(b)(2) (ii).**

(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.

**Not Applicable until NMOC >50 Mg/yr. In spite of FHMRL's voluntary installation of a gas collection system, FHMRL does not become a "controlled landfill" until the owner's submittal of a design plan for the gas collection and control system per 60.752(b)(2) (ii).**

(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).

**Not Applicable until NMOC >50 Mg/yr**

(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:

#### **Not Applicable until NMOC >50 Mg/yr**

(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 non-degradable material for each area from which collection wells have been excluded based on the presence of asbestos or non-degradable material;

(4) The sum of the gas generation flow rates for all areas from which collection wells have been excluded based on non-productivity and the calculations of gas generation flow rate for each excluded area; and

(5) The provisions for increasing gas mover equipment capacity with increased gas generation flow rate, if the present gas mover equipment is inadequate to move the maximum flow rate expected over the life of the landfill; and

(6) The provisions for the control of off-site migration.

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

#### **§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

#### **Applicable**

(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.

#### **Not Applicable until FHMRL becomes a “Controlled Landfill.”**

**FHMRL has an LFG collection system that is installed at the convenience of the owner but is not installed or used not used to comply with 60.752.(b)(2)(ii). Requirements 758 (b)(1) through 758 (b) (4) become applicable when NMOC >50 Mg/yr. Despite FHMRL’s voluntary installation of a gas collection system, FHMRL does not become a “controlled landfill” until**

## the owner's submittal of a design plan for the gas collection and control system per 60.752(b)(2) (ii).

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

### Not Applicable until NMOC >50 Mg/yr

(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 non-assisted), 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.

### Not Applicable. "Controlled Landfill" defined as NMOC >50 Mg/yr and submitted Design Plan

(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 C below the average combustion temperature during the most recent performance test at which compliance with §60.752(b)(2)(iii) was determined.

### Not Applicable. FHML utilizes open flare as a control device

(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.

**Not Applicable. FHMRL utilizes open flare as a control device**

(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.

**Applicable**

(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.)

**Not Applicable. FHMRL utilizes open flare as a control device**

(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.

**Applicable. FHMRL utilizes open flare as a control device**

(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.

**Applicable**

(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.

**Not Applicable. 60.753 becomes applicable when NMOC >50 Mg/yr.**

(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.

**Applicable. FHMRL uses waste weight (tons) as the governing parameter.**

### §60.759 Specifications for active collection systems

**Not Applicable. FHMRL has an LFG collection system that is installed at the convenience of the owner but is not installed nor used to comply with 60.752.(b)(2)(ii). Requirements 759 (a) through (c) become applicable when NMOC >50 Mg/yr.**

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

(1) The collection devices within the interior and along the perimeter areas shall be certified to achieve comprehensive control of surface gas emissions by a professional engineer. The following issues shall be addressed in the design: depths of refuse, refuse gas generation rates and flow characteristics, cover properties, gas system expandability, leachate and condensate management, accessibility, compatibility with filling operations, integration with closure end use, air intrusion control, corrosion resistance, fill settlement, and resistance to the refuse decomposition heat.

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

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

(i) Any segregated area of asbestos or non-degradable 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 non-degradable 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  $i^{\text{th}}$  section, megagrams per year

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

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

$M_i$  = mass of the degradable solid waste in the  $i^{\text{th}}$  section, megagram

$t_i$  = age of the solid waste in the  $i^{\text{th}}$  section, years

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

$3.6 \times 10^{-9}$  = 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  $k$ ,  $L_0$  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).

[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]

#### **4.1.8 40 CFR 60 Subpart XXX NSPS FOR MSW LANDFILLS > July 7, 2014**

Title 40: Protection of Environment

PART 60—STANDARDS OF PERFORMANCE FOR NEW STATIONARY SOURCES

(CONTINUED)

Subpart XXX—Standards of Performance for Municipal Solid Waste Landfills That Commenced Construction, Reconstruction, or Modification After July 17, 2014

##### **§60.760 Applicability, designation of affected source, and delegation of authority.**

(a) The provisions of this subpart apply to each municipal solid waste landfill that commenced construction, reconstruction, or modification after July 17, 2014. Physical or operational changes made to

an MSW landfill solely to comply with subparts Cc, Cf, or WWW of this part are not considered construction, reconstruction, or modification for the purposes of this section.

#### **§60.761 Definitions**

Modification means an increase in the permitted volume design capacity of the landfill by either lateral or vertical expansion based on its permitted design capacity as of July 17, 2014. Modification does not occur until the owner or operator commences construction on the lateral or vertical expansion.

**Not Applicable to Facility. FHMRL began construction on its most recent cell (Cell 4) in October 2007. Subsequent modifications of the facility based on the design and construction of Cell 4 resulted in a total Design Capacity of 7,310,000 MG of MSW based on the 2010 Modified Design Plan. This most recent increase in permitted Design Capacity occurred before July 17, 2014. Therefore Subpart XXX—Standards of Performance for Municipal Solid Waste Landfills -- will not govern as NSPS for the landfill until further expansion occurs. The current approved limit of Cell 4 is expected to serve the landfill through approximately the year 2022.**

Title 40: Protection of Environment

PART 61—NATIONAL EMISSION STANDARDS FOR HAZARDOUS AIR POLLUTANTS

Subpart M—National Emission Standard for Asbestos

**§61.154 Standard for active waste disposal sites.**

Each owner or operator of an active waste disposal site that receives asbestos-containing waste material from a source covered under §61.150 [ construction/ demolition debris] , 61.150, or 61.155 shall meet the requirements of this section:

(a) Either there must be no visible emissions to the outside air from any active waste disposal site where asbestos-containing waste material has been deposited, or the requirements of paragraph (c) or (d) of this section must be met.

(b) Unless a natural barrier adequately deters access by the general public, either warning signs and fencing must be installed and maintained as follows, or the requirements of paragraph (c)(1) of this section must be met.

(1) Warning signs must be displayed at all entrances and at intervals of 100 m (330 ft) or less along the property line of the site or along the perimeter of the sections of the site where asbestos-containing waste material is deposited. The warning signs must:

- (i) Be posted in such a manner and location that a person can easily read the legend; and
- (ii) Conform to the requirements of 51 cm × 36 cm (20" × 14") upright format signs specified in 29 CFR 1910.145(d)(4) and this paragraph; and
- (iii) Display the following legend in the lower panel with letter sizes and styles of a visibility at least equal to those specified in this paragraph.

Legend	Notation
Asbestos Waste Disposal Site	2.5 cm (1 inch) Sans Serif, Gothic or Block.
Do Not Create Dust	1.9 cm (3/4 inch) Sans Serif, Gothic or Block.
Breathing Asbestos is Hazardous to Your Health	14 Point Gothic.

Spacing between any two lines must be at least equal to the height of the upper of the two lines.

(2) The perimeter of the disposal site must be fenced in a manner adequate to deter access by the general public.

(3) Upon request and supply of appropriate information, the Administrator will determine whether a fence or a natural barrier adequately deters access by the general public.

(c) Rather than meet the no visible emission requirement of paragraph (a) of this section, at the end of each operating day, or at least once every 24-hour period while the site is in continuous operation, the asbestos-containing waste material that has been deposited at the site during the operating day or previous 24-hour period shall:

(1) Be covered with at least 15 centimeters (6 inches) of compacted non-asbestos-containing material, or

(2) Be covered with a resinous or petroleum-based dust suppression agent that effectively binds dust and controls wind erosion. Such an agent shall be used in the manner and frequency recommended for the particular dust by the dust suppression agent manufacturer to achieve and maintain dust control. Other equally effective dust suppression agents may be used upon prior approval by the Administrator. For purposes of this paragraph, any used, spent, or other waste oil is not considered a dust suppression agent.

(d) Rather than meet the no visible emission requirement of paragraph (a) of this section, use an alternative emissions control method that has received prior written approval by the Administrator according to the procedures described in §61.149(c)(2).

(e) For all asbestos-containing waste material received, **the owner or operator** of the active waste disposal site shall:

(1) **Maintain waste shipment records**, using a form similar to that shown in Figure 4, and include the following information:

(i) The name, address, and telephone number of the waste generator.

(ii) The name, address, and telephone number of the transporter(s).

(iii) The quantity of the asbestos-containing waste material in cubic meters (cubic yards).

(iv) The presence of improperly enclosed or uncovered waste, or any asbestos-containing waste material not sealed in leak-tight containers. Report in writing to the local, State, or EPA Regional office responsible for administering the asbestos NESHAP program for the waste generator (identified in the waste shipment record), and, if different, the local, State, or EPA Regional office responsible for administering the asbestos NESHAP program for the disposal site, by the following working day, the presence of a significant amount of improperly enclosed or uncovered waste. Submit a copy of the waste shipment record along with the report.

(v) The date of the receipt.

(2) As soon as possible and no longer than 30 days after receipt of the waste, **send a copy** of the signed **waste shipment record to the waste generator**.

(3) **Upon discovering a discrepancy** between the quantity of waste designated on the waste shipment records and the quantity actually received, attempt to reconcile the discrepancy with the waste generator. If the discrepancy is not resolved within 15 days after receiving the waste, immediately report in writing to the local, State, or EPA Regional office responsible for administering the asbestos NESHAP program for the waste generator (identified in the waste shipment record), and, if different, the local, State, or EPA Regional office responsible for administering the asbestos NESHAP program for the disposal site. Describe the discrepancy and attempts to reconcile it, and submit a copy of the waste shipment record along with the report.

(4) **Retain a copy of all records and reports** required by this paragraph for at least **2 years**.

**Applicable to FHMRL facility, but not in the scope of PTC Permit or its modification.**

(f) Maintain, until closure, **records** of the location, depth and area, and quantity in cubic meters (cubic yards) of **asbestos-containing waste** material within the disposal site on a map or diagram of the disposal area.

**Applicable to FHMRL facility, but not in the scope of PTC Permit or its modification.**

(g) Upon closure, comply with all the provisions of §61.151.

(h) Submit to the Administrator, upon closure of the facility, a copy of records of asbestos waste disposal locations and quantities.

(i) Furnish upon request and make available during normal business hours for inspection by the Administrator, all records required under this section.

(j) Notify the Administrator in writing at least **45 days prior to excavating or otherwise disturbing** any asbestos-containing waste material that has been deposited at a **waste disposal site and is covered**. If the excavation will begin on a date other than the one contained in the original notice, notice of the new start date must be provided to the Administrator at least 10 working days before excavation begins and in no event shall excavation begin earlier than the date specified in the original notification. Include the following information in the notice:

(1) Scheduled starting and completion dates.

(2) Reason for disturbing the waste.

(3) Procedures to be used to control emissions during the excavation, storage, transport, and ultimate disposal of the excavated asbestos-containing waste material. If deemed necessary, the Administrator may require changes in the emission control procedures to be used.

(4) Location of any temporary storage site and the final disposal site.

[49 FR 13661, Apr. 5, 1990. Redesignated and amended at 55 FR 48431, Nov. 20, 1990; 56 FR 1669, Jan. 16, 1991]

**Applicable to FHMRL facility because the FHMRL includes an active asbestos waste disposal facility, it is subject to Subpart M -- National Emission Standard for Asbestos, but not in the scope of PTC Permit or its modification. The permittee will continue to comply with the applicable requirements of 40 CFR 61.154. Compliance will be demonstrated by periodic MSWLF milestone reporting that is required per RCRA, independent of this permit.**

#### **4.1.10 40 CFR 63 Subpart A NESHAPS APPLICABILITY**

Title 40: Protection of Environment

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

Subpart A—General Provisions

##### **§63.1 Applicability.**

...(a)(4)(i) Each relevant standard in this part 63 must identify explicitly whether each provision in this subpart A is or is not included in such relevant standard.

(ii) If a relevant part 63 standard incorporates the requirements of 40 CFR part 60, part 61 or other part 63 standards, the relevant part 63 standard must identify explicitly the applicability of each corresponding part 60, part 61, or other part 63 subpart A (General) provision.

[59 FR 12430, Mar. 16, 1994, as amended at 67 FR 16595, Apr. 5, 2002]

**Applicable.**

##### **§63.2 Definitions.**

*Affected source*, for the purposes of this part, means the collection of equipment, activities, or both within a single contiguous area and under common control that is included in a section 112(c) source category or subcategory for which a section 112(d) standard or other relevant standard is established pursuant to section 112 of the Act. Each relevant standard will define the “affected source,” as defined in this paragraph unless a different definition is warranted based on a published justification as to why this definition would result in significant administrative, practical, or implementation problems and why the different definition would resolve those problems. The term “affected source,” as used in this part, is separate and distinct from any other use of that term in EPA regulations such as those implementing title IV of the Act. Affected source may be defined differently for part 63 than affected facility and stationary source in parts 60 and 61, respectively. This definition of “affected source,” and the procedures for adopting an alternative definition of “affected source,” shall apply to each section 112(d) standard for which the initial proposed rule is signed by the Administrator after June 30, 2002....

*Area source* means any stationary source of hazardous air pollutants that is not a major source as defined in this part.

*Commenced* means, with respect to construction or reconstruction of an affected source, that an owner or operator has undertaken a continuous program of construction or reconstruction or that an

owner or operator has entered into a contractual obligation to undertake and complete, within a reasonable time, a continuous program of construction or reconstruction.

*Compliance date* means the date by which an affected source is required to be in compliance with a relevant standard, limitation, prohibition, or any federally enforceable requirement established by the Administrator (or a State with an approved permit program) pursuant to section 112 of the Act....

**Construction means the on-site fabrication, erection, or installation of an affected source.**

Construction does not include the removal of all equipment comprising an affected source from an existing location and reinstallation of such equipment at a new location. The owner or operator of an existing affected source that is relocated may elect not to reinstall minor ancillary equipment including, but not limited to, piping, ductwork, and valves. However, removal and reinstallation of an affected source will be construed as reconstruction if it satisfies the criteria for reconstruction as defined in this section. The costs of replacing minor ancillary equipment must be considered in determining whether the existing affected source is reconstructed....

*Existing source* means any affected source that is not a new source.

*Federally enforceable* means all limitations and conditions that are enforceable by the Administrator and citizens under the Act or that are enforceable under other statutes administered by the Administrator. Examples of federally enforceable limitations and conditions include, but are not limited to:

- (1) Emission standards, alternative emission standards, alternative emission limitations, and equivalent emission limitations established pursuant to section 112 of the Act as amended in 1990;
- (2) New source performance standards established pursuant to section 111 of the Act, and emission standards established pursuant to section 112 of the Act before it was amended in 1990;
- (3) All terms and conditions in a title V permit, including any provisions that limit a source's potential to emit, unless expressly designated as not federally enforceable;
- (4) Limitations and conditions that are part of an approved State Implementation Plan (SIP) or a Federal Implementation Plan (FIP);
- (5) Limitations and conditions that are part of a Federal construction permit issued under 40 CFR 52.21 or any construction permit issued under regulations approved by the EPA in accordance with 40 CFR part 51;
- (6) Limitations and conditions that are part of an operating permit where the permit and the permitting program pursuant to which it was issued meet all of the following criteria: ....

*Fugitive emissions* means those **emissions from a stationary source** that could not reasonably pass through a stack, chimney, vent, or other functionally equivalent opening. Under section 112 of the Act, **all fugitive emissions are to be considered in determining whether a stationary source is a major source.**

*Hazardous air pollutant* means any air pollutant listed in or pursuant to section 112(b) of the Act.

**Major source** means any stationary source or group of stationary sources located within a contiguous area and under common control that emits or has the **potential to emit considering controls**, in the **aggregate, 10 tons per year or more of any hazardous air pollutant or 25 tons per year or more of any combination of hazardous air pollutants**, unless the Administrator establishes a lesser quantity, or in the case of radionuclides, different criteria from those specified in this sentence....

*Potential to emit* means the maximum capacity of a stationary source to emit a pollutant under its physical and operational design. Any physical or operational limitation on the capacity of the stationary source to emit a pollutant, including air pollution control equipment and restrictions on hours 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 emissions is federally enforceable.

*Responsible official* means one of the following: ...

(3) For a municipality, State, Federal, or other public agency: either a principal executive officer or ranking elected official. For the purposes of this part, a principal executive officer of a Federal agency includes the chief executive officer having responsibility for the overall operations of a principal geographic unit of the agency (e.g., a Regional Administrator of the EPA).

(4) For affected sources (as defined in this part) applying for or subject to a title V permit: “responsible official” shall have the same meaning as defined in part 70 or Federal title V regulations in this chapter (42 U.S.C. 7661), whichever is applicable.

**Stationary source** means any building, structure, facility, or installation which emits or may emit any air pollutant.

[59 FR 12430, Mar. 16, 1994, as amended at 67 FR 16596, Apr. 5, 2002; 68 FR 32600, May 30, 2003; 69 FR 21752, Apr. 22, 2004; 72 FR 27443, May 16, 2007]

**Applicable. The Permittee has reviewed the contents of 40 CFR 63.2, Definitions, pertaining to NESHAPs, agrees to incorporate them into our T1 permit renewal development.**

### **§63.3 Units and abbreviations.**

[59 FR 12430, Mar. 16, 1994, as amended at 67 FR 16598, Apr. 5, 2002]

**Applicable. The Permittee has reviewed the contents of 40 CFR 63.3, Units and abbreviations, pertaining to NESHAPs, agrees to incorporate them into our permit.**

### **§63.4 Prohibited activities and circumvention.**

[59 FR 12430, Mar. 16, 1994, as amended at 67 FR 16598, Apr. 5, 2002]

**Applicable. The Permittee has reviewed the contents of 40 CFR 63.4, Prohibited activities, and circumvention pertaining to NESHAPs and agrees to abide by them.**

### **§63.5 Preconstruction review and notification requirements.**

[59 FR 12430, Mar. 16, 1994, as amended at 67 FR 16598, Apr. 5, 2002]

**Applicable. The Permittee has reviewed the contents of 40 CFR 63.5, Preconstruction review, and notification requirements pertaining to NESHAPs.**

### **§63.6 Compliance with standards and maintenance requirements.**

[59 FR 12430, Mar. 16, 1994, as amended at 67 FR 16599, Apr. 5, 2002; 68 FR 32600, May 30, 2003; 71 FR 20454, Apr. 20, 2006]

**Applicable. The Permittee has reviewed the contents of 40 CFR 63.6, Compliance with standards and maintenance requirements pertaining to NESHAPs and agrees to abide by them.**

### **§63.7 Performance testing requirements.**

...(g)(2) Contents of a performance test, CMS performance evaluation, or CMS quality assurance test report (electronic or paper submitted copy). Unless otherwise specified in a relevant standard, test method, CMS performance specification, or quality assurance requirement for a CMS, or as otherwise approved by the Administrator in writing, the report shall include the elements identified in paragraphs (g)(2)(i) through (vi) of this section...

... (v) Where a test method, CEMS, PEMS, or COMS performance specification, or on-going quality assurance requirement for a CEMS, PEMS, or COMS requires you record or report, the following shall be included in your report: Record of preparation of standards, record of calibrations, raw data sheets for

field sampling, raw data sheets for field and laboratory analyses, chain-of-custody documentation, and example calculations for reported results....

[59 FR 12430, Mar. 16, 1994, as amended at 65 FR 62215, Oct. 17, 2000; 67 FR 16602, Apr. 5, 2002; 72 FR 27443, May 16, 2007; 75 FR 55655, Sept. 13, 2010; 79 FR 11277, Feb. 27, 2014; 81 FR 59825, Aug. 30, 2016; 83 FR 56725, Nov. 14, 2018]

**Applicable. The Permittee has reviewed the contents of 40 CFR 63.7, Performance testing requirements pertaining to NESHAPs and agrees to abide by them.**

### **§63.8 Monitoring requirements.**

(a) Applicability. ....

(b) Conduct of monitoring.

(1) Monitoring shall be conducted as set forth in this section and the relevant standard(s) unless the Administrator....

(iii) Owners or operators with flares subject to §63.11(b) are not subject to the requirements of this section unless otherwise specified in the relevant standard.....

.....(e)(5)(i) The owner or operator shall furnish the Administrator a copy of a written report of the results of the performance evaluation containing the information specified in § 63.7(g)(2)(i) through (vi) simultaneously with the results of the performance test required under § 63.7 or within 60 days of completion of the performance evaluation, unless otherwise specified in a relevant standard.....

[59 FR 12430, Mar. 16, 1994, as amended at 64 FR 7468, Feb. 12, 1999; 67 FR 16603, Apr. 5, 2002; 71 FR 20455, Apr. 20, 2006; 79 FR 11277, Feb. 27, 2014; 83 FR 56725, Nov. 14, 2018] **Applicable. The Permittee has reviewed the contents of 40 CFR 63.8, Monitoring requirements focused on CEM systems pertaining to NESHAPs and agrees to abide by the applicable regulations.**

### **§63.9 Notification requirements.**

[59 FR 12430, Mar. 16, 1994, as amended at 64 FR 7468, Feb. 12, 1999; 67 FR 16604, Apr. 5, 2002; 68 FR 32601, May 30, 2003]

**Applicable. The Permittee has reviewed the contents of 40 CFR 63.9, Notification requirements for both the regulator and the permit Applicant pertaining to NESHAPs and agrees to abide by the applicable regulations.**

### **§63.10 Recordkeeping and reporting requirements.**

[59 FR 12430, Mar. 16, 1994, as amended at 64 FR 7468, Feb. 12, 1999; 67 FR 16604, Apr. 5, 2002; 68 FR 32601, May 30, 2003; 69 FR 21752, Apr. 22, 2004; 71 FR 20455, Apr. 20, 2006]

**Applicable. The Permittee has reviewed the contents of 40 CFR 63.10, Recordkeeping and reporting requirements, including compliance extensions, reporting of source performance testing, and SSM reports and agrees to abide by the applicable requirements.**

### **§63.11 Control device and work practice requirements.**

(a) *Applicability.* (1) The applicability of this section is set out in §63.1(a)(4).

(2) This section contains requirements for control devices used to comply with applicable subparts of this part. The requirements are placed here for administrative convenience and apply only to facilities covered by subparts referring to this section.

(3) This section also contains requirements for an alternative work practice used to identify leaking equipment. This alternative work practice is placed here for administrative convenience and is available to

all subparts in 40 CFR parts 60, 61, 63, and 65 that require monitoring of equipment with a 40 CFR part 60, appendix A-7, Method 21 monitor.

(b) **Flares.** (1) Owners or operators using flares to comply with the provisions of this part shall monitor these control devices to assure that they are operated and maintained in conformance with their designs. Applicable subparts will provide provisions stating how owners or operators using flares shall monitor these control devices.

(2) **Flares** shall be steam-assisted, air-assisted, or non-assisted.

(3) **Flares** shall be operated at all times when emissions may be vented to them.

(4) **Flares** shall be designed for and operated with no visible emissions, except for periods not to exceed a total of 5 minutes during any 2 consecutive hours. Test Method 22 in appendix A of part 60 of this chapter shall be used to determine the compliance of flares with the visible emission provisions of this part. The observation period is 2 hours and shall be used according to Method 22.

(5) **Flares** shall be operated with a flame present at all times. The presence of a flare pilot flame shall be monitored using a thermocouple or any other equivalent device to detect the presence of a flame.

(6) An owner/operator has the choice of adhering to the heat content specifications in paragraph (b)(6)(ii) of this section, and the maximum tip velocity specifications in paragraph (b)(7) or (b)(8) of this section, or adhering to the requirements in paragraph (b)(6)(i) of this section.

(i)(A) **Flares** shall be used that have a diameter of 3 inches or greater, are non-assisted, have a hydrogen content of 8.0 percent (by volume) or greater, and are designed for and operated with an exit velocity less than 37.2 m/sec (122 ft/sec) and less than the velocity  $V_{max}$ , as determined by the following equation:

$$V_{max} = (X_{H_2} - K_1) * K_2$$

Where:

$V_{max}$  = Maximum permitted velocity, m/sec.

$K_1$  = Constant, 6.0 volume-percent hydrogen.

$K_2$  = Constant, 3.9(m/sec)/volume-percent hydrogen.

$X_{H_2}$  = The volume-percent of hydrogen, on a wet basis, as calculated by using the American Society for Testing and Materials (ASTM) Method D1946-77. (Incorporated by reference as specified in §63.14).

(B) The actual exit velocity of a flare shall be determined by the method specified in paragraph (b)(7)(i) of this section.

(ii) **Flares** shall be used only with the net heating value of the gas being combusted at 11.2 MJ/scm (300 Btu/scf) or greater if the flare is steam-assisted or air-assisted; or with the net heating value of the gas being combusted at 7.45 M/scm (200 Btu/scf) or greater if the flares is non-assisted. The net heating value of the gas being combusted in a flare shall be calculated using the following equation:

$$H_T = K \sum_{i=1}^n C_i H_i$$

Where:

$H_T$  = Net heating value of the sample, MJ/scm; where the net enthalpy per mole of off gas is based on combustion at 25 °C and 760 mm Hg, but the standard temperature for determining the volume corresponding to one mole is 20 °C.

$K$  = Constant =

$$1.740 \times 10^{-7} \left( \frac{1}{ppmv} \right) \left( \frac{g\text{-mole}}{scm} \right) \left( \frac{MJ}{kcal} \right)$$

where the standard temperature for (g-mole/scm) is 20 °C.

$C_i$  = Concentration of sample component  $i$  in ppmv on a wet basis, as measured for organics by Test Method 18 and measured for hydrogen and carbon monoxide by American Society for Testing and Materials (ASTM) D1946-77 or 90 (Reapproved 1994) (incorporated by reference as specified in §63.14).

$H_i$  = Net heat of combustion of sample component  $i$ , kcal/g-mole at 25 °C and 760 mm Hg. The heats of combustion may be determined using ASTM D2382-76 or 88 or D4809-95 (incorporated by reference as specified in §63.14) if published values are not available or cannot be calculated.

$n$  = Number of sample components.

(7)(i) Steam-assisted and **non-assisted flares** shall be designed for and operated with an exit velocity less than 18.3 m/sec (60 ft/sec), except as provided in paragraphs (b)(7)(ii) and (b)(7)(iii) of this section. The actual exit velocity of a flare shall be determined by dividing by the volumetric flow rate of gas being combusted (in units of emission standard temperature and pressure), as determined by Test Method 2, 2A, 2C, or 2D in appendix A to 40 CFR part 60 of this chapter, as appropriate, by the unobstructed (free) cross-sectional area of the flare tip.

(ii) Steam-assisted and **non-assisted flares** designed for and operated with an exit velocity, as determined by the method specified in paragraph (b)(7)(i) of this section, equal to or greater than 18.3 m/sec (60 ft/sec) but less than 122 m/sec (400 ft/sec), are allowed if the net heating value of the gas being combusted is greater than 37.3 MJ/scm (1,000 Btu/scf).

(iii) Steam-assisted and **non-assisted flares** designed for and operated with an exit velocity, as determined by the method specified in paragraph (b)(7)(i) of this section, less than the velocity  $V_{max}$ , as determined by the method specified in this paragraph, but less than 122 m/sec (400 ft/sec) are allowed. The maximum permitted velocity,  $V_{max}$ , for flares complying with this paragraph shall be determined by the following equation:

$$\text{Log}_{10}(V_{max}) = (H_T + 28.8)/31.7$$

Where:

$V_{max}$  = Maximum permitted velocity, m/sec.

28.8 = Constant.

31.7 = Constant.

$H_T$  = The net heating value as determined in paragraph (b)(6) of this section.

(8) Air-assisted flares shall be designed and operated with an exit velocity less than the velocity  $V_{max}$ . The maximum permitted velocity,  $V_{max}$ , for air-assisted flares shall be determined by the following equation:

$$V_{max} = 8.71 + 0.708(H_T)$$

Where:

$V_{max}$  = Maximum permitted velocity, m/sec.

8.71 = Constant.

0.708 = Constant.

$H_T$  = The net heating value as determined in paragraph (b)(6)(ii) of this section.....

$$E_{dic} = (E_{sds}) \sum_{i=1}^n x_i$$

Where:

$E_{dic}$  = Mass flow rate for the daily instrument check, grams per hour

$x_i$  = Mass fraction of detectable chemical(s)  $i$  seen by the optical gas imaging instrument, within the distance to be used in paragraph (e)(2)(iv)(B) of this section, at or below the standard detection sensitivity level,  $E_{sds}$ .

$E_{sds}$  = Standard detection sensitivity level from Table 1 to subpart A, grams per hour

k = Total number of detectable chemicals emitted from the leaking equipment and seen by the optical gas imaging instrument.....

[59 FR 12430, Mar. 16, 1994, as amended at 63 FR 24444, May 4, 1998; 65 FR 62215, Oct. 17, 2000; 67 FR 16605, Apr. 5, 2002; 73 FR 78211, Dec. 22, 2008]

**Applicable.** The Permittee has reviewed the contents of 40 CFR 63.11, Control device and work practice requirements, including flare requirements, and agrees to abide by the applicable requirements.

#### **§63.12 State authority and delegations.**

**Not Applicable.** The Permittee has reviewed the contents of 40 CFR 63.12, State authority and delegations. These requirements apply to the Regulator.

#### **§63.13 Addresses of State air pollution control agencies and EPA Regional Offices.**

[59 FR 12430, Mar. 16, 1994, as amended at 63 FR 66061, Dec. 1, 1998; 67 FR 4184, Jan. 29, 2002; 68 FR 32601, May 30, 2003; 68 FR 35792, June 17, 2003; 73 FR 24871, May 6, 2008; 75 FR 69532, Nov. 12, 2010; 76 FR 49673, Aug. 11, 2011; 78 FR 37977, June 25, 2013; 84 FR 34069, July 17, 2019; 84 FR 44230, Aug. 23, 2019]

**Not Applicable.** The Permittee has reviewed the contents of 40 CFR 63.13, Addresses of State air pollution control agencies and EPA Regional Offices. Permittee anticipates that liaison, if any, with any states or any EPA regional office are not anticipated and would be explicitly specified in the PTC modification.

#### **§63.14 Incorporations by reference.**

[79 FR 11277, Feb. 27, 2014, as amended at 79 FR 17363, Mar. 27, 2014; 80 FR 37389, June 30, 2015; 80 FR 50436, Aug. 19, 2015; 80 FR 56738, Sept. 18, 2015; 80 FR 62414, Oct. 15, 2015; 80 FR 65520, Oct. 26, 2015; 80 FR 75817, Dec. 4, 2015; 80 FR 75236, Dec. 1, 2015; 82 FR 5407, Jan. 18, 2017; 82 FR 47347, Oct. 11, 2017; 82 FR 48178, Oct. 16, 2017; 83 FR 9218, Mar. 5, 2018; 83 FR 48256, Sept. 24, 2018; 83 FR 51582, Oct. 15, 2018; 84 FR 6692, Feb. 28, 2019; 84 FR 7698; 84 FR 9611, Mar. 15, 2019]

**Applicable.** The Permittee has reviewed the contents of 40 CFR 63.14, Incorporations by reference, and acknowledges these sources are potentially relevant information.

#### **§63.15 Availability of information and confidentiality.**

**Applicable.** The Permittee has reviewed the contents of 40 CFR 63.15, the Availability of information and confidentiality, and acknowledges these Regulator policies.

#### **§63.16 Performance Track Provisions.**

[69 FR 21753, Apr. 22, 2004]

**Not Applicable.** The Permittee has reviewed the contents of 40 CFR 63.16, Performance Track Provisions. FHML is not a Performance Track member facility.

### **4.1.11 40 CFR 63 Subpart AAAA NESHAPS FOR MSW LANDFILLS**

Title 40: Protection of Environment

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

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

**§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:

**Applicable. FHMRL meets criteria 1 and 2.**

(1) Your MSW landfill is a major source as defined in 40 CFR 63.2 [i.e., > 10 tpy any single HAP] of subpart A.

**Applicable. The facility is a Title V major source of formaldehyde.**

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

**Applicable. FHMRL became a Major Source after E2 start-up.**

(3) Your MSW landfill is an area source [i.e., TAP < 10 tpy or sum of all TAPs > 25 tpy] landfill that has a design capacity equal to or greater than 2.5 million megagrams (Mg) and 2.5 million cubic meters (m<sup>3</sup>) 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.

**Not Applicable. FHMRL has formaldehyde TAP >10 tpy and NMOC emissions > 50 Mg/yr.**

**OR**

(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:

**Not Applicable. FHMRL does not utilize a bioreactor cell.**

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

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

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

#### **§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.

**Applicable. FHMRL became an affected source under 40 CFR 63 Subpart AAAA, after the startup of Engine E2.**

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

**Applicable. FHMRL became an affected source under 40 CFR 63 Subpart AAAA, after the startup of Engine E2.**

(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.

**Applicable.**

(e) If your landfill is a new affected source and is an area source [i.e., no TAP > 10tpy facility-wide] meeting the criteria in §63.1935(a)(3) [i.e., NMOC > 50 Mg/yr], 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.

### **§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<sup>3</sup>, 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.

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

**Not Applicable. FHMRL is an affected source under 40 CFR 63 Subpart AAAA but does not utilize a bioreactor cell.**

### **§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.

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

**Not Applicable. FHMRL is not an affected source under 40 CFR 63 Subpart AAAA, given that it does not meet the criteria in §63.1935(a) or (b), nor does it utilize a bioreactor cell.**

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.

### *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.

**Applicable. FHMRL does comply with the applicable requirements of 40 CFR 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.

**Not Applicable. FHMRL DOES comply with the applicable requirements of 40 CFR 60 Subpart WWW. FHMRL is not 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. At such time as a collection and control system is required under 40 CFR 60.752(b)(2), this requirement will apply.**

(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.

**Not Applicable. FHMRL's collection and control system was installed at the owner's convenience, not to comply with 40 CFR 60.752(b)(2)(ii). No design plan (containing associated alternatives) are applicable until such compliance is required.**

(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<sup>3</sup>, 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).

### *General and Continuing Compliance Requirements*

**Not Applicable. FHMRL does comply with the applicable requirements of 40 CFR 60 Subpart WWW. Permittee understands that, at such time as a collection and control system is required under 40 CFR 60.752(b)(2), the requirements 63.1960 through 63.1980, inclusive, will apply.**

#### **§63.1960 How is compliance determined?**

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

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

**Not Applicable. FHMRL does comply with the applicable requirements of 40 CFR 60 Subpart WWW. Permittee understands that, at such time as a collection and control system is required under 40 CFR 60.752(b)(2), the requirements 63.1960 through 63.1980, inclusive, will apply.**

#### **§63.1965 What is a deviation?**

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

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

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

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

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

**Not Applicable. FHMRL does comply with the applicable requirements of 40 CFR 60 Subpart WWW. Permittee understands that, at such time as a collection and control system is required under 40 CFR 60.752(b)(2), the requirements 63.1960 through 63.1980, inclusive, will apply.**

#### **§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.

**Not Applicable. FHMRL does comply with the applicable requirements of 40 CFR 60 Subpart WWW. Permittee understands that, at such time as a collection and control system is required under 40 CFR 60.752(b)(2), the requirements 63.1960 through 63.1980, inclusive, will apply.**

### *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.

**Not Applicable. FHMRL does comply with the applicable requirements of 40 CFR 60 Subpart WWW. Permittee understands that, at such time as a collection and control system is required under 40 CFR 60.752(b)(2), the requirements 63.1960 through 63.1980, inclusive, will apply.**

### *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.

## **Not Applicable to Permittee. DEQ function**

### **§63.1990 What definitions apply to this subpart?**

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

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

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

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

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

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

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

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

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

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

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

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

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

**Applicable.**

**Table 1 to Subpart AAAA of Part 63**

**Applicability of NESHAP General Provisions to Subpart AAAA**

<b>Part 63 Citation</b>	<b>Description</b>	<b>Explanation</b>
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	
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 <b>existing</b> , newly constructed, and reconstructed sources	
63.6(e)	Operation and maintenance requirements, <b>startup, shutdown and malfunction plan provisions</b>	
63.6(f)	Compliance with non-opacity 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 <b>startup, shutdown and malfunction</b> are consistent with the procedures in the <b>SSM Plan</b> , this information shall be included in a <b>semi-annual SSM report</b> . Any time an <b>action taken during a SSM is not consistent with the SSM Plan</b> , the source shall <b>report actions taken within 2 working days</b> after commencing such actions, followed by a <b>letter 7 days after the event</b>	

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	

**§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 [i.e., no TAP > 10 tpy facility-wide] (or §63.1935(a)(3) [i.e., NMOC > 50 Mg/yr]) 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.

**Applicable.** After the start-up of engine E2, FHMRL facility-wide formaldehyde estimated emissions exceeded > 10 tpy, although estimated FHMRL NMOC emissions are not expected to exceed 50 Mg/yr beyond the year 2033.

**§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

**Applicable**

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

**Applicable**

(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<sup>3</sup>) 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.

**Not Applicable**

FHMRL began accepting waste in 1943 and became compliant with Subtitle D in 1993, with a design capacity > 2.5 Mg, but with NMOC emissions of the landfill < 50 Mg/yr (estimated after 2033).

**4.1.12 40 CFR 63 Subpart ZZZZ NESHAPS FOR RICE ENGINES**

Title 40: Protection of Environment

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

Subpart ZZZZ—NATIONAL EMISSIONS STANDARDS FOR HAZARDOUS AIR POLLUTANTS FOR STATIONARY RECIPROCATING INTERNAL COMBUSTION ENGINES

**§63.6590 What parts of my plant does this subpart cover?**

This subpart applies to each affected source.

(a) *Affected source.* An affected source is any **existing, new,** or reconstructed stationary RICE located at a major or area source of HAP emissions, excluding stationary RICE being tested at a stationary RICE test cell/stand.

**Applicable. Existing Engines E1 & E2 at the FHMRL are both new RICE engines that are located at a Major Source of HAPs and where compliance will be demonstrated by periodic source testing for both Engine E1 and E2.**

(1) *Existing stationary RICE.*

(i) For stationary RICE with a site rating of **more than 500** brake horsepower (HP) located at a **major source of HAP emissions,** a stationary RICE is **existing** if you commenced construction or reconstruction of the stationary RICE **before December 19, 2002.**

**Not Applicable. Existing Engines E1 & E2 at the FHMRL are both new RICE engines that are located at a Major Source of HAPs. Both E1 and E2 were constructed after December 19, 2002 and are therefore “new sources.”**

(ii) For stationary RICE with a site rating of **less than or equal to 500** brake HP located at a major source of HAP emissions, a stationary RICE is existing if you commenced construction or reconstruction of the stationary RICE before June 12, 2006.

**Not Applicable**

(iii) For stationary RICE located at an **area source of HAP emissions,** a stationary RICE is existing if you commenced construction or reconstruction of the stationary RICE before June 12, 2006.

**Not Applicable**

(iv) A change in ownership of an existing stationary RICE does not make that stationary RICE a new or reconstructed stationary RICE.

**Not Applicable**

(2) *New stationary RICE.*

(i) A stationary RICE with a site rating of **more than 500** brake HP located at a **major source of HAP emissions** is **new** if you commenced construction of the stationary RICE on or **after December 19, 2002**

**Applicable. Existing Engines E1 & E2 at the FHMRL are both “new” RICE engines that are located at a Major Source of HAPs.**

(ii) A stationary RICE with a site rating of equal to or **less than 500 brake HP** located at a **major source** of HAP emissions is new if you commenced construction of the stationary RICE on or after June 12, 2006.

**Not Applicable**

(iii) A stationary RICE located at an **area source** of HAP emissions is **new** if you commenced construction of the stationary RICE on or after June 12, 2006.

**Not Applicable**

(3) *Reconstructed stationary RICE.*

**Not Applicable**

- (i) A stationary RICE with a site rating of more than 500 brake HP located at a major source of HAP emissions is reconstructed if you meet the definition of reconstruction in §63.2 and reconstruction is commenced on or after December 19, 2002.
- (ii) A stationary RICE with a site rating of equal to or less than 500 brake HP located at a major source of HAP emissions is reconstructed if you meet the definition of reconstruction in §63.2 and reconstruction is commenced on or after June 12, 2006.
- (iii) A stationary RICE located at an area source of HAP emissions is reconstructed if you meet the definition of reconstruction in §63.2 and reconstruction is commenced on or after June 12, 2006.

(b) Stationary RICE **subject to limited requirements.**

**Not Applicable**

(1) An affected source which meets either of the criteria in paragraphs (b)(1)(i) through (ii) of this section does not have to meet the requirements of this subpart and of subpart A of this part except for the initial notification requirements of §63.6645(f).

- (i) The stationary RICE is a new or reconstructed emergency stationary RICE with a site rating of more than 500 brake HP located at a major source of HAP emissions that does not operate or is not contractually obligated to be available for more than 15 hours per calendar year for the purposes specified in §63.6640(f)(2)(ii) and (iii).
- (ii) The stationary RICE is a new or reconstructed limited use stationary RICE with a site rating of more than 500 brake HP located at a major source of HAP emissions.

(2) A **new** or reconstructed stationary RICE with a site rating of **more than 500** brake HP located at a **major source of HAP** emissions which **combusts landfill** or digester **gas** equivalent to 10 percent or more of the gross heat input on an annual basis must meet the initial notification requirements of §63.6645(f) and the requirements of §§63.6625(c), 63.6650(g), and 63.6655(c). These stationary RICE do not have to meet the emission limitations and operating limitations of this subpart.

(3) The following stationary RICE do not have to meet the requirements of this subpart and of subpart A of this part, including initial notification requirements:

- (i) **Existing** spark ignition 2 stroke lean burn (2SLB) stationary RICE with a site rating of more than 500 brake HP located at a major source of HAP emissions;
- (ii) **Existing** spark ignition 4 stroke lean burn (4SLB) stationary RICE with a site rating of more than 500 brake HP located at a major source of HAP emissions;
- (iii) **Existing** emergency stationary RICE with a site rating of more than 500 brake HP located at a major source of HAP emissions that does not operate or is not contractually obligated to be available for more than 15 hours per calendar year for the purposes specified in §63.6640(f)(2)(ii) and (iii).
- (iv) **Existing** limited use stationary RICE with a site rating of more than 500 brake HP located at a major source of HAP emissions;
- (v) **Existing** stationary RICE with a site rating of more than 500 brake HP located at a major source of HAP emissions that combusts landfill gas or digester gas equivalent to 10 percent or more of the gross heat input on an annual basis;

**Not Applicable. Both engines E1 and E2 are new engines under the definitions of this subpart, i.e., installed after December 19, 2002.**

(c) *Stationary RICE subject to Regulations under 40 CFR Part 60.* An affected source that meets **any** of the criteria in paragraphs **(c)(1) through (7)** of this section must meet the requirements of this part **by**

meeting the requirements of 40 CFR part 60 subpart IIII, for compression ignition engines or 40 CFR part 60 subpart JJJJ, for spark ignition engines. No further requirements apply for such engines under this part;

**Not Applicable.** The requirements of 40 CFR 63.6590(c) require Affected Sources that meet any of the criteria in paragraphs 40 CFR 63.6590(c)(1) through (c)(7) to meet the requirements of 40 CFR 63 by meeting the requirements of "... 40 CFR part 60 subpart JJJJ, for spark-ignition engines. No further requirements under 40 CFR 63 apply for such engines." After Engine E2 was installed, FHMRL became a Major Source since facility-wide formaldehyde emissions estimates exceeded 10 tpy. None of the seven exemption criteria of paragraphs (c)(1) through (7) of this section apply. 40 CFR 63 Subpart ZZZZ, in addition to 40 CFR 60 Subpart JJJJ govern engine emissions and operations.

1) A new or reconstructed stationary RICE located at an area source;

**Not Applicable.** After Engine E2 startup, FHMRL became a Major Source, since facility-wide formaldehyde emissions exceeded 10 tpy.

(2) A new or reconstructed 2SLB stationary RICE with a site rating of less than or equal to 500 brake HP located at a major source of HAP emissions;

**Not Applicable.** FHMRL engines E1 and E2 are not 2SLB engines, but rather are 4-stroke, lean-burn (4SLB) engines burning LFG.

(3) A new or reconstructed 4SLB stationary RICE with a site rating of less than 250 brake HP located at a major source of HAP emissions

**Not Applicable.** FHMRL engines E1 and E2 both have a site rating of 2242 bhp per engine.

(4) A new or reconstructed spark ignition 4 stroke rich burn (4SRB) stationary RICE with a site rating of less than or equal to 500 brake HP located at a major source of HAP emissions;

**Not Applicable.** FHMRL engines E1 and E2 are not 4SRB engines, but rather are 4-stroke, lean-burn engines burning LFG.

(5) A new or reconstructed stationary RICE with a site rating of less than or equal to 500 brake HP located at a major source of HAP emissions which combusts landfill or digester gas equivalent to 10 percent or more of the gross heat input on an annual basis;

**Not Applicable.** FHMRL engines E1 and E2 both have a site rating of 2242 bhp per engine

(6) A new or reconstructed emergency or limited use stationary RICE with a site rating of less than or equal to 500 brake HP located at a major source of HAP emissions;

**Not Applicable.** FHMRL engines E1 and E2 are intended to operate full time (8760 hrs/yr minus 5% down for scheduled maintenance). They are not emergency or limited use engines.

(7) A new or reconstructed compression ignition (CI) stationary RICE with a site rating of less than or equal to 500 brake HP located at a major source of HAP emissions.

[69 FR 33506, June 15, 2004, as amended at 73 FR 3604, Jan. 18, 2008; 75 FR 9674, Mar. 3, 2010; 75 FR 37733, June 30, 2010; 75 FR 51588, Aug. 20, 2010; 78 FR 6700, Jan. 30, 2013]

**Not Applicable.** FHMRL engines E1 and E2 are not CI engines, but rather are 4-stroke, Stationary, Spark Ignition (SI), lean-burn engines burning LFG.

**Table 8 to Subpart ZZZZ National Emission Standards for Hazardous Air Pollutants: Stationary RICE Engines**

**§63.6590 What parts of my plant does this subpart cover? [Note: Repeat from in the Section 6590 portion of TABLE 8]**

This subpart **applies to each affected source.**

(a) *Affected source.* An affected source is any **existing, new,** or reconstructed stationary RICE located at a **major or area source** of HAP emissions, excluding stationary RICE being tested at a stationary RICE test cell/stand.

**Applicable.** FHMRL is an affected source under this definition.

(1) *Existing stationary RICE.*

(i) For stationary RICE with a site rating of **more than 500 brake horsepower (HP) located at a major source of HAP emissions,** a stationary RICE is **existing** if you commenced **construction** or reconstruction **of the stationary RICE before December 19, 2002.**

**Not Applicable.** FHMRL's RICE engines E1 & E2 were commenced after December 10, 2002.

(ii) For stationary RICE with a site rating of less than or equal to 500 brake HP located at a major source of HAP emissions, a stationary RICE is existing if you commenced construction or reconstruction of the stationary RICE before June 12, 2006.

**Not Applicable.** FHMRL's RICE engines E1 & E2 both have a power rating > 500 BHP.

(iii) For **stationary RICE located at an area source of HAP emissions,** a stationary RICE is **existing** if you **commenced construction** or reconstruction of the stationary RICE **before June 12, 2006.**

**Not Applicable.** FHMRL's RICE engines E1 & E2 are located at a Major Source of HAP emissions and commenced construction after June 12, 2006.

(iv) A change in ownership of an existing stationary RICE does not make that stationary RICE a new or reconstructed stationary RICE.

**Not Applicable.** FHMRL's RICE engines are new sources and have not changed ownership.

(2) *New stationary RICE.*

(i) A stationary RICE with a site rating of **more than 500 brake HP** located at a **major source of HAP emissions** is **new** if you **commenced construction** of the stationary RICE on or **after December 19, 2002.**

**Applicable.** E1 and E2 are new stationary RICE engine sources located at FHMRL, which became a Major Source [facility] of HAPs emissions after Engine E2 came

**online in March 2019. Both Engines E1 & E2 commenced construction after December 19, 2002.**

- (ii) A stationary RICE with a site rating of equal to or less than 500 brake HP located at a major source of HAP emissions is new if you commenced construction of the stationary RICE on or after June 12, 2006.

**Not Applicable. FHMRL RICE engines E1 & E2 have a power rating > 500 BHP.**

- (iii) A stationary RICE located at an area source of HAP emissions is new if you commenced construction of the stationary RICE on or after June 12, 2006.

**Not Applicable. E1 and E2 are new sources located at FHMRL, which became a Major Source of HAPs emissions after Engine E2 started up in March 2019, which was commenced construction after June 12, 2006.**

(3) *Reconstructed stationary RICE.*

- (i) A stationary RICE with a site rating of more than 500 brake HP located at a major source of HAP emissions is reconstructed if you meet the definition of reconstruction in §63.2 and reconstruction is commenced on or after December 19, 2002.

**Not Applicable. Engines E1 and E2 are not re-constructed.**

- (ii) A stationary RICE with a site rating of equal to or less than 500 brake HP located at a major source of HAP emissions is reconstructed if you meet the definition of reconstruction in §63.2, and reconstruction is commenced on or after June 12, 2006.

**Not Applicable. FHMRL's Engines E1 & E2 have a power rating > 500 bhp and are not reconstructed.**

- (iii) A stationary RICE located at an area source of HAP emissions is reconstructed if you meet the definition of reconstruction in §63.2 and reconstruction is commenced on or after June 12, 2006.

**Not Applicable. FHMRL's RICE engines E1 & E2 were not reconstructed per §63.2.**

(b) *Stationary RICE subject to limited requirements.*

- (1) An affected source which meets either of the criteria in paragraphs (b)(1)(i) through (ii) of this section does not have to meet the requirements of this subpart and of subpart A of this part except for the initial notification requirements of §63.6645(f).

- (i) The stationary RICE is a new or reconstructed emergency stationary RICE with a site rating of more than 500 brake HP located at a major source of HAP emissions that does not operate or is not contractually obligated to be available for more than 15 hours per calendar year for the purposes specified in §63.6640(f)(2)(ii) and (iii).

- (ii) The stationary RICE is a new or reconstructed limited use stationary RICE with a site rating of more than 500 brake HP located at a major source of HAP emissions.

**Not Applicable. FHMRL Engines E1 & E2 are not Stationary RICE's subject to limited requirements because they do not meet the requirements of paragraphs (b)(1)(i) through (ii) of this section.**

(2) A new or reconstructed stationary RICE with a site rating of more than 500 brake HP located at a major source of HAP emissions which combusts landfill or digester gas equivalent to 10 percent or more of the gross heat input on an annual basis must meet the initial notification requirements of §63.6645(f) and the requirements of §§63.6625(c), 63.6650(g), and 63.6655(c). These stationary RICE do not have to meet the emission limitations and operating limitations of this subpart.

**Applicable. FHMRL Engine E1 and E2 are located at a major source of HAP emissions.**

(3) The following stationary RICE do not have to meet the requirements of this subpart and of subpart A of this part, including initial notification requirements:

(i) Existing spark ignition 2 stroke lean burn (2SLB) stationary RICE with a site rating of more than 500 brake HP located at a major source of HAP emissions

**Not Applicable; FHMRL is a new source.**

(ii) Existing spark ignition 4 stroke lean burn (4SLB) stationary RICE with a site rating of more than 500 brake HP located at a major source of HAP emissions.

**Not Applicable; FHMRL is a new source.**

(iii) Existing emergency stationary RICE with a site rating of more than 500 brake HP located at a major source of HAP emissions that does not operate or is not contractually obligated to be available for more than 15 hours per calendar year for the purposes specified in §63.6640(f)(2)(ii) and (iii) emissions

**Not Applicable; FHMRL is a new source.**

(iv) Existing limited use stationary RICE with a site rating of more than 500 brake HP located at a major source of HAP emissions.

**Not Applicable; FHMRL is a new source.**

(v) Existing stationary RICE with a site rating of more than 500 brake HP located at a major source of HAP emissions that combusts landfill gas or digester gas equivalent to 10 percent or more of the gross heat input on an annual basis emission.

**Not Applicable; FHMRL is a new source.**

(c) Stationary RICE subject to Regulations under 40 CFR Part 60. An affected source that meets any of the criteria in paragraphs (c)(1) through (7) of this section must meet the requirements of this part by meeting the requirements of 40 CFR part 60 subpart IIII, for compression ignition engines or 40 CFR part 60 subpart JJJJ, for spark ignition engines. No further requirements apply for such engines under this [63] part.

(1) A new or reconstructed stationary RICE located at an area source

(2) A new or reconstructed 2SLB stationary RICE with a site rating of less than or equal to 500 brake HP located at a major source of HAP emissions;

- (3) A new or reconstructed 4SLB stationary RICE with a site rating of **less than 250 brake HP** located at a major source of HAP emissions;
- (4) A new or reconstructed spark ignition **4 stroke rich burn** (4SRB) stationary RICE with a site rating of less than or equal to 500 brake HP located at a major source of HAP emissions;
- (5) A new or reconstructed stationary RICE with a site rating of **less than or equal to 500 brake HP** located at a major source of HAP emissions which combusts landfill or digester gas equivalent to 10 percent or more of the gross heat input on an annual basis;
- (6) A new or reconstructed **emergency** or limited use stationary RICE with a site rating of less than or equal to 500 brake HP located at a major source of HAP emissions;
- (7) A new or reconstructed **compression ignition (CI)** stationary RICE with a site rating of less than or equal to 500 brake HP located at a major source of HAP emissions.

[69 FR 33506, June 15, 2004, as amended at 73 FR 3604, Jan. 18, 2008; 75 FR 9674, Mar. 3, 2010; 75 FR 37733, June 30, 2010; 75 FR 51588, Aug. 20, 2010; 78 FR 6700, Jan. 30, 2013]

**Not Applicable.**

### **§63.6625 What are my monitoring, installation, collection, operation, and maintenance requirements?**

...(c) If you are operating a **new** or reconstructed stationary RICE which fires **landfill gas** or digester gas equivalent to 10 percent or more of the gross heat input on an annual basis, you must **monitor and record your fuel usage daily** with separate fuel meters to measure the volumetric flow rate of each fuel. In addition, you must operate your stationary RICE in a manner which **reasonably minimizes HAP emissions**.

[69 FR 33506, June 15, 2004, as amended at 73 FR 3606, Jan. 18, 2008; 75 FR 9676, Mar. 3, 2010; 75 FR 51589, Aug. 20, 2010; 76 FR 12866, Mar. 9, 2011; 78 FR 6703, Jan. 30, 2013]

**Applicable. FHMRL's RICE engines E1 & E2 fuel usage is monitored and recorded.**

### **§63.6645 What notifications must I submit and when?**

...(f) If you are required to submit an Initial Notification but are otherwise not affected by the requirements of this subpart, in accordance with §63.6590(b), your notification should include the information in §63.9(b)(2)(i) through (v), and a statement that your stationary RICE has no additional requirements and explain the basis of the exclusion (for example, that it operates exclusively as an emergency stationary RICE if it has a site rating of more than 500 brake HP located at a major source of HAP emissions).

[73 FR 3606, Jan. 18, 2008, as amended at 75 FR 9677, Mar. 3, 2010; 75 FR 51591, Aug. 20, 2010; 78 FR 6705, Jan. 30, 2013]

**Applicable as required by §63.6590(b)(2).**

### **§63.6650 What reports must I submit and when?**

...(g) If you are operating as a **new** or reconstructed stationary RICE which fires **landfill gas** or digester gas equivalent to 10 percent or more of the gross heat input on an annual basis, you must **submit an annual report** according to Table 7 of this subpart by the date specified unless the Administrator has approved a different schedule, according to the information described in paragraphs (b)(1) through (b)(5) of this section. You must report the data specified in (g)(1) through (g)(3) of this section.

- (1) Fuel flow rate of each fuel and the heating values that were used in your calculations. You must also demonstrate that the percentage of heat input provided by landfill gas or digester gas is equivalent to 10 percent or more of the total fuel consumption on an annual basis.
- (2) The operating limits provided in your federally enforceable permit, and any deviations from these limits.
- (3) Any problems or errors suspected with the meters.

[69 FR 33506, June 15, 2004, as amended at 75 FR 9677, Mar. 3, 2010; 78 FR 6705, Jan. 30, 2013]

**Applicable as required by §63.6590(b)(2).**

#### **§63.6655 What records must I keep?**

...(c)If you are operating a new or reconstructed stationary RICE which fires landfill gas or digester gas equivalent to 10 percent or more of the gross heat input on an annual basis, you must keep the records of your daily fuel usage monitors.

[69 FR 33506, June 15, 2004, as amended at 75 FR 9678, Mar. 3, 2010; 75 FR 51592, Aug. 20, 2010; 78 FR 6706, Jan. 30, 2013]

**Applicable as required by §63.6590(b)(2).**

#### **§63.6665 What parts of the General Provisions apply to me?**

**Table 8** to this subpart shows which parts of the General Provisions in §§63.1 through 63.15 apply to you. If you own or operate a new or reconstructed stationary RICE with a site rating of less than or equal to 500 brake HP located at a major source of HAP emissions (except new or reconstructed 4SLB engines greater than or equal to 250 and less than or equal to 500 brake HP), a new or reconstructed stationary RICE located at an area source of HAP emissions, or any of the following RICE with a site rating of more than 500 brake HP located at a major source of HAP emissions, you do not need to comply with any of the requirements of the General Provisions specified in Table 8: An existing 2SLB stationary RICE, an existing 4SLB stationary RICE, an existing stationary RICE that combusts landfill or digester gas equivalent to 10 percent or more of the gross heat input on an annual basis, an existing emergency stationary RICE, or an existing limited use stationary RICE. If you own or operate any of the following RICE with a site rating of more than 500 brake HP located at a major source of HAP emissions, you do not need to comply with the requirements in the General Provisions specified in Table 8 except for the initial notification requirements: A new stationary RICE that combusts landfill gas or digester gas equivalent to 10 percent or more of the gross heat input on an annual basis, a new emergency stationary RICE, or a new limited use stationary RICE.

[75 FR 9678, Mar. 3, 2010]

**Not Applicable. FHMRL is a Major Source for HAP emissions; therefore, not exempted from Subpart ZZZZ Table 8 requirements given 40 CFR 63.6665, etc.**

### **4.1.13 TITLE V CLASSIFICATION**

**Title V Classification (40 CFR Part 70) -- see IDAPA 58.01.01.300 Requirement to Obtain a Tier I Operating Permit**

**Applicable. FHMRL is required to obtain a Tier I operating permit by virtue of being subject to 40 CFR 60, Subpart WWW because the landfill's design capacity exceeded 2.5**

million megagrams, the threshold in Subpart WWW triggering the requirement to obtain a Tier I operating permit. The initial Tier I permit was issued July 18, 2013, under Subtitle WWW rules. The landfill currently holds operating permit T1-2018-0007 issued July 2, 2019.

Title V Classification (40 CFR Part 70) -- see IDAPA 58.01.01.300

**Applicable.** This PTC application has been certified in accordance with this subpart. See, e.g., Section 0.4 of this application.

Attainment Designation (40 CFR 81.313)

**Applicable.** The facility is located in Bannock County, which is designated as “attainment or unclassifiable” for PM-2.5, PM-10, SO<sub>2</sub>, NO<sub>2</sub>, CO, and Ozone. Refer to 40 CFR 81.313 for additional information.

#### 4.1.14 40 CFR 82 Subpart F FREON MANAGEMENT

TITLE 40—Protection of Environment  
PART 82—PROTECTION OF STRATOSPHERIC OZONE  
Subpart F—RECYCLING AND EMISSIONS REDUCTION

##### §82.1 Purpose and scope.

(a) The purpose of the regulations in this subpart is to implement the Montreal Protocol on Substances that Deplete the Ozone Layer and sections 602, 603, 604, 605, 606, 607, 614 and 616 of the Clean Air Act Amendments of 1990, Public Law 101-549. ....

(b) This subpart applies to any person that produces, transforms, destroys, imports or exports a controlled substance or imports or exports a controlled product.

[63 FR 41642, Aug. 4, 1998]

**Not Applicable.** FHMRL processes non-commercial HVAC equipment and reclaims and sells freons that are recovered. In performing this work, FHMRL does not produce, transform, destroy, import, or export a controlled substance. [ Note: FHMRL does not receive income from the disposition of the recovered freon, but instead pays the receiver to take ownership of the freon. All references in this section 4.1.14 to “FHMRL sells freons” are understood to mean “FHMRL transfers, after paying a consideration, ownership of the freon to the receiver.”]

##### §82.150 Purpose and scope.

...(b) This subpart applies to any person maintaining, servicing, or repairing appliances containing class I, class II or non-exempt substitute refrigerants. This subpart also applies to persons disposing of such appliances (including small appliances and motor vehicle air conditioners), refrigerant reclaimers, technician certifying programs, appliance owners and operators, manufacturers of appliances, manufacturers of recovery and/or recycling equipment, approved recovery and/or recycling equipment testing organizations, and persons buying, selling, or offering to sell class I, class II, or non-exempt substitute refrigerants.

[81 FR 82349, Nov. 11, 2016]

**Applicable to FHMRL facility, but not in the scope of PTC Permit or its modification.** FHMRL processes non-commercial HVAC equipment and reclaims and sells freons that are recovered.

## §82.152 Definitions.

*Appliance* ...

*Certified refrigerant recovery or recycling equipment*....

*Commercial refrigeration* means the refrigeration appliances used in the retail food and cold storage warehouse sectors. ....

*Component* means a part of the refrigerant circuit within an appliance including, but not limited to, compressors, condensers, evaporators, receivers, and all of its connections and subassemblies.

*Custom-built* means that the industrial process equipment or any of its components cannot be purchased and/or installed without being uniquely designed, fabricated and/or assembled to satisfy a specific set of industrial process conditions.

*Disposal* means the process leading to and including:

- (1) The discharge, deposit, dumping or placing of any discarded appliance into or on any land or water;
- (2) The disassembly of any appliance for discharge, deposit, dumping or placing of its discarded component parts into or on any land or water;
- (3) The vandalism of any appliance such that the refrigerant is released into the environment or would be released into the environment if it had not been recovered prior to the destructive activity;
- (4) The disassembly of any appliance for reuse of its component parts; or
- (5) The recycling of any appliance for scrap...

*Industrial process refrigeration* means complex customized appliances that are directly linked to the processes used in, for example.... industries...

*Reclaim* means to reprocess recovered refrigerant to all of the specifications...

*Recover* means to remove refrigerant in any condition from an appliance and to store it in an external container without necessarily testing or processing it in any way.

*Recycle*, when referring to refrigerant, means to extract refrigerant from an appliance (except MVACs) and clean it for reuse in equipment of the same owner ....

*Refrigerant* means, for purposes of this subpart, any substance, including blends and mixtures, consisting in part or whole of a class I or class II ozone-depleting substance or substitute that is used for heat transfer purposes and provides a cooling effect.

*Small appliance* ...

*Technician* means any person who in the course of maintenance, service, or repair of an appliance (except MVACs) could be reasonably expected to violate the integrity of the refrigerant circuit and therefore release refrigerants into the environment. .... Technicians could include but are not limited to installers, contractor employees, in-house service personnel, and owners and/or operators of appliances.

[58 FR 28712, May 14, 1993, as amended at 59 FR 42956, Aug. 19, 1994; 59 FR 55925, Nov. 9, 1994; 60 FR 40439, Aug. 8, 1995; 68 FR 43806, July 24, 2003; 69 FR 11978, Mar. 12, 2004; 70 FR 1991, Jan. 11, 2005; 70 FR 19278, Apr. 13, 2005; 81 FR 82349, Nov. 18, 2016]

**Applicable to FHMRL facility, but not in the scope of PTC Permit or its modification. FHMRL processes non-commercial HVAC equipment and reclaims and sells freons that are recovered, and utilizes the definitions provided here.**

## §82.154 Prohibitions.

(a) *Venting prohibition.* (1) No person maintaining, servicing, repairing, or disposing of an appliance or industrial process refrigeration may knowingly vent or otherwise release into the environment any refrigerant from such appliances. Notwithstanding any other provision of this subpart, the following

substitutes in the following end-uses are exempt from this prohibition and from the requirements of this subpart:

- (i) Carbon dioxide in any application;
- (ii) Nitrogen in any application;
- (iii) Water in any application;
- (iv) Ammonia in commercial or industrial process refrigeration or in absorption units;
- (v) Chlorine in industrial process refrigeration (processing of chlorine and chlorine compounds);
- (vi) Hydrocarbons in industrial process refrigeration (processing of hydrocarbons);
- (vii) Ethane (R-170) in very low temperature refrigeration equipment and equipment for non-mechanical heat transfer;
- (viii) Propane (R-290) in retail food refrigerators and freezers (stand-alone units only); household refrigerators, freezers, and combination refrigerators and freezers; self-contained room air conditioners for residential and light commercial air-conditioning and heat pumps; vending machines; and effective January 3, 2017, self-contained commercial ice machines, very low temperature refrigeration equipment, and water coolers;
- (ix) Isobutane (R-600a) in retail food refrigerators and freezers (stand-alone units only); household refrigerators, freezers, and combination refrigerators and freezers; and vending machines;
- (x) R-441A in retail food refrigerators and freezers (stand-alone units only); household refrigerators, freezers, and combination refrigerators and freezers; self-contained room air conditioners for residential and light commercial air-conditioning; heat pumps; and vending machines.

(2) De minimis releases associated with good faith attempts to recycle or recover refrigerants are not subject to this prohibition. Except for exempt substitutes, refrigerant releases are de minimis only if they occur when:

(i) The applicable practices in §82.155, §82.156, and §82.157 are observed, recovery and/or recycling machines that meet the requirements in §82.158 are used whenever refrigerant is removed from an appliance, the technician certification provisions in §82.161 are observed, and the reclamation requirements in §82.164 are observed; or

(ii) The requirements in subpart B of this part are observed.

(3) The knowing release of a class I or class II refrigerant or a non-exempt substitute refrigerant after its recovery from an appliance is a violation of the venting prohibition.

(b) No person may maintain, service, repair, or dispose of an appliance containing a class I or class II refrigerant or a non-exempt substitute refrigerant without:

(1) Observing the applicable practices in §82.155, §82.156, and §82.157; and

(2) Using recovery and/or recycling equipment that is certified for that type of refrigerant and appliance under §82.158.

(c) **Sales Restriction.**

(1) No person may sell or distribute, or offer for sale or distribution, any substance that consists in whole or in part of a class I or class II substance or, starting on January 1, 2018, any non-exempt substitute for use as a refrigerant unless:

(i) The buyer has been certified as a Type I, Type II, Type III, or Universal technician under §82.161;

(ii) The buyer employs at least one technician who is certified as a Type I, Type II, Type III, or Universal technician under §82.161 and provides proof of such to the seller;

(iii) The buyer has been certified in accordance with 40 CFR part 82, subpart B and the refrigerant is acceptable for use in MVACs under 40 CFR part 82, subpart G;

(iv) The buyer employs at least one person who is certified under 40 CFR part 82, subpart B, and provides proof of such to the seller and the refrigerant is acceptable for use in MVACs under 40 CFR part 82, subpart G. Nothing in this provision relieves persons of the requirements of §82.34(b) or §82.42(b);

(v) The refrigerant is sold only for eventual resale to persons certified under §82.161 or 40 CFR part 82, subpart B or to appliance manufacturers (e.g., sold by a manufacturer to a wholesaler, sold by a technician to a reclaimer);

(vi) The refrigerant is sold to an appliance manufacturer;

(vii) The refrigerant is contained in an appliance with a fully assembled refrigerant circuit or an appliance component;

(viii) The refrigerant is charged into an appliance by a certified technician or an apprentice during maintenance, service, or repair of the appliance; or

(ix) The non-exempt substitute refrigerant is intended for use in an MVAC and is sold in a container designed to hold two pounds or less of refrigerant, has a unique fitting, and, if manufactured or imported on or after January 1, 2018, has a self-sealing valve that complies with the requirements of paragraph (c)(2) of this section.

(2) *Self-sealing valve specifications.* This provision applies starting January 1, 2018, for all containers holding two pounds or less of non-exempt substitute refrigerant for use in an MVAC that are manufactured or imported on or after that date.

(i) Each container holding two pounds or less of non-exempt substitute refrigerant for use in an MVAC must be equipped with a single self-sealing valve that automatically closes and seals when not dispensing refrigerant.

(ii) The leakage rate from each container must not exceed 3.00 grams per year when the self-sealing valve is closed. This leakage rate applies to new, full containers as well as containers that may be partially full.

(iii) The leakage rate must be determined using the standards described in appendix E (incorporated by reference, see §82.168).

(iv) All testing to demonstrate compliance with this paragraph must be conducted by an independent test laboratory in the United States. For purposes of this requirement, an independent test laboratory is one that is not owned, operated, or affiliated with the applicant certifying equipment and/or products.

(3) *Recordkeeping.*

(i) Persons who sell or distribute, or offer to sell or distribute, any class I or class II refrigerant, or, starting on January 1, 2018, any non-exempt substitute refrigerant must keep invoices that indicate the name of the purchaser, the date of sale, and the quantity of refrigerant purchased unless they are selling exempt substitutes (those substitutes used in the end-uses specified as exempt in paragraph (a)(1) of this section) or small cans of MVAC refrigerant in accordance with paragraph (c)(1)(ix) of this section. In instances where the buyer employs a person certified under §82.161 or 40 CFR part 82, subpart B, the seller must keep the documentation provided by the buyer to demonstrate such employment. All records must be kept for three years.

(ii) Electronic or paper copies of all records described in appendix E must be maintained by manufacturers of containers holding two pounds or less of non-exempt substitute refrigerant for use in an MVAC to verify self-sealing valves meet the requirements specified in paragraph (c)(2) of this section. All records must be kept for three years after each purchase.

(d) *Sale of Used Refrigerant.* No person may sell or distribute, or offer for sale or distribution, for use as a refrigerant any class I or class II substance or non-exempt substitute consisting wholly or in part of used refrigerant unless the refrigerant:

(1) Has been reclaimed by a person who has been certified as a reclaimer under §82.164;

(2) was used only in an MVAC or MVAC-like appliance and is to be used only in an MVAC or MVAC-like appliance and recycled in accordance with 40 CFR part 82, subpart B;

(3) is contained in an appliance that is sold or offered for sale together with a fully assembled refrigerant circuit;

(4) is being transferred between or among a parent company and one or more of its subsidiaries, or between or among subsidiaries having the same parent company; or

(5) is being transferred between or among a Federal agency or department and a facility or facilities owned by the same Federal agency or department.

*(e) Manufacture and Sale of Appliances.*

(1) No person may sell or distribute, or offer for sale or distribution, any appliance (except small appliances and appliances containing only refrigerants that have been exempted under paragraph (a)(1) of this section) unless it is equipped with a servicing aperture to facilitate the removal of refrigerant at servicing and disposal.

(2) No person may sell or distribute, or offer for sale or distribution, any small appliance (except appliances containing only refrigerants that have been exempted under paragraph (a)(1) of this section) unless it is equipped with a process stub to facilitate the removal of refrigerant at servicing and disposal.

*(f) One-time expansion devices.* No person may manufacture or import a one-time expansion device unless the only refrigerants it contains have been exempted under paragraph (a)(1) of this section.

*(g) Rules stayed for consideration.* Notwithstanding any other provisions of this subpart, the effectiveness of 40 CFR 82.154(c), only as it applies to refrigerant contained in appliances without fully assembled refrigerant circuits, is stayed from April 27, 1995, until EPA takes final action on its reconsideration of these provisions. EPA will publish any such final action in the FEDERAL REGISTER.

[81 FR 82352, Nov. 18, 2016, as amended at 81 FR 86881, Dec. 1, 2016; 82 FR 61184, Dec. 27, 2017]

**Applicable to FHMRL facility, but not in the scope of PTC Permit or its modification. FHMRL processes non-commercial HVAC equipment and reclaims and sells freons that are recovered. FHMRL acknowledges the prohibitions of §82.154.**

**§82.155 Safe disposal of appliances.**

Until January 1, 2018, this section applies only to disposal of appliances containing class I and class II refrigerants. Starting on January 1, 2018, this section applies to disposal of appliances containing any class I or class II refrigerant or any non-exempt substitute refrigerant.

(a) Persons recovering refrigerant from a small appliance, MVAC, or MVAC-like appliance for purposes of disposal of these appliances must evacuate refrigerant to the levels in §82.156(b) through (d) using recovery equipment that meets the standards in §82.158(e) through (g), or 40 CFR part 82 subpart B, as applicable.

(b) The final processor—i.e., persons who take the final step in the disposal process (including but not limited to scrap recyclers and landfill operators) of a small appliance, MVAC, or MVAC-like appliance—must either:

(1) Recover any remaining refrigerant from the appliance in accordance with paragraph (a) of this section; or

(2) Verify using a signed statement or a contract that all refrigerant that had not leaked previously has been recovered from the appliance or shipment of appliances in accordance with paragraph (a) of this section. If using a signed statement, it must include the name and address of the person who recovered the refrigerant and the date the refrigerant was recovered. If using a signed contract between the supplier and the final processor, it must either state that the supplier will recover any remaining refrigerant from the appliance or shipment of appliances in accordance with paragraph (a) of this section prior to delivery or verify that the refrigerant had been properly recovered prior to receipt by the supplier.

(i) It is a violation of this subpart to accept a signed statement or contract if the person receiving the statement or contract knew or had reason to know that the signed statement or contract is false.

(ii) The final processor must notify suppliers of appliances that refrigerant must be properly recovered in accordance with paragraph (a) of this section before delivery of the items to the facility. The form of this notification may be signs, letters to suppliers, or other equivalent means.

(iii) If all the refrigerant has leaked out of the appliance, the final processor must obtain a signed statement that all the refrigerant in the appliance had leaked out prior to delivery to the final processor

and recovery is not possible. "Leaked out" in this context means those situations in which the refrigerant has escaped because of system failures, accidents, or other unavoidable occurrences not caused by a person's negligence or deliberate acts such as cutting refrigerant lines.

(c) *Recordkeeping*. The final processor of a small appliance, MVAC, or MVAC-like appliance must keep a copy of all the signed statements or contracts obtained under paragraph (b)(2) of this section on site, in hard copy or in electronic format, for three years.

[81 FR 82353, Nov. 18, 2016]

**Applicable to FHMRL facility, but not in the scope of PTC Permit or its modification. FHMRL processes non-commercial HVAC equipment and reclaims and sells freons that are recovered. FHMRL acknowledges the Safe disposal practices of §82.155.**

#### **§82.156 Proper evacuation of refrigerant from appliances.**

Until January 1, 2018, this section applies only to evacuation of refrigerant from appliances containing class I or class II refrigerants. Starting on January 1, 2018, this section applies to evacuation of refrigerant from appliances containing any class I or class II refrigerant or any non-exempt substitute refrigerant, excluding paragraph (i) of this section which applies only to appliances containing class I or class II refrigerants until January 1, 2019. Starting January 1, 2019, the provisions in §82.157 apply in lieu of paragraph (i) of this section...

[58 FR 28712, May 14, 1993, as amended at 59 FR 42956, 42962, Aug. 19, 1994; 59 FR 55926, Nov. 9, 1994; 60 FR 40440, Aug. 8, 1995; 68 FR 43807, July 24, 2003; 69 FR 11979, Mar. 12, 2004; 70 FR 1991, Jan. 11, 2005; 79 FR 29690, May 23, 2014; 8a FR 82354, Nov. 18, 2016]

**Applicable to FHMRL facility, but not in the scope of PTC Permit or its modification. FHMRL processes non-commercial HVAC equipment and reclaims and sells freons that are recovered. FHMRL acknowledges the protocols for proper evacuation of refrigerant from appliances of §82.156.**

#### **§82.157 Appliance maintenance and leak repair.**

(a) *Applicability*. This section applies as of January 1, 2019. This section applies only to appliances with a full charge of 50 or more pounds of any class I or class II refrigerant or any non-exempt substitute refrigerant. Unless otherwise specified, the requirements of this section apply to the owner or operator of the appliance...

[81 FR 82356, Nov. 18, 2016]

**Not Applicable. FHMRL processes non-commercial HVAC equipment and reclaims and sells freons that are recovered. FHMRL does not perform appliance maintenance and leak repair. Therefore §82.157 is not applicable.**

#### **§82.158 Standards for recovery and/or recycling equipment.**

Starting January 1, 2017, this section applies to recovery and/or recycling equipment for use during the maintenance, service, repair, or disposal of appliances containing any class I or class II refrigerant or any non-exempt substitute refrigerant.

(a) No person may manufacture or import recovery and/or recycling equipment for use during the maintenance, service, repair, or disposal of appliances unless the equipment is certified in accordance with this section.

(b) No person may alter the design of certified refrigerant recovery and/or recycling equipment in a way that would affect the equipment's ability to meet the certification standards in this section without resubmitting the altered design for certification testing. Until it is tested and shown to meet the certification standards in this section, equipment so altered will be considered uncertified.

(c) Recovery and/or recycling equipment manufactured or imported before November 15, 1993, intended for use during the maintenance, service, repair, or disposal of appliances (except small appliances, MVACs, and MVAC-like appliances) will be considered certified if it is capable of achieving the level of evacuation specified in Table 2 of this section when tested using a properly calibrated pressure gauge...

[81 FR 82360, Nov. 18, 2016]

**Not Applicable. FHMRL processes non-commercial HVAC equipment and reclaims and sells freons that are recovered. Although FHMRL performs Freon recovery, it does manufacture or sell Freon recovery equipment.**

#### **§82.160 Approved equipment testing organizations.**

[81 FR 82362, Nov. 18, 2016]

**Not Applicable. FHMRL processes non-commercial HVAC equipment and reclaims and sells freons that are recovered. FHMRL utilizes equipment that is traceable to approved equipment testing organizations. FHMRL does not perform equipment testing that is regulated by 82.160.**

#### **§82.161 Technician certification.**

Until January 1, 2018, this section applies only to technicians and organizations certifying technicians that maintain, service, or repair appliances containing class I or class II refrigerants. Starting on January 1, 2018, this section applies to technicians and organizations certifying technicians that maintain, service, or repair appliances containing any class I or class II refrigerant or any non-exempt substitute refrigerant.

(a) Certification Requirements. (1) Any person who could be reasonably expected to violate the integrity of the refrigerant circuit during the maintenance, service, repair, or disposal of appliances (as follows in this paragraph) containing a class I or class II refrigerant or a non-exempt substitute refrigerant must pass a certification exam offered by an approved technician certification program.

(i) Persons who maintain, service, or repair small appliances must be certified as Type I technicians.

(ii) Persons who maintain, service, repair, or dispose of medium-, high-, or very high-pressure appliances (except small appliances, MVACs, and MVAC-like appliances) must be certified as Type II technicians.

(iii) Persons who maintain, service, repair, or dispose of low-pressure appliances must be certified as Type III technicians.

(iv) Persons who maintain, service, repair, or dispose of all appliances described in paragraph (a)(1)(i) through (iii) of this section must be certified as Universal technicians.

(v) Technicians who maintain, service, or repair MVAC-like appliances must either be certified as Type II technicians or be certified in accordance with 40 CFR part 82, subpart B.

(vi) Persons who maintain, service, or repair MVAC appliances for consideration must be certified in accordance with 40 CFR part 82, subpart B.

(vii) Persons who dispose of small appliances, MVACs, and MVAC-like appliances are not required to be certified.

(2) Apprentices are exempt from the requirement in paragraph (a)(1) of this section provided the apprentice is closely and continually supervised by a certified technician while performing any maintenance, service, repair, or disposal that could reasonably be expected to release refrigerant from an appliance into the environment, except those substitute refrigerants exempted under paragraph (a)(1) of this section. The supervising certified technician and the apprentice have the responsibility to ensure that the apprentice complies with this subpart.

(3) The Administrator may require technicians to demonstrate at their place of business their ability to perform proper procedures for recovering and/or recycling refrigerant, except those substitute refrigerants exempted under paragraph (a)(1) of this section. Failure to demonstrate or failure to properly use the equipment may result in revocation or suspension of the certificate. Failure to abide by any of the provisions of this subpart may also result in revocation or suspension of the certificate. If a technician's certificate is revoked, the technician would need to recertify before maintaining, servicing, repairing, or disposing of any appliances.

(4) (i) Technicians certified under this section must keep a copy of their certificate at their place of business...

...(6) Starting January 1, 2018, programs certifying technicians, excluding Federally-run programs, must publish online a list of all technicians they have certified on or after January 1, 2017. Certifying organizations must update these lists at least annually...

[81 FR 82363, Nov. 18, 2016]

**Applicable to FHMRL facility, but not in the scope of PTC Permit or its modification. FHMRL processes non-commercial HVAC equipment and reclaims and sells freons that are recovered. FHMRL utilizes Type III Technicians that salvage HVAC equipment prior to disposal but do not utilize technicians maintain service, or repair appliances containing any class I or class II refrigerant or any non-exempt substitute refrigerant.**

#### **§82.164 Reclaimer certification.**

(a) All persons reclaiming used class I or II refrigerant or non-exempt substitute refrigerant for sale to a new owner must meet the following requirements:

(1) Reclaim such refrigerant to all the specifications in appendix A of this subpart (based on AHRI Standard 700-2016, Specifications for Refrigerants) that are applicable to that refrigerant;

(2) Verify that each batch of such refrigerant reclaimed meets these specifications using the analytical methodology prescribed in appendix A of this subpart, which includes the primary methodologies included in appendix A of AHRI Standard 700-2016;

**[Note: At FHMRL, the analytical work is performed by the Freon-receiving organization.]**

(3) Release no more than 1.5 percent of the refrigerant during the reclamation process;

(4) Dispose of wastes from the reclamation process in accordance with all applicable laws and regulations; and

(5) Maintain records and submit reports in accordance with paragraph (d) of this section.

(b) The owner or a responsible officer reclaiming used refrigerant for sale to a new owner, except for persons who properly certified under this section before May 11, 2004, must certify to the Administrator at the address in §82.160(a) that they will meet the requirements in paragraph (a) of this section. The certification must include the name and address of the reclaimer and a list of equipment used to reclaim the refrigerant to the required standard, and to analyze the refrigerant to ensure it meets these specifications.

(c) Certificates are not transferable. In the event of a change in ownership of an entity which reclaims refrigerant, the new owner of the entity must certify with the Administrator within 30 days of the change

that they will meet the reclaimer certification requirements. In the event of a change in business management, location, or contact information, the owner of the entity must notify EPA within 30 days of the change at the address in §82.160(a).

(d) Recordkeeping and reporting. (1) Reclaimers must maintain records, by batch, of the results of the analysis conducted to verify that reclaimed refrigerant meets the necessary specifications in paragraph (a)(2) of this section.

(2) Reclaimers must maintain records of the names and addresses of persons sending them material for reclamation and the quantity of the material (the combined mass of refrigerant and contaminants) by refrigerant type sent to them for reclamation. Such records must be maintained on a transactional basis for three years.

(3) Reclaimers must report to the Administrator annually by February 1 of the next calendar year the total annual quantity of material (the combined mass of refrigerant and contaminants) by refrigerant type sent to them for reclamation, the total annual mass of each refrigerant reclaimed, and the total annual mass of waste products.

(e) Failure to abide by any of the provisions of this subpart may result in revocation or suspension of the certification of the reclaimer in accordance with §82.169. In such cases, the Administrator must give notice to the organization setting forth the basis for the determination.

[81 FR 82364, Nov. 18, 2016]

**Applicable to FHMRL facility, but Not in scope of PTC Permit or its modification. FHMRL processes non-commercial HVAC equipment and reclaims and sells freons that are recovered. FHMRL performs reclaiming, that is regulated by 82.164.**

#### **§82.166 Reporting and recordkeeping requirements for leak repair.**

[58 FR 28712, May 14, 1993, as amended at 59 FR 42957, Aug. 19, 1994; 60 FR 40443, Aug. 8, 1995; 69 FR 11981, Mar. 12, 2004; 70 FR 1992, Jan. 11, 2005; 79 FR 64290, Oct. 28, 2014; 81 FR 82364, Nov. 18, 2016]

**Not Applicable. FHMRL processes non-commercial HVAC equipment and reclaims and sells freons that are recovered. FHMRL does not perform leak repairs that are regulated by 82.166.**

#### **§82.168 Incorporation by Reference.**

[81 FR 82364, Nov. 18, 2016]

**Applicable to FHMRL facility, but not in the scope of PTC Permit or its modification. FHMRL processes non-commercial HVAC equipment and reclaims and sells freons that are recovered. FHMRL notes the standards that are referenced by 82.168.**

#### **§82.169 Suspension and revocation procedures.**

(a) Failure to abide by any of the provisions of this subpart may result in the revocation or suspension of the approval to certify technicians (under §82.161), approval to act as a recovery/recycling equipment testing organization (under §82.160), or reclaimer certification (under §82.164), hereafter referred to as the "organization." In such cases, the Administrator or her or his designated representative shall give notice of an impending suspension to the person or organization setting forth the facts or conduct that provide the basis for the revocation or suspension...

[68 FR 43809, July 24, 2003]

**Applicable to FHMRL facility, but not in the scope of PTC Permit or its modification. FHMRL processes non-commercial HVAC equipment and reclaims and sells freons that are recovered. FHMRL notes the revocation procedures that are referenced by 82.169.**

#### **4.1.15 40 CFR 98 GREEN HOUSE GAS REPORTING**

TITLE 40—Protection of Environment

PART 98—MANDATORY GREENHOUSE GAS REPORTING

Subpart A—GENERAL PROVISION

##### **§98.2 Who must report?**

(a) The GHG reporting requirements and related monitoring, recordkeeping, and reporting requirements of this part apply to the owners and operators of any facility that is located in the United States or under or attached to the Outer Continental Shelf (as defined in 43 U.S.C. 1331) and that meets the requirements of **either** paragraph (a)(1), (a)(2), **or** (a)(3) of this section; and any supplier that meets the requirements of paragraph (a)(4) of this section:

(1) *A facility that contains any source category that is listed in Table A-3 of this subpart.* For these facilities, the annual GHG report must cover stationary fuel combustion sources (subpart of this part), miscellaneous use of carbonates (subpart U of this part), and all applicable source categories listed in Tables A-3 and A-4 of this subpart.

Table A-3 [75 FR 39760, July 12, 2010, as amended at 75 FR 74817, 75078, Dec. 1, 2010; 76 FR 73900, Nov. 29, 2011; 81 FR 89250, Dec. 9, 2016]

**Applicable. The FHMRL facility is a Municipal Solid Waste Landfill, which category is included in Table A-3. The report covers landfill (Subpart C [engines, but not flare], and Subpart HH [landfill, flare, and Subpart C sources]).**

(2) A facility that contains any source category that is listed in Table A-4 of this subpart and that emits 25,000 metric tons CO<sub>2e</sub> or more per year...

**Not Applicable. The FHMRL facility is not an Industrial Waste Landfill or any other category that is named in the listing of Table A-4.**

(3) A facility that in any calendar year starting in 2010 **meets all three** of the conditions listed in this paragraph (a)(3). For these facilities, the annual GHG report must cover emissions from stationary fuel combustion sources only....

(i) The facility does not meet the requirements of either paragraph (a)(1) or (a)(2) of this section.

**NO.** The FHMRL facility is a Municipal Solid Waste Landfill that IS included in the listing of Table A-3 and so DOES meet the requirements of paragraph (a)(1)

(ii) The aggregate maximum rated heat input capacity of the stationary fuel combustion units at the facility is 30 mm Btu/hr or greater.

**YES.** The current aggregate maximum rated heat input capacity of the stationary fuel combustion units at the FHMRL facility is 40.5 MMBtu/hr. See Table 4.1-1, which follows.

(iii) The facility emits 25,000 metric tons CO<sub>2</sub>e or more per year in combined emissions from all stationary fuel combustion sources.

**YES.** The current maximum aggregate CO<sub>2</sub>e emissions of the stationary fuel combustion units at the FHMRL facility is 44,275 tpy CO<sub>2</sub>e. **Table 4.1-1**, which follows.

**Not Applicable.** The FHMRL facility does not meet criteria (i), i.e., if it were not a Table A-3-listed source.

Source	Post-Project	Heat Capacity ( MM Btu/hr)	GHG (tpy CO <sub>2</sub> e)
<b>F1</b>	Existing Open Flare	11.138	5773
<b>E1</b>	Existing Cat 3520C Engine	14.681	19251
<b>E2</b>	Existing Cat 3520C Engine	14.681	19251
<b>TOTAL</b>		<b>40.500</b>	<b>44275</b>

Source: Extracted from *Fort Hall Emissions Inventory 20.2.5 Build-Up Sheets (GHG Src TAP Tab)* of Excel file "*Fort Hall Emissions Inventory 20.2.5*"

(4) A supplier that is listed in Table A-5 of this subpart...

[74 FR 56374, Oct. 30, 2009, as amended at 75 FR 39758, July 12, 2010; 75 FR 57685, Sept. 22, 2010; 76 FR 73899, Nov. 29, 2011; 75 FR 74487, Nov. 30, 2010; 79 FR 73776, Dec. 11, 2014; 81 FR 89248, Dec. 9, 2016]

**Not Applicable.** The FHMRL facility is a Municipal Solid Waste Landfill, not a supplier, and is not included in the listing of Table A-5.

## **GREENHOUSE GAS REPORTING APPLICABILITY (40 CFR 98, SUBPART C)**

TITLE 40—Protection of Environment

PART 98—MANDATORY GREENHOUSE GAS REPORTING

Subpart C—General Stationary Fuel Combustion Sources

### **§98.30 Definition of the source category.**

(a) Stationary fuel combustion sources are devices that combust solid, liquid, or **gaseous fuel**, generally for the purposes of **producing electricity**, generating steam, or providing useful heat or energy for industrial, commercial, or institutional use, or reducing the volume of waste by removing combustible matter. Stationary fuel combustion sources include, but are not limited to, boilers, simple and combined-cycle combustion turbines, **engines**, **incinerators**, and process heaters.

(b) This source category **does not include**:

(1) Portable equipment, as defined in §98.6.

(2) Emergency generators and emergency equipment, as defined in §98.6.

(3) Irrigation pumps at agricultural operations.

(4) **Flares**, unless otherwise required by provisions of another subpart of this part to use methodologies in this subpart

**Applicable, i.e., no other subpart, requires the use of 40 CFR 98 Subpart C methodologies. Flares are classed as “incinerators” under IDAPA 58.01.01.006.58 if their purpose is to “destroy refuse by burning” or if they are intended for “...destruction of any combustible... gaseous material by burning in a flare stack...” However, IDAPA .58.01.01 regulations do not require the use of 40 CFR 98 Subpart C methodologies. Therefore, this exemption of flares from the GHG “Stationary fuel combustion sources” is applicable.**

(5) **Electricity generating units** that are subject to subpart D of this part.

**Not Applicable. Subpart D electric generators are large utility generators that are subject to an Acid Rain program and CEM equipment is not applicable to FHMRL.**

(c) For a unit that combusts hazardous waste (as defined in §261.3 of this chapter), reporting of GHG emissions is not required unless either of the following conditions apply:

(1) Continuous emission monitors (CEMS) are used to quantify CO<sub>2</sub> mass emissions.

(2) Any fuel listed in Table C-1 of this subpart is also combusted in the unit. In this case, report GHG emissions from combustion of all fuels listed in Table C-1 of this subpart.

(d) You are **not required to report GHG emissions from pilot lights**. A pilot light is a small auxiliary flame that ignites the burner of a combustion device when the control valve opens.

[74 FR 56374, Oct. 30, 2009, as amended at 75 FR 79140, Dec. 17, 2010]

**Applicable. FHMRL facility includes two Engines E1 and E2 existing sources categories as defined.**

Subpart HH—Municipal Solid Waste Landfills

#### **§98.340 Definition of the [MSW landfills] source category.**

(a) This source category applies to municipal solid waste **(MSW) landfills that accepted waste on or after January 1, 1980, unless** all three of the following conditions **apply**.

(1) The MSW landfill did not receive waste on or after January 1, 2013.

(2) The MSW landfill had CH<sub>4</sub> generation as determined using Equation HH-5 and, if applicable, Equation HH-7 of this subpart of less than 1,190 metric tons of CH<sub>4</sub> in the 2013 reporting year.

(3) The owner or operator of the MSW landfill was not required to submit an annual report under any requirement of this part in any reporting year prior to 2013.

**Not Applicable, i.e., none of the three listed conditions apply for (a)(1) to (3).**

(b) This source category does not include Resource Conservation and Recovery Act (RCRA) Subtitle C or Toxic Substances Control Act (TSCA) hazardous waste landfills, construction and demolition waste landfills, or industrial waste landfills.

**None of these landfill types apply to FHMRL.**

(c) This source category consists of the following sources at municipal solid waste (MSW) landfills: Landfills, landfill gas collection systems, and landfill gas destruction devices (including flares).

[74 FR 56374, Oct. 30, 2009, as amended at 75 FR 66470, Oct. 28, 2010; 78 FR 71968, Nov. 29, 2013]

█ Applicable. FHMRL is an existing permitted T1 source. FHMRL has an LFG collection system and flare that are installed at the convenience of the owner. Engines E1 and E2 are installed to produce electric power – they are not LFG (or LFG component) destruction devices.

## **4.2 State of Idaho Requirements**

### **4.2.1 IDAPA 58.01.01.123 CERTIFICATION OF DOCUMENTS**

All documents, including but not limited to, application forms for permits to construct, application forms for operating permits, progress reports, records, monitoring data, supporting information, requests for confidential treatment, testing reports or compliance certifications submitted to the Department 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 are true, accurate, and complete.

**Applicable. This Application is certified in accordance with this subpart. See, e.g., Section 0.4.**

### **4.2.2 IDAPA 58.01.01.200 et. Seq. PROCEDURES AND REQUIREMENTS FOR PERMITS TO CONSTRUCT**

The purposes of Sections 200 through 228 is to establish uniform procedures and requirements for the issuance of "Permits to Construct." As used throughout Sections 200 through 228 and 578 through 581, **major facility** shall be defined as **major stationary source in 40 CFR 52.21(b)** and 40 CFR 51.165, incorporated by reference into these rules at Section 107, and major modification shall be defined as in 40 CFR 52.21(b) and 40 CFR 51.165, incorporated by reference into these rules at Section 107. These CFR sections have been codified in the electronic CFR which is available at [www.ecfr.gov](http://www.ecfr.gov). (3-25-16)

**Applicable. FHMRL became a Title V major source after the startup of Engine E2 with respect to TAPs [formaldehyde], but will still remain a minor facility with respect to 40 CFR 52.21(b) [Prevention of Significant Deterioration (PSD)] regarding facility-wide emissions and changes in PTE. No PSD permitting is associated with this PTC modification.**

#### **201. PERMIT TO CONSTRUCT REQUIRED**

No owner or operator may commence construction or modification of any stationary source, facility, major facility, or major modification without first obtaining a permit to construct from the Department which satisfies the requirements of Sections 200 through 228 unless the source is exempted in any of Sections 220 through 223, or the owner or operator complies with Section 213 and obtains the required permit to construct, or the owner or operator complies with Sections 175 through 181, or the source operates in accordance with all of the applicable provisions of a permit by rule. (4-11-06)

**Applicable. This request is to modify the Permit to Construct, which would result in an increase in NO<sub>2</sub>, CO, SO<sub>2</sub>, VOC, and TAPs (formaldehyde) for Engines E1 & E2 and SO<sub>2</sub> for both the Engines E1 & E2 and Flare 1. This permitting action is being processed in accordance with the procedures for PTCs in section IDAPA 58.01.01.200 et seq.**

#### **202. APPLICATION PROCEDURES.**

Application for a permit to construct must be made using forms furnished by the Department, or by other means prescribed by the Department. The application shall be certified by the responsible official in accordance with Section 123 and shall be accompanied by all information necessary to perform any analysis or make any determination required under Sections 200 through 228. (7-1-02)

**01. Required Information.** Depending upon the proposed size and location of the new or modified stationary source or facility, the application for a permit to construct shall include all of the information required by one or more of the following provisions:(5-1-94)

- a. For any new or modified stationary source or facility: (5-1-94)

- i. Site information, plans, descriptions, specifications, and drawings showing the design of the stationary source, facility, or modification, the nature and amount of emissions (including secondary emissions), and the manner in which it will be operated and controlled. (5-1-94)
- ii. A schedule for construction of the stationary source, facility, or modification. (5-1-94)

**Not Applicable. The existing equipment will not undergo a physical change or change in the method of operation associated with this PTC permit modification.**

**b** For any new major facility or major modification in a **nonattainment area** which would be major for the nonattainment regulated air pollutant(s): (4-5-00)

- i. A description of the system of continuous emission control proposed for the new major facility or major modification, emission estimates, and other information as necessary to determine that the lowest achievable emission rate would be applied. (5-1-94)
- ii. A description of the emission offsets proposed for the new major facility or major modification, including information on the stationary sources, mobile sources, or facilities providing the offsets, emission estimates, and other information necessary to determine that a net air quality benefit would result. (4-5-00)
- iii. Certification that all other facilities in Idaho, owned or operated by (or under common ownership of) the proposed new major facility or major modification, are in compliance with all local, state or federal requirements or are on a schedule for compliance with such. (5-1-94)
- iv. An analysis of alternative sites, sizes, production processes, and environmental control techniques which demonstrates that the benefits of the proposed major facility or major modification significantly outweigh the environmental and social costs imposed as a result of its location, construction, or modification. (5-1-94)
- v. An analysis of the impairment to visibility of any federal Class I area, Class I area designated by the Department, or integral vista of any mandatory federal Class I area that the new major facility or major modification would impact (including the monitoring of visibility in any Class I area near the new major facility or major modification, if requested by the Department). (4-6-05)

**Not Applicable. FHML is in an attainment or unclassifiable area.**

- c. For any new major facility or major modification in an attainment or unclassifiable area for any regulated air pollutant. (4-6-05)
  - i. A description of the system of continuous emission control proposed for the new major facility or major modification, emission estimates, and other information as necessary to determine that the best available control technology would be applied. (5-1-94)
  - ii. An analysis of the effect on air quality by the new major facility or major modification, including meteorological and topographical data necessary to estimate such effects. (5-1-94)
  - iii. An analysis of the effect on air quality projected for the area as a result of general commercial, residential, industrial, and other growth associated with the new major facility or major modification. (5-1-94)
  - iv. A description of the nature, extent, and air quality effects of any or all general commercial, residential, industrial, and other growth which has occurred since August 7, 1977, in the area the new major facility or major modification would affect. (5-1-94)
  - v. An analysis of the impairment to visibility, soils, and vegetation that would occur as a result of the new major facility or major modification and general commercial, residential, industrial, and other growth associated with establishment of the new major facility or major modification. The owner or operator need not provide an analysis of the impact on vegetation or soils having no significant commercial or recreational value. (5-1-94)
  - vi. An analysis of the impairment to visibility of any federal Class I area, Class I area designated by the Department, or integral vista of any mandatory federal Class I area that the new major facility or major modification would affect. (5-1-94)

vii. An analysis of the existing ambient air quality in the area that the new major facility or major modification would affect for each regulated air pollutant that a new major facility would emit in significant amounts or for which a major modification would result in a significant net emissions increase. (4-5-00)

viii. Ambient analyses as specified in Subsections 202.01c.vii., 202.01c.ix., 202.01c.x., and 202.01c.xii., may not be required if the projected increases in ambient concentrations or existing ambient concentrations of a particular regulated air pollutant in any area that the new major facility or major modification would affect are less than the amounts listed under 40 CFR 52.21(i)(5)(i), or the regulated air pollutant is not listed therein. (4-11-15)

ix. For any regulated air pollutant which has an ambient air quality standard, the analysis shall include continuous air monitoring data, gathered over the year preceding the submittal of the application, unless the Department determines that a complete and adequate analysis can be accomplished with monitoring data gathered over a period shorter than one (1) year, but not less than four (4) months, which is adequate for determining whether the emissions of that regulated air pollutant would cause or contribute to a violation of the ambient air quality standard or any prevention of significant deterioration (PSD) increment. (4-5-00)

x. For any regulated air pollutant which does not have an ambient air quality standard, the analysis shall contain such air quality monitoring data that the Department determines is necessary to assess ambient air quality for that air pollutant in any area that the emissions of that air pollutant would affect. (4-5-00)

xi. If requested by the Department, monitoring of visibility in any Class I area the proposed new major facility or major modification would affect. (5-1-94)

xii. Operation of monitoring stations shall meet the requirements of Appendix B to 40 CFR Part 58 or such other requirements as extensive as those set forth in Appendix B as may be approved by the Department. (5-1-94)

**Not Applicable. FHMRL's criteria pollutant emissions by pollutant from the facility are below the 250 tpy PSD threshold. Likewise, the facility is not a major source for CO<sub>2</sub>e because it is an existing source that has not exceeded the GHG major source threshold of 100,000 tpy, nor has it made a change that would increase GHG emissions by 75,000 tpy. Therefore, in accordance with 40 CFR 52.21 (a)(2), PSD requirements are not applicable to this permitting action.**

**02. Estimates of Ambient Concentrations.** All estimates of ambient concentrations shall be based on the applicable air quality models, data bases, and other requirements specified in 40 CFR 51, Appendix W (Guideline on Air Quality Models). (4-5-00)

a. Where an air quality model specified in the "Guideline on Air Quality Models," is inappropriate, the model may be modified or another model substituted, subject to written approval of the Administrator of the U.S. Environmental Protection Agency and public comment pursuant to Subsection 209.01.c.; provided that modifications and substitutions of models used for toxic air pollutants will be reviewed by the Department. (4-5-00)

b. Methods like those outlined in the U.S. Environmental Protection Agency's "Interim Procedures for Evaluating Air Quality Models (Revised)" (September 1984) should be used to determine the comparability of air quality models. (5-1-94)

**Applicable.**

**03. Additional Information.** Any additional information, plans, specifications, evidence or documents that the Department may require to make the determinations required under Sections 200 through 225 shall be furnished upon request.

**Applicable. This permitting action is being processed in accordance with the procedures for PTCs in section IDAPA 58.01.01.200 et seq.**

### 203. PERMIT REQUIREMENTS FOR NEW AND MODIFIED STATIONARY SOURCES.

No permit to construct shall be granted for a new or modified stationary source unless the applicant shows to the satisfaction of the Department all of the following: (5-1-94)

**01. Emission Standards.** The stationary source or modification would comply with all applicable local, state or federal emission standards. (5-1-94)

**02. NAAQS.** The stationary source or modification would not cause or significantly contribute to a violation of any ambient air quality standard. (5-1-94)

**03. Toxic Air Pollutants.** Using the methods provided in Section 210, the emissions of toxic air pollutants from the stationary source or modification would not injure or unreasonably affect human or animal life or vegetation as required by Section 161. Compliance with all applicable toxic air pollutant carcinogenic increments and toxic air pollutant non-carcinogenic increments will also demonstrate preconstruction compliance with Section 161 with regards to the pollutants listed in Sections 585 and 586. (6-30-95)

**Applicable.** This permitting action is being processed in accordance with the procedures for PTCs in section IDAPA 58.01.01.200 et seq.

### 204. PERMIT REQUIREMENTS FOR NEW MAJOR FACILITIES OR MAJOR MODIFICATIONS IN NONATTAINMENT AREAS.

**Not Applicable – FHMRL is not in a Non-Attainment area for any pollutant.**

### 205. PERMIT REQUIREMENTS FOR NEW MAJOR FACILITIES OR MAJOR MODIFICATIONS IN ATTAINMENT OR UNCLASSIFIABLE AREAS

The prevention of significant deterioration (PSD) program is a construction permitting program for new major facilities and major modifications to existing major facilities located in areas in attainment or in areas that are unclassifiable for any criteria air pollutant. Section 202 contains application requirements and Section 209 contains processing requirements for PSD permit actions. The intent of Section 205 is to incorporate the federal PSD rule requirements. (4-6-05)

**01. Incorporated Federal Program Requirements.** Requirements contained in the following subparts of 40 CFR 52.21 are incorporated by reference into these rules at Section 107. These CFR sections have been codified in the electronic CFR which is available at [www.ecfr.gov](http://www.ecfr.gov).

40 CFR Reference	40 CFR Reference Title
40 CFR 52.21(a)(2)	Applicability Procedures
40 CFR 52.21(b)	Definitions
40 CFR 52.21(i)	Review of Major Stationary Sources and Major Modifications - Source Applicability and Exempting
40 CFR 52.21(j)	Control Technology Review
40 CFR 52.21(k)	Source Impact Analysis
40 CFR 52.21(r)	Source Obligation
40 CFR 52.21(v)	Innovative Control Technology
40 CFR 52.21(w)	Permit Rescission
40 CFR 52.21(aa)	Actual PALS

**02. Effect on Visibility.** The applicant must demonstrate that the effect on visibility of any federal Class I area, Class I area designated by the Department, or integral vista of a mandatory Class I Federal Area,

by the new major facility or major modification, is consistent with making reasonable progress toward the national visibility goal referred to in 40 CFR 51.300(a). The Department may take into account the costs of compliance, the time necessary for compliance, the energy and non-air quality environmental impacts of compliance and the useful life of the source. Any integral vista which the Federal Land Manager has not identified at least six (6) months prior to the submittal of a complete application, or which the Department determines was not identified in accordance with the criteria adopted pursuant to 40 CFR 51.304(a), may be exempted from this requirement by the Department. (3-30-07)

**03. Exception to Incorporation by Reference of 40 CFR 52.21.** Every use of the word

a. Administrator in 40 CFR 52.21 means the Department except for the following: (4-6-05)

b. In 40 CFR 52.21(l)(2), air quality models, Administrator means the EPA Administrator. (4-6-05)

c. In 40 CFR 52.21(b)(43), permit program approved by the Administrator, Administrator means the EPA Administrator. (4-6-05)

d. In 40 CFR 52.21(b)(48)(ii)(c), MACT standard that is proposed or promulgated by the Administrator, Administrator means the EPA Administrator. (4-6-05)

e. In 40 CFR 52.21(b)(50)(i), regulated NSR pollutant as defined by Administrator, Administrator means the EPA Administrator. (4-6-05)

**04. Non-Major Requirements.** If the proposed action meets the requirements of an exemption or exclusion under the provisions of 40 CFR 52.21 incorporated in Section 205, the nonmajor facility or stationary source permitting requirements of Sections 200 through 228 apply, including the exemptions in Sections 220 through 223. (4-6-05)

**DEQ Action -- Does not Apply to FHMRL is in an Attainment area for all regulated pollutants. FHMRL became a Major facility for TAPs upon start-up of Engine E2. The facility is not a major stationary source as defined in 40 CFR 52.21 (b)(1), nor is it undergoing any physical change at a stationary source not otherwise qualifying under paragraph 40 CFR 52.21(b)(1) as a major stationary source that would constitute a major stationary source by itself as defined in 40 CFR 52. Therefore, in accordance with 40 CFR 52.21 (a)(2), PSD requirements are not applicable to this permitting action.**

#### 206. OPTIONAL OFFSETS FOR PERMITS TO CONSTRUCT

**Not Applicable. The applicant does not plan to propose any emissions offsets in the current application.**

#### 207. REQUIREMENTS FOR EMISSION REDUCTION CREDIT.

**Not Applicable. The applicant does not plan to propose any Emission Reduction Credits in the current application.**

#### 208. DEMONSTRATION OF NET AIR QUALITY BENEFIT.

**Not Applicable – Applicant does not plan to propose any emissions trading in the current application.**

#### 209. PROCEDURE FOR ISSUING PERMITS.

**Applicable to the applicant, as noted in subparts:**

**01. General Procedures.** General procedures for permits to construct. (5-1-94)

- a. Within thirty (30) days after receipt of the application for a permit to construct, the Department shall determine whether the application is complete or whether more information must be submitted and shall notify the applicant of its findings in writing. (5-1-94)
- b. Within sixty (60) days after the application is determined to be complete the Department shall: (5-1-94)
- i. Upon written request of the applicant, provide a draft permit for applicant review. Agency action on the permit under this Section may be delayed if deemed necessary to respond to applicant comments. (4-5-00)
  - ii. Notify the applicant in writing of the approval, conditional approval, or denial of the application if an opportunity for public comment is not required pursuant to Subsection 209.01.c. The Department shall set forth reasons for any denial; or (5-1-94)
  - iii. Issue a proposed approval, proposed conditional approval, or proposed denial. (5-1-94)
- c. **An opportunity for public comment will be provided on all applications requiring a permit to construct.** Public comment shall be provided on an application for any new major facility or major modification, any new facility or modification which would affect any Class I area, any application which uses fluid modeling or a field study to establish a good engineering practice stack height pursuant to Sections 510 through 516, any application which uses an interpollutant trade pursuant to Subsection 210.17, any application which the Director determines an opportunity for public comment should be provided, and any application upon which the applicant so requests. (5-3-03)
- i. The Department's proposed action, together with the information submitted by the applicant and the Department's analysis of the information, shall be made available to the public in at least one (1) location in the region in which the stationary source or facility is to be located. (5-1-94)
  - ii. The availability of such materials shall be made known by notice published in a newspaper of general circulation in the county(ies) in which the stationary source or facility is to be located. (5-1-94)
  - iii. A copy of such notice shall be sent to the applicant and to appropriate federal, state and local agencies. (5-1-94)
  - iv. There shall be a thirty (30) day period after initial publication for comment on the Department's proposed action, such comment to be made in writing to the Department. (5-1-94)
  - v. After consideration of comments and any additional information submitted during the comment period, and within forty-five (45) days after initial publication of the notice, or notice of public hearing if one is requested under Subsections 209.02.b.iv. or 209.02.a.ii., unless the Director deems that additional time is required to evaluate comments and information received, the Department shall notify the applicant in writing of approval, conditional approval, or denial of the permit. The Department shall set forth the reasons for any denial. (5-1-94)
  - vi. All comments and additional information received during the comment period, together with the Department's final determination, shall be made available to the public at the same location as the preliminary determination. (5-1-94)
- d. A copy of each permit will be sent to the U.S. Environmental Protection Agency. (5-1-94)

**DEQ actions**

**02. Additional Procedures for Specified Sources.** (5-1-94)

- a. For any **new major facility** or major modification **in an attainment** or unclassifiable **area for any regulated air pollutant.** (4-6-05)
- i. The public notice issued pursuant to Subsection 209.01.c.ii. shall indicate the degree of increment consumption that is expected from the new major facility or major modification; and (5-1-94)
  - ii. The public notice issued pursuant to Subsection 209.01.c.ii. shall indicate the opportunity for a public hearing for interested persons to appear and submit written or oral comments on the air quality effects of the new major facility or major modification, alternatives to it, the control technology required, and other appropriate considerations. All requests for public hearings during a comment period with an opportunity

for a hearing must be requested in writing by interested persons within fourteen (14) days of the publication of the legal notice of the proposed permit to construct or within fourteen (14) days prior to the end of the comment period, whichever is later. (3-23-98)

b. For any new major facility or major modification which would affect a federal class I area or an integral vista of a mandatory federal Class I area. (5-1-94)

i. If the Department is notified of the intent to apply for a permit to construct, it shall notify the appropriate Federal Land Manager within thirty (30) days; (5-1-94)

ii. A copy of the permit application and all relevant information, including an analysis of the anticipated effects on visibility in any federal Class I area, shall be sent to the Administrator of the U.S. Environmental Protection Agency and the Federal Land Manager within thirty (30) days of receipt of a complete application and at least sixty (60) days prior to any public hearing on the application; (5-1-94)

iii. Notice of every action related to the consideration of the permit shall be sent to the Administrator of the U.S. Environmental Protection Agency; (5-1-94)

iv. The public notice issued pursuant to Subsection 209.01.c.ii. shall indicate the opportunity for a public hearing for interested persons to appear and submit written or oral comments on the air quality effect of the new major facility or major modification, alternatives to it, the control technology required, and other appropriate considerations. All requests for public hearings during a comment period with an opportunity for a hearing must be requested in writing by interested persons within fourteen (14) days of the publication of the legal notice of the proposed permit to construct or within fourteen (14) days prior to the end of the comment period, whichever is later. (3-23-98)

v. The notice of public hearing, if required, shall explain any differences between the Department's preliminary determination and any visibility analysis performed by the Federal Land Manager and provided to the Department within thirty (30) days of the notification pursuant to Subsection 209.02.b.ii. (5-1-94)

vi. Upon a sufficient showing by the Federal Land Manager that a proposed new major facility or major modification will have an adverse impact upon the air quality related values (including visibility) of any federal mandatory Class I area, the Director may deny the application notwithstanding the fact that the concentrations of regulated air pollutants would not exceed the maximum allowable increases for a Class I area. (4-5-00)

#### **DEQ Action -- Does not Apply to FHMRL**

**03. Establishing a Good Engineering Stack Height.** The Department will notify the public of the availability of any fluid model or field study used to establish a good engineering practice stack height and provide an opportunity for a public hearing before issuing a permit or setting an emission standard based thereon. (5-1-94)

#### **DEQ Action -- Does not Apply to FHMRL**

**04. Revisions of Permits to Construct.** The Director may approve a revision of any permit to construct provided the stationary source or facility continues to meet all applicable requirements of Sections 200 through 228. Revised permits will be issued pursuant to procedures for issuing permits (Section 209), except that the requirements of Subsections 209.01.c., 209.02.a., and 209.02.b., shall only apply if the permit revision results in an increase in emissions authorized by the permit or if deemed appropriate by the Director. (7-1-02)

#### **DEQ Action -- Applies to FHMRL**

**05. Permit to Construct Procedures for Tier I Sources.** For Tier I sources that require a permit to construct, the owner or operator shall either: (5-1-94)

#### **Applicable to the applicant, as noted in subparts:**

a. Submit only the information required by Sections 200 through 219 for a permit to construct, in which case: (3-23-98)

i. A permit to construct or denial will be issued in accordance with Subsections 209.01.a. and 209.01.b. (5-1-94)

- ii. The owner or operator may construct the source after permit to construct issuance or in accordance with Subsection 213.02.c. (3-23-98)
- iii. The owner or operator may operate the source after permit to construct issuance so long as it does not violate any terms or conditions of the existing Tier I operating permit and complies with Subsection 380.02. (4-5-00)
- iv. Unless a different time is prescribed by these rules, the applicable requirements contained in a permit to construct will be incorporated into the Tier I operating permit during renewal (Section 369). Where an existing Tier I permit would prohibit such construction or change in operation, the source must obtain a permit revision before commencing operation. Tier I sources required to meet the requirements under Section 112(g) of the Clean Air Act (Section 214), or to have a permit under the preconstruction review program approved into the applicable implementation plan under Part C (Section 205) or Part D (Section 204) of Title I of the Clean Air Act, shall file a complete application to obtain a Tier I permit revision within twelve (12) months after commencing operation. (4-11-06)
- v. The application or minor or significant permit modification request shall be processed in accordance with timelines: Section 361 and Subsections 367.02 through 367.05. (3-19-99)
- vi. The final Tier I operating permit action shall incorporate the relevant terms and conditions from the permit to construct; or (4-5-00)

**Not Applicable -- pending application for Modified PTC will use 05(c)**

- b. Submit all information required by Sections 200 through 219 for a permit to construct and Sections 300 through 386 for a Tier I operating permit, or Tier I operating permit modification, in which case: (4-5-00)
  - i. Completeness of the application shall be determined within thirty (30) days. (5-1-94)
  - ii. The Department shall prepare a proposed permit to construct or denial in accordance with Sections 200 through 219 and a draft Tier I operating permit or Tier I operating permit modification in accordance with Sections 300 through 386 within sixty (60) days. (4-5-00)
  - iii. The Department shall provide for public comment and affected state review in accordance with Sections 209, 364 and 365 on the proposed permit to construct or denial and draft Tier I operating permit or Tier I operating permit modification. (4-5-00)
  - iv. Except as otherwise provided by these rules, the Department shall prepare and issue to the owner or operator a final permit to construct or denial within fifteen (15) days of the close of the public comment period. The owner or operator may construct the source after permit to construct issuance or in accordance with Subsection 213.02.c. (4-5-00)
  - v. The final permit to construct will be sent to EPA, along with the proposed Tier I operating permit or modification. The proposed Tier I operating permit or modification shall be sent for review in accordance with Section 366. (4-5-00)
  - vi. The Tier I operating permit, or Tier I operating permit modification, will be issued in accordance with Section 367. The owner or operator may operate the source after permit to construct issuance so long as it does not violate any terms or conditions of the existing Tier I operating permit and complies with Subsection 380.02; or (4-5-00)

**Not Applicable -- pending application for Modified PTC will use 05(c)**

- c. Submit all information required by Sections 200 through 219 for a permit to construct and Sections 300 through 381 for a Tier I operating permit, or Tier I operating permit modification, in which case: (4-5-00)
  - i. Completeness of the application shall be determined within thirty (30) days. (4-5-00)
  - ii. The Department shall prepare a draft permit to construct or denial in accordance with Sections 200 through 219 and that also meets the requirements of Sections 300 through 381 within sixty (60) days. (4-5-00)
  - iii. The Department shall provide for public comment and affected state review in accordance with Sections 209, 364, and 365 on the draft permit to construct or denial. (4-5-00)

iv. The Department shall prepare and send a proposed permit to construct or denial to EPA for review in accordance with Section 366. EPA review of the proposed permit to construct or denial in accordance with Section 366 can occur concurrently with public comment and affected state review of the draft permit, as provided in Subsection 209.05.c.iii. above, except that if the draft permit or denial is revised in response to public comment or affected state review, the Department must send the revised proposed permit to construct or denial to EPA for review in accordance with Section 366. (4-5-00)

v. Except as otherwise provided by these rules, the Department shall prepare and issue to the owner or operator a final permit to construct or denial in accordance with Section 367. The owner or operator may construct the source after permit to construct issuance or in accordance with Subsection 213.02.c. (4-5-00)

vi. The permittee may, at any time after issuance, request that the permit to construct requirements be incorporated into the Tier I operating permit through an administrative amendment in accordance with Section 381. The owner or operator may operate the source or modification upon submittal of the request for an administrative amendment. (4-5-00)

### **Applicable to a pending application for Modified PTC.**

#### **06. Transfer of Permits to Construct. (4-11-06)**

a. Transfers by Revision. A permit to construct may be transferred to a new owner or operator in accordance with Subsection 209.04. (4-11-06)

b. Automatic Transfers. Any permit to construct, with or without transfer prohibition language, may be automatically transferred if: (4-11-06)

i. The current permittee notifies the Department at least thirty (30) days in advance of the proposed transfer date; (4-11-06)

ii. The notice provides written documentation signed by the current and proposed permittees containing a date for transfer of permit responsibility, designation of the proposed permittee's responsible official, and certification that the proposed permittee has reviewed and intends to operate in accordance with the permit terms and conditions; and (4-11-06)

iii. The Department does not notify the current permittee and the proposed permittee within thirty (30) days of receipt of the notice of the Department's determination that the permit must be revised pursuant to Subsection 209.04. If the Department does not issue such notice, the transfer is effective on the date provided in the notice described in Subsection 209.06.b.ii. (4-11-06)

### **Not Applicable - pending application for Modified PTC will use 05(c)**

#### **210. DEMONSTRATION OF PRECONSTRUCTION COMPLIANCE WITH TOXIC STANDARDS.**

In accordance with Subsection 203.03, the applicant shall demonstrate preconstruction compliance with Section 161 to the satisfaction of the Department. The accuracy, completeness, execution and results of the demonstration are all subject to review and approval by the Department. (6-30-95)

**01. Identification of Toxic Air Pollutants.** The applicant may use process knowledge, raw materials inputs, EPA and Department references and commonly available references approved by EPA or the Department to identify the toxic air pollutants emitted by the stationary source or modification. (6-30-95)

**Applicable. This Application's Emission Inventory is based on manufacturer's emission ratings coupled with AP-42 emission factors for TAPs and PM<sub>10</sub> & PM<sub>2.5</sub>. See AP-42 Table 2.4-1 and 2.4-4, and Section 5 of this application.**

#### **02. Quantification of Emission Rates. (6-30-95)**

a. The applicant may use standard scientific and engineering principles and practices to estimate the emission rate of any toxic air pollutant at the point(s) of emission. (6-30-95)

i. Screening engineering analyses use unrefined conservative data. (6-30-95)

ii. Refined engineering analyses utilize refined and less conservative data including, but not limited to, emission factors requiring detailed input and actual emissions testing at a comparable emissions unit using EPA or Department approved methods. (6-30-95)

**Applicable. This Application uses standard scientific and engineering principles and practices to convert AP-42 emission factors to projected emissions for TAPs. See emission work-up sheets in Section 5.**

b. The uncontrolled emissions rate of a toxic air pollutant from a source or modification is calculated using the maximum capacity of the source or modification under its physical and operational design without the effect of any physical or operational limitations. (6-30-95)

i. Examples of physical and operational design include but are not limited to: the amount of time equipment operates during batch operations and the quantity of raw materials utilized in a batch process. (6-30-95)

ii. Examples of physical or operational limitations include but are not limited to: shortened hours of operation, use of control equipment, and restrictions on production which are less than design capacity. (6-30-95)

c. The controlled emissions rate of a toxic air pollutant from a source or modification is calculated using the maximum capacity of the source or modification under its physical and operational design with the effect of any physical or operational limitation that has been specifically described in a written and certified submission to the Department. (6-30-95)

**Applicable. This Application calculates the PTE using the design capacity of each source and 8760 hr/yr operation. See emission work-up sheets in Section 5.**

d. The T-RACT emissions rate of a toxic air pollutant from a source or modification is calculated using the maximum capacity of the source or modification under its physical and operational design with the effect of: (6-30-95)

i. Any physical or operational limitation other than control equipment that has been specifically described in a written and certified submission to the Department; and (6-30-95)

ii. An emission standard that is T-RACT. (6-30-95)

**Not Applicable. T-RACT is not applicable to this application type, per IDAPA 58.01.01.210.12**

### **03. Quantification of Ambient Concentrations. (6-30-95)**

a. The applicant may use the modeling methods provided in Subsection 202.02 to estimate the ambient concentrations at specified receptor sites for any **toxic air pollutant emitted** from the point(s) of emission. (6-30-95)

i. For **screening modeling**, the models use arbitrary meteorological data and predict maximum one (1) hour concentrations for all specified receptor sites. For toxic air pollutants listed in Section 586, multiply the maximum hourly concentration output from the model by a persistence factor of one hundred twenty-five one-thousandths (0.125) to convert the hourly average to an annual average. For toxic air pollutants listed in Section 585, multiply the maximum hourly concentration output from the model by a persistence factor of four tenths (0.4) to convert the hourly concentration to a twenty-four (24) hour average. (6-30-95)

**Not Applicable. for this PTC. No TAP modeling was performed.**

ii. For **refined modeling**, the models use site specific information. If actual meteorological data is used and the model predicts annual averages for toxic air pollutants listed in Section 586 and twenty-four (24) hour averages for toxic air pollutants listed in Section 585, persistence factors need not be used. (6-30-95)

**Not Applicable. for this PTC. No TAP modeling was performed.**

b. The point of compliance is the receptor site that is estimated to have the highest ambient concentration of the toxic air pollutant of all the receptor sites that are located either at or beyond the facility property boundary or at a point of public access; provided that, if the toxic air pollutant is listed in Section 586, the receptor site is not considered to be at a point of public access if the receptor site is located on or within a road, highway or other transportation corridor transecting the facility. (6-30-95)

**Not Applicable. for this PTC. No TAP modeling was performed.**

c. The uncontrolled ambient concentration of the source or modification is estimated by modeling the uncontrolled emission rate. (6-30-95)

**Not Applicable. for this PTC. No TAP modeling was performed.**

d. The controlled ambient concentration of the source or modification is estimated by modeling the controlled emission rate. (6-30-95)

**Not Applicable. for this PTC. No TAP modeling was performed.**

e. The approved net ambient concentration from a modification for a toxic air pollutant at each receptor is calculated by subtracting the estimated decreases in ambient concentrations for all sources at the facility contributing an approved creditable decrease at the receptor site from the estimated ambient concentration from the modification at the receptor. (6-30-95)

**Not Applicable. for this PTC. No TAP modeling was performed.**

f. The approved offset ambient concentration from a source or modification for a toxic air pollutant at each receptor is calculated by subtracting the estimated decreases in ambient concentrations for all sources contributing an approved offset at the receptor from the estimated ambient concentration for the source or modification at the receptor. (6-30-95)

**Not Applicable. The applicant has not proposed offsets for this permit modification.**

g. The T-RACT ambient concentration of the source or modification is estimated by using refined modeling and the T-RACT emission rate. (6-30-95)

**Not Applicable. T-RACT is not applicable to this application type, per IDAPA 58.01.01.210.12.**

The approved interpollutant ambient concentration from a source or modification for a toxic air pollutant at each receptor is calculated as follows: (6-30-95)

i. Step 1: Calculate the estimated decrease in ambient concentrations for each toxic air pollutant from each source contributing an approved interpollutant trade at the receptor by multiplying the approved interpollutant ratio by the overall decrease in the ambient concentration of the toxic air pollutant at the receptor site. (6-30-95)

ii. Step 2: Calculate the total estimated decrease at the receptor by summing all of the individual estimated decreases calculated in Subsection 210.03.h.i. for that receptor. (6-30-95)

iii. Step 3: Calculate the approved interpollutant ambient concentration by subtracting the total estimated decrease at the receptor from the estimated ambient concentration for the source or modification at the receptor. (6-30-95)

**Not Applicable. The applicant has not proposed an interpollutant trade for this permit modification.**

**04. Preconstruction Compliance Demonstration.** The applicant may use any of the Department approved standard methods described in Subsections 210.05 through 210.08, and may use any applicable specialized method described in Subsections 210.09 through 210.12 to demonstrate preconstruction compliance for each identified **toxic air pollutant**. (6-30-95)

**Applicable.** This permitting action is being processed in accordance with the procedures for PTCs in section IDAPA 58.01.01.200 et seq. The procedures of Subsections 210.05 are applicable to this permit modification.

**05. Uncontrolled Emissions. (6-30-95)**

a. Compare the source's or modification's uncontrolled emissions rate for the toxic air pollutant to the applicable screening emission level listed in Sections 585 or 586. (6-30-95)

**Applicable.** For each source, this comparison is made in the emissions work-up sheets in Section 5. Facility-wide applicability determinations using this comparison is documented on DEQ Form EI.

b. If the source's or modification's uncontrolled emission rate is less than or equal to the applicable screening emission level, no further procedures for demonstrating preconstruction compliance will be required for that toxic air pollutant as part of the application process. (6-30-95)

**Applicable.** For each pollutant, this comparison is made in the emissions work-up sheets in Section 5.

**06. Uncontrolled Ambient Concentration. (6-30-95)**

**Not Applicable.** Subsection 210.05 [uncontrolled emissions] was utilized in this PTC action.

**07. Controlled Emissions. (4-11-19)**

a. Compare the source's or modification's controlled emissions rate for the toxic air pollutant to the applicable screening emission level listed in Sections 585 or 586. (4-11-19)

b. If the source's or modification's controlled emission rate is less than or equal to the applicable screening emission level, no further procedure for demonstrating preconstruction compliance is required for that toxic air pollutant as part of the application process. (4-11-19)

**Not Applicable.** Subsection 210.05 [uncontrolled emissions] was utilized in this PTC action.

**08. Controlled Ambient Concentration. (6-30-95)**

**Not Applicable.** Subsection 210.05 [uncontrolled emissions] was utilized in this PTC action.

**09. Net Emissions. (6-30-95)**

**Not Applicable.** Netting Emissions are not utilized in this PTC action.

**10. Net Ambient Concentration. (6-30-95)**

**Not Applicable.** Net Ambient Concentrations are not utilized in this PTC action.

**11. Toxic Air Pollutant Offset Ambient Concentration. (6-30-95)**

**Not Applicable.** Emissions offsets are not utilized in this PTC action.

**12. T-RACT Ambient Concentration for Carcinogens. (6-30-95)**

**Not Applicable.** T-RACT is not applicable to this application type, per IDAPA 58.01.01.210.12.

**13. T-RACT Determination Processing. (6-30-95)**

**Not Applicable.** T-RACT is not applicable to this application, per IDAPA 58.01.01.210.12.

**14. T-RACT Determination.**

T-RACT shall be determined on a case-by-case basis by the Department as follows:..... (6-30-95)

**Not Applicable.** DEQ action. T-RACT is not applicable to this application type, per IDAPA 58.01.01.210.12.

**15. Short Term Source Factor.**

**Not Applicable.** The FHMRL facility considered sources for this PTC application does not include any Short-Term Sources.

**16. Environmental Remediation Source. (6-30-95)**

**Not Applicable.** The FHMRL facility is not an RCRA or CERCLA remediation source.

**17. Interpollutant Trading Ambient Concentration. (6-30-95)**

**Not Applicable.** This permit modification does not seek to utilize interpollutant trading to demonstrate preconstruction compliance.

**18. Interpollutant Trading Determination Processing. (6-30-95)**

**Not Applicable.** This permit modification does not seek to utilize interpollutant trading to demonstrate preconstruction compliance.

**19. Interpollutant Determination. (6-30-95)**

**Not Applicable.** This permit modification does not seek to utilize interpollutant trading to demonstrate preconstruction compliance.

**20. NSPS and NESHAP Sources.**

No demonstration of compliance with the toxic air pollutant provisions is required to obtain a permit to construct or to demonstrate permit to construct exemption criteria for a new source or for modification of an existing source if the toxic air pollutant is also a listed hazardous air pollutant from: (4-11-19)

a. The equipment or activity covered by a NSPS or NESHAP; or (4-11-19)

b. The source category of equipment or activity addressed by a NSPS or NESHAP even if the equipment or activity is not subject to compliance requirements under the federal rule. (4-11-19)

**Applicable.** The existing sources applicable to this permit modification are regulated by NSPS and NESHAP. FHMRL (source of engine fuel) is regulated by 40 CFR 60.752 et seq. Engines E1 & E2 are regulated by 40 CFR Part 63 Subpart AAAA and ZZZZ. Engines E1 and E2 are regulated by 40 CFR 63 Subpart ZZZZ and by 40 CFR 60 Subpart JJJJ for new spark-ignition internal combustion engines. All of the TAPs that are emitted in amounts exceeding the ELs are EPA-listed hazardous air pollutants, therefore exempt from modeling.

**21. Permit Compliance Demonstration.** Additional procedures and requirements to demonstrate and ensure actual and continuing compliance may be required by the Department in the permit to construct. (5-1-94)

**Applicable.**

**22. Interpretation and Implementation of Other Sections.** Except as specifically provided in other sections of these rules, the provisions of Section 210 are not to be utilized in the interpretation or implementation of any other section of these rules. (6-30-95)

**Applicable.**

**211. CONDITIONS FOR PERMITS TO CONSTRUCT.**

**01. Reasonable Conditions.** The Department may impose any reasonable conditions upon an approval, including conditions requiring the stationary source or facility to be provided with: (5-1-94)

- a. Sampling ports of a size, number, and location as the Department may require; (5-1-94)
- b. Safe access to each port; (5-1-94)
- c. Instrumentation to monitor and record emissions data; (5-1-94)
- d. Instrumentation for ambient monitoring to determine the effect emissions from the stationary source or facility may have, or are having, on the air quality in any area affected by the stationary source or facility; and (5-1-94)
- e. Any other sampling and testing facilities as may be deemed reasonably necessary. (5-1-94)

**02. Cancellation.** The Department may cancel a permit to construct if the construction is not begun within two (2) years from the date of issuance, or if during the construction, work is suspended for one (1) year. (5-1-94)

**03. Notification to The Department.** Any owner or operator of a stationary source or facility subject to a permit to construct shall furnish the Department written notifications as follows: (5-1-94)

- a. A notification of the anticipated date of initial start-up of the stationary source or facility not more than sixty (60) days or less than thirty (30) days prior to such date; and (5-1-94)
- b. A notification of the actual date of initial start-up of the stationary source or facility within fifteen (15) days after such date. (5-1-94)

**04. Performance Test.** Within sixty (60) days after achieving the maximum production rate at which the stationary source or facility will be operated but not later than one hundred eighty (180) days after initial start-up of such stationary source or facility, the owner or operator of such stationary source or facility may be required to conduct a performance test in accordance with methods and under operating conditions approved by the Department and furnish the Department a written report of the results of such performance test. (5-1-94)

- a. Such test shall be at the expense of the owner or operator. (5-1-94)
- b. The Department may monitor such test and may also conduct performance tests. (5-1-94)
- c. The owner or operator of a stationary source or facility shall provide the Department fifteen (15) days prior notice of the performance test to afford the Department the opportunity to have an observer present. (5-1-94)

 **Applicable.** The applicant understands and agrees to section 211 conditions.

## **212. OBLIGATION TO COMPLY.**

**01. Responsibility to Comply with All Requirements.** Receiving a permit to construct shall not relieve any owner or operator of the responsibility to comply with all applicable local, state and federal statutes, rules and regulations. (5-1-94)

**02. Relaxation of Standards or Restrictions.** At such time that a particular facility or modification becomes a major facility or major modification solely by virtue of a relaxation in any enforceable emission standard or restriction on the operating rate, hours of operation or on the type or amount of material combusted, stored or processed, which was used to exempt the facility or modification from certain requirements for a permit to construct, the requirements for new major facilities or major modifications shall apply to the facility or modification as though construction had not yet commenced. (5-1-94)

 **Applicable.** The applicant understands and agrees to section 212 conditions.

## **213. PRE-PERMIT CONSTRUCTION.**

 **Not Applicable.** The applicant does not seek to utilize the pre-construction permitting pathway in this application for Modified PTC.

## 214. DEMONSTRATION OF PRECONSTRUCTION COMPLIANCE FOR NEW AND RECONSTRUCTED MAJOR SOURCES OF HAZARDOUS AIR POLLUTANTS.

**Applicable.**

**01. Permitting Authority.** For purposes of this section, Sections 112(g) and (j) of the Clean Air Act, and 40 CFR Part 63, the permitting authority shall be the Department. (3-19-99)

**02. Definitions.** Unless specifically provided otherwise, the definitions for terms set forth in this section shall be the definitions set forth in Section 112 of the Clean Air Act and 40 CFR Part 63 as incorporated by reference into these rules at Section 107. For purposes of determining if a source is a major source of hazardous air pollutants, the definition of potential to emit at Section 006 of these rules shall apply. (3-19-99)

**03. Compliance with Federal MACT.** All owners or operators of major sources of hazardous air pollutants which are subject to an applicable Maximum Available Control Technology (MACT) standard promulgated by EPA pursuant to Section 112 of the Clean Air Act and 40 CFR Part 63 shall comply with the applicable MACT standard and such owners or operators are not subject to Subsections 214.04 and 214.05. (3-19-99)

**04. Requirement to Obtain Preconstruction MACT Determination from the Director.** No owner or operator may construct or reconstruct a major source of hazardous air pollutants unless such owner or operator has obtained a MACT standard determination from the Director. The Director shall make the MACT standard determination on a case by case basis and in accordance with Section 112(g)(2)(B) of the Clean Air Act and 40 CFR 63.40 through 63.44 as incorporated by reference into these rules at Section 107. (3-19-99)

**Not Applicable, per 214.03**

**05. Development of Mact by the Director After EPA Deadline.** In the event that EPA fails to promulgate a MACT standard for a category or subcategory of major sources of hazardous air pollutants identified by the EPA under the Clean Air Act by the date established under Section 112(e) of the Clean Air Act, the owner or operator of any major source of hazardous air pollutants in such category or subcategory shall submit an application to the Director for a MACT standard determination. The Director shall make the MACT standard determination on a case by case basis and in accordance with Section 112(j) of the Clean Air Act and 40 CFR 63.50 through 63.56 as incorporated by reference into these rules at Section 107. (3-19-99)

**Not Applicable, per 214.03**

## 215. MERCURY EMISSION STANDARD FOR NEW OR MODIFIED SOURCES.

No owner or operator may commence construction or modification of a stationary source or facility that results in an increase in annual potential emissions of mercury of twenty-five (25) pounds or more unless the owner or operator has obtained a permit to construct under Sections 200 through 228 of these rules. The permit to construct application shall include an MBACT analysis for the new or modified source or sources for review and approval by the Department. A determination of applicability under Section 215 shall be based upon the best available information. Fugitive emissions shall not be included in a determination of applicability under Section 215. (4-7-11)

**Not Applicable. The FHMRL's annual potential emissions of mercury are less than twenty-five (25) pounds. See DEQ Form EI.**

**01. Exemptions.** New or modified stationary sources within a source category subject to 40 CFR Part 63 are exempt from the requirements of Section 215. (4-7-11)

**Applicable. Engines E1 and E2 are subject to 40 CFR 63 Subpart AAAA and Subpart ZZZZ.**

**02. Applicability.** Except as provided in Subsection 215.01, Section 215 applies to all new or modified sources for which an application for a permit to construct was submitted to the Department on or after July 1, 2011. (4-7-11)

**Not Applicable, per Subsection 215.01**

## 220. GENERAL EXEMPTION CRITERIA FOR PERMIT TO CONSTRUCT EXEMPTIONS

**Not Applicable.** After the start-up of Engine E2, facility-wide formaldehyde emissions exceed the exemption thresholds in IDAPA 58.01.01.223.

## 221. CATEGORY I EXEMPTION.

**Not Applicable.** After the start-up of Engine E2, facility-wide formaldehyde emissions exceeded the exemption thresholds in IDAPA 58.01.01.223.

## 222. CATEGORY II EXEMPTION.

**Not Applicable.** After the start-up of Engine E2, facility-wide formaldehyde emissions exceeded the exemption thresholds in IDAPA 58.01.01.223.

## 223. EXEMPTION CRITERIA AND REPORTING REQUIREMENTS FOR TOXIC AIR POLLUTANT EMISSIONS.

No permit to construct for toxic air pollutants is required for a source that satisfies any of the exemption criteria below, the recordkeeping requirements at Subsection 220.02, and reporting requirements as follows: (4-5-00)

01. Below Regulatory Concern (BRC) Exemption. The source qualifies for a BRC exemption if the uncontrolled emission rate (refer to Section 210) for all toxic air pollutants emitted by the source is less than or equal to ten percent (10%) of all applicable screening emission levels listed in Sections 585 and 586. (4-5-00)

02. Level I Exemption. To obtain a Level I exemption, the source shall satisfy the following criteria: (4-5-00)

a. The uncontrolled emission rate (refer to Section 210) for all toxic air pollutants shall be less than or equal to all applicable screening emission levels listed in Sections 585 and 586; or (4-5-00)

b. The uncontrolled ambient concentration (refer to Section 210) for all toxic air pollutants at the point of compliance shall be less than or equal to all applicable acceptable ambient concentrations listed in Sections 585 and 586. (4-5-00)

03. Level II Exemption. To obtain a Level II exemption, the maximum capacity of a source to emit a toxic air pollutant under its physical and operational design considering limitations on emissions such as air pollution control equipment, restrictions on hours of operation and restrictions on the type and amount of material combusted, stored or processed at the point of compliance is less than or equal to ten percent (10%) of all applicable screening emission levels listed in Sections 585 and 586. (4-11-19)

04. Annual Report for Toxic Air Pollutant Exemption. The owner or operator of a source claiming a Level I or II exemption shall submit a certified report, on or before May 1 for the previous calendar year, to the Department for each Level I or II exemption determination. The owner or operator is not required to annually submit a certified report for a Level I or II exemption determination previously claimed and reported. The report shall be labeled "Toxic Air Pollutant Exemption Report" and shall state the date construction has or will commence and shall include copies of all exemption determinations completed by the owner or operator for each Level I and II exemption. (4-11-19)

**Not Applicable.** After the start-up of Engine E2, facility-wide formaldehyde emissions exceeded the exemption thresholds in IDAPA 58.01.01.223 (including annual reporting requirements).

**224. PERMIT TO CONSTRUCT APPLICATION FEE.**

Applicable.

**225. PERMIT TO CONSTRUCT PROCESSING FEE.**

Applicable.

**226. PAYMENT OF FEES FOR PERMITS TO CONSTRUCT.**

Applicable.

**227. RECEIPT AND USAGE OF FEES.**

Not Applicable – This is a DEQ Action

**228. APPEALS.**

Applicable, not needed in the present permitting, although Applicant reserves option to use.

**4.2.3 IDAPA 58.01.01.300 et seq. Title V Classification (40 CFR Part 70)**

Applicable. The requirements of IDAPA 58.01.01.301 apply and Applicant chooses to follow IDAPA 58.01.01.209.01(c) for this application for PTC Modification.

**301. Requirement to Obtain Tier I Operating Permit**

Applicable. FHMRL will have an ultimate design capacity of 7.31 Mg with future expansions. Large (i.e., design capacity > 2.5 Mg) MSW Landfills are subject to IDAPA 58.01.01.850, and therefore become a Tier I source in accordance with IDAPA 58.01.01.006.113, and are required to obtain a Title V, Tier I permit. The requirements of IDAPA 58.01.01.301 do apply.

**4.2.4 IDAPA 58.01.01.401 & 577 Tier II Operating Permit**

**401. Tier II Operating Permit**

Not Applicable. The FHMRL application is being submitted for a PTC modification; an optional Tier II operating permit is not being requested. Therefore, the procedures of IDAPA 58.01.01.400-410 are not applicable to this permitting action.

**577. AMBIENT AIR QUALITY STANDARDS FOR FLUORIDES**

Primary and secondary air quality standards are those concentrations in the ambient air which result in a total fluoride content in vegetation used for feed and forage of no more than: (5-1-94)

**01. Annual Standard.** Forty (40) ppm, dry basis -- annual arithmetic mean. (5-1-94)

**02. Bimonthly Standard.** Sixty (60) ppm, dry basis -- monthly concentration for two (2) consecutive months. (5-1-94)

**03. Monthly Standard.** Eighty (80) ppm, dry basis -- monthly concentration never to be exceeded. (5-1-94)

Not Applicable. Total FHMRL facility-wide fluorine emissions are below detection limits (not specified as an LFG constituent), based on the EI supporting DEQ Form EI, a level at

which fluoride content in vegetation used for feed and forage that results from these emissions is several orders of magnitude smaller than the standards of this part.

#### **4.2.5 IDAPA 58.01.01.585 & 586 TOXIC AIR POLLUTANTS**

##### **585. TOXIC AIR POLLUTANTS NON-CARCINOGENIC INCREMENTS**

The screening emissions levels (EL) and acceptable ambient concentrations (AAC) for non-carcinogens are as provided in the following table. The AAC in this section are twenty-four (24) hour averages. (6-30-95)

**Applicable. Projected FHMRL facility-wide impacts of non-carcinogenic TAPs are provided in DEQ Form EI.**

##### **586. TOXIC AIR POLLUTANTS CARCINOGENIC INCREMENTS.**

The screening emissions levels (EL) and acceptable ambient concentrations (AACC) for carcinogens are as provided in the [regulation]. The AACC in [the regulation] are annual averages. (4-11-19)

**Applicable. Projected FHMRL facility-wide impacts of carcinogenic TAPs are provided in DEQ Form EI**

#### **4.2.6 IDAPA 58.01.01.590 NEW SOURCE PERFORMANCE STANDARDS**

The owner or operator of any stationary source shall comply with 40 CFR Part 60 as applicable to the stationary source. The applicable definitions for this Section shall be the definitions set forth in 40 CFR Part 60. (4-5-00)

**Applicable. Existing Engines E1 and E2 at the FHMRL are subject to NSPS Subpart JJJJ (40 CFR 60.4230 et seq.) requirements. See Section 7.**

#### **4.2.7 IDAPA 58.01.01.591 NATIONAL EMISSION STANDARDS FOR HAZARDOUS AIR POLLUTANTS.**

**Applicable per 40 CFR 63.6590(c)(I), Engines #1 and #2 meet the requirements of Subpart ZZZZ by meeting the requirements of 40 CFR 60 Subpart JJJJ and no further demonstration of compliance with Subpart ZZZZ requirements is needed.**

#### **4.2.8 IDAPA 58.01.01.625 VISIBLE EMISSIONS**

A person shall not discharge any air pollutant into the atmosphere from any point of emission for a period or periods aggregating more than three (3) minutes in any sixty (60) minute period which is greater than twenty percent (20%) opacity as determined by this section. (4-5-00)

**Applicable. The sources of PM-10 emissions at this facility are subject to the State of Idaho visible emissions standard of 20% opacity. Opacity requirements are included in the PTC that is active for this facility.**

**01. Exemptions.** The provisions of this section shall not apply to: (4-5-00)

- a. Kraft Process Lime Kilns, if operating prior to January 24, 1969; or (5-1-94)
- b. Carbon Monoxide Flare Pits on Elemental Phosphorous Furnaces, if operating prior to January 24, 1969; or (5-1-94)
- c. Liquid Phosphorous Loading Operations, if operating prior to January 24, 1969; or (5-1-94)
- d. Wigwam Burners; or (5-1-94) e. Kraft Process Recovery Furnaces. (5-1-94)
- f. Calcining Operations Utilizing an Electrostatic Precipitator to Control Emissions, if operating prior to January 24, 1969. (5-1-94)

**Not Applicable. The FHMRL is not an industrial facility described by this part.**

**02. Standards for Exempted Sources.** Except as provided in Section 626, for sources exempted from the provisions of this section, a person shall not discharge into the atmosphere from any point of emission, for any air pollutant for a period or periods aggregating more than three (3) minutes in any sixty (60) minute period which is greater than forty percent (40%) opacity as determined by this section. (4-5-00)

**Not Applicable.** The FHMRL is not an industrial facility described by this part.

**03. Exception.** The provisions of this section shall not apply when the presence of uncombined water, nitrogen oxides and/or chlorine gas are the only reason(s) for the failure of the emission to comply with the requirements of this rule. (4-5-00)

**Not Applicable.** The FHMRL does not anticipate the presence of uncombined water in facility plumes.

**04. Test Methods and Procedures.** The appropriate test method under this section shall be EPA Method 9 (contained in 40 CFR Part 60) with the method of calculating opacity exceedances altered as follows: (4-5-00)

**Applicable.** Opacity test requirements are included in the PTCs that support this facility.

a. Opacity evaluations shall be conducted using forms available from the Department or similar forms approved by the Department. (4-5-00)

b. Opacity shall be determined by counting the number of readings in excess of the percent opacity limitation, dividing this number by four (4) (each reading is deemed to represent fifteen (15) seconds) to find the

#### 4.2.9 IDAPA 58.01.01.650 & 651

##### 650. RULES FOR CONTROL OF FUGITIVE DUST

The purpose of Sections 650 through 652 is to require that all reasonable precautions be taken to prevent the generation of fugitive dust. (4-11-15) **Applicable.** Compliance with this requirement is demonstrated by the implementation of the methods set forth at IDAPA 58.01.01.651 to be addressed in the PTC.

##### 651. GENERAL RULES.

All reasonable precautions shall be taken to prevent particulate matter from becoming airborne. In determining what is reasonable, consideration will be given to factors such as the proximity of dust emitting operations to human habitations and/or activities, the proximity to mandatory Class I Federal Areas and atmospheric conditions which might affect the movement of particulate matter. Some of the reasonable precautions may include, but are not limited to, the following: (3-30-07)

**01. Use of Water or Chemicals.** Use, where practical, of water or chemicals for control of dust in the demolition of existing buildings or structures, construction operations, the grading of roads, or the clearing of land. (5-1-94)

**02. Application of Dust Suppressants.** Application, where practical, of asphalt, oil, water or suitable chemicals to, or covering of dirt roads, material stockpiles, and other surfaces which can create dust. (5-1-94)

**03. Use of Control Equipment.** Installation and use, where practical, of hoods, fans and fabric filters or equivalent systems to enclose and vent the handling of dusty materials. Adequate containment methods should be employed during sandblasting or other operations. (5-1-94)

**04. Covering of Trucks.** Covering, when practical, open bodied trucks transporting materials likely to give rise to airborne dusts. (5-1-94)

**05. Paving.** Paving of roadways and their maintenance in a clean condition, where practical. (5-1-94)

**06. Removal of Materials.** Prompt removal of earth or other stored material from streets, where practical.

**Applicable.** Fugitive dust requirements are included in the PTC that is active for this facility. The working areas on the facility addressed in this permit are not paved. Access roads to all landfill cells are paved to the cell boundary.

#### 4.2.10 IDAPA 58.01.01.675-681 FUEL BURNING EQUIPMENT

##### 675. FUEL BURNING EQUIPMENT -- PARTICULATE MATTER

The purpose of Sections 675 through 681 is to establish particulate matter emission standards for fuel burning equipment. (4-5-00)

**Not Applicable** Existing permitted FHMRL sources do not heat air or steam as a heat-transfer intermediary, therefore do not qualify as Fuel-Burning Equipment subject to the Sections 675 through 681.

#### 4.2.11 IDAPA 58.01.01.702 & 773 PARTICULATE MATTER - PROCESS

##### 702. PARTICULATE MATTER- EXISTING EQUIPMENT PROCESS WEIGHT LIMITATIONS

The provisions of Section 702 shall become effective on January 1, 1981. (4-5-00)

**Not Applicable.** FHMRL existing sources F1 and E1 and E2 are not process sources (i.e., no product is processed in the operation of the engines or flare).

**01. General Restrictions.** No person shall emit into the atmosphere from any process or process equipment operating prior to October 1, 1979, particulate matter in excess of the amount shown by the following equations, where E is the allowable emission from the entire source in pounds per hour, and PW is the process weight in pounds per hour: (4-5-00)

a. If PW is less than 17,000 pounds per hour,  $E = 0.045 (PW) 0.60$  (4-5-00)

b. If PW is equal to or greater than 17,000 pounds per hour,  $E = 1.12 (PW)0.27$ . (4-5-00)

**02. Exemptions.** The provisions of Section 702 shall not apply to: (4-5-00)

a. Fuel burning equipment; or (5-1-94)

b. Equipment used exclusively to dehydrate sugar beet pulp or alfalfa. (5-1-94) **03. Emission Standards -- Table.** The following table illustrates the emission standards set forth in Section 702.

##### 703. PARTICULATE MATTER - OTHER PROCESSES

**01. Other Processes.** No person with processes exempt under Subsection 702.02.b. shall emit particulate matter to the atmosphere from any process or process equipment in excess of the amount shown in the following equations, where E is the total rate of emission from all emission points from the source in pounds per hour and P is the process weight rate in pounds per hour. (4-5-00)

a. If P is less than sixty thousand (60,000) pounds per hour,  $E = 0.02518(P)^{0.67}$  (4-5-00)

b. If P is greater than or equal to sixty thousand (60,000) pounds per hour,  $E = 23.84(P)^{0.11} - 40$  (4-5-00)

**Not Applicable.** The FHMRL is not an alfalfa or sugar beet pulp processing facility addressed by Section 702.02(b)

#### 4.2.12 IDAPA 58.01.01.775 ODOR CONTROL

No person shall allow emissions of odorous gases, liquids, solids into the atmosphere.

**Applicable.** Compliance with this requirement is demonstrated by responding appropriately to any odor complaints per existing PTCs for the facility.

## 4.2.13 IDAPA 58.01.01.859 & 860 STDS & EMISSIONS GUIDELINES – MSW LANDFILLS

### 859. STANDARDS OF PERFORMANCE FOR MUNICIPAL SOLID WASTE LANDFILLS THAT COMMENCED CONSTRUCTION, RECONSTRUCTION OR MODIFICATION ON OR AFTER MAY 30, 1991.

**01. Applicability.** All owners or operators of each small or large municipal solid waste landfills in **any one** (1) of the following categories are subject to Section 859: (4-5-00)

**a. Landfills constructed after May 30, 1991; (4-5-00)**

**Applicable.**

**b. Existing landfills with modifications after May 30, 1991; or (4-5-00)**

**c. Landfills that closed after November 8, 1987 with modifications after May 30, 1991. (4-5-00)**

**02. Definitions.** Unless specifically provided otherwise immediately below, the definitions for all terms set forth in Section 859 shall be the definitions set forth in 40 CFR Part 60. The following definitions apply to this Section: (4-5-00)

**a. “Closed municipal solid waste landfill” (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 40 CFR 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. A landfill is considered closed after meeting the criteria of 40 CFR 258.60. (4-5-00)

**b. “Effective date” means July 2, 1999. (4-5-00)**

**c. “Existing municipal solid waste landfill” (existing landfill)** means a municipal solid waste landfill that **began construction, reconstruction or modification before May 30, 1991** and has accepted waste at any time since November 8, 1987 or has additional design capacity available for future waste deposition. (4-5-00)

**d. “Large municipal solid waste landfill” (large landfill)** means a municipal solid waste landfill with a design capacity **greater than or equal to two point five (2.5) million megagrams** or two point five (2.5) million cubic meters. (4-5-00)

**e. “Modification”** means an action that results in 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. (4-5-00)

**f. “Municipal solid waste landfill” (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 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 and 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 (modification). (4-5-00)

**g. “New municipal solid waste landfill” (new landfill)** means a municipal solid waste landfill that began construction, reconstruction or modification or **began accepting waste on or after May 30, 1991.** (4-5-00)

**h. “Small municipal solid waste landfill” (small landfill)** means a municipal solid waste landfill with a design capacity less than two point five (2.5) million megagrams or two point five (2.5) million cubic meters.(4-5-00)

**Applicable.**

**02. General Requirements.** All owners or operators of **landfills subject to Section 859 must comply with 40 CFR Part 60, Subpart WWW,** as amended by 63 Fed. Reg. 32,743-53 (June 16, 1998) and 64 Fed. Reg. 9,257- 62 (February 24, 1999) and incorporated by reference into these rules at Section 107. Where “Administrator” or “EPA” appears in 40 CFR Part 60, “Department” shall be substituted, except in any section of 40 CFR Part 60 for which a federal rule or delegation specifically indicates that authority will not be delegated to the state. (4-5-00)

**Applicable.**

**03. Permitting Requirements.** All owners or operators of landfills subject to Section 859 must comply with Federal Operating Permit Requirements (Title V) as specified in Sections 300 through 399 of these rules: (4-5-00) **Applicable. FHMRL holds an operating permit T1-2018-0007**

- a. All owners or operators of existing large landfills with modifications after May 30, 1991 must submit a complete Federal Operating Permit application by June 1, 2000. (4-5-00)
- b. All owners or operators of existing large landfills with modifications after March 12, 1996 must submit a complete Federal Operating Permit application the earliest of one (1) year from the date EPA approves the Clean Air Act Section 111(d) State Plan for Section 859, or within one (1) year of the modification. (4-5-00)
- c. All owners or operators of new large landfills, which includes newly constructed large landfills after March 12, 1996 and existing small landfills that become large landfills after March 12, 1996 must submit a complete Federal Operating Permit application within one (1) year of becoming subject to this requirement. (4-5-00)
- d. All owners or operators of new and modified existing small landfills that are major sources as defined in 40 CFR Part 60, Subpart WWW, as amended by 63 Fed. Reg. 32,743-53 (June 16, 1998) and 64 Fed. Reg. 9,257-62 (February 24, 1999), must submit a complete Federal Operating Permit application within one (1) year of becoming a major source. (4-5-00)

**05. Reporting Requirements.** All owners or operators of landfills subject to Section 859 must comply with the following: (4-5-00)

- a. All owners or operators of large landfills must: (4-5-00) i. Submit an Initial Design Capacity Report and an Initial Nonmethane Organic Compound Report within thirty (30) days of the effective date of Section 859; and (4-5-00) ii. Submit an annual Nonmethane Organic Compound Report until nonmethane emissions are less than fifty (50) Mg/yr. (4-5-00)

**Applicable. FHMRL is a large landfill. All required reports have been submitted.**

- b. All owners or operators of small landfills of Section 859 must submit an Initial Design Capacity Report and an Initial Nonmethane Organic Compound Report within thirty (30) days of the effective date of Section 859. (4-5-00)
- c. All owners or operators of landfills subject to Section 859 after the effective date of Section 859 must submit an Initial Design Capacity Report and an Initial Nonmethane Organic Compound Report within thirty (30) days of becoming subject to Section 859. (4-5-00)

**860. EMISSION GUIDELINES FOR MUNICIPAL SOLID WASTE LANDFILLS THAT COMMENCED CONSTRUCTION, RECONSTRUCTION OR MODIFICATION BEFORE MAY 30, 1991.**

**01. Applicability.** All owners or operators of any small or large municipal solid waste landfills in the following categories are subject to Section 860: (4-5-00)

- a. Landfills that have accepted waste since November 8, 1987; (4-5-00)

**Applicable.**

- b. Landfills with no modifications after May 30, 1991; or (4-5-00)
- c. Landfills that closed after November 8, 1987 with no modifications after May 30, 1991. (4-5-00)

**02. Definitions.** Unless specifically provided otherwise immediately below, the definitions for all terms set forth in Section 860 shall be the definitions set forth in 40 CFR Part 60. The following definitions apply to Section 860: (4-5-00)

- a. "Closed municipal solid waste landfill" (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 40 CFR 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. A landfill is considered closed after meeting the criteria of 40 CFR 258.60. (4-5-00)

b. "Effective date" means July 2, 1999. (4-5-00)

c. "Existing municipal solid waste landfill" (existing landfill) means a municipal solid waste landfill that began construction, reconstruction or modification before May 30, 1991 and has accepted waste at any time since November 8, 1987 or has additional design capacity available for future waste deposition. (4-5-00)

d. "Large municipal solid waste landfill" (large landfill) means a municipal solid waste landfill with a design capacity greater than or equal to two point five (2.5) million megagrams or two point five (2.5) million cubic meters. (4-5-00)

e. "Modification" means an action that results in 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. (4-5-00)

f. "Municipal solid waste landfill" (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 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 and 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 (modification). (4-5-00)

g. "New municipal solid waste landfill" (new landfill) means a municipal solid waste landfill that began construction, reconstruction or modification or began accepting waste on or after May 30, 1991. (4-5-00)

h. "Small municipal solid waste landfill" (small landfill) means a municipal solid waste landfill with a design capacity less than two point five (2.5) million megagrams or two point five (2.5) million cubic meters. (4-5-00)

### Applicable

**03. General Requirements.** All owners or operators of landfills subject to Section 860 must comply with, 40 CFR Section 60.30c through 60.36c and 40 CFR Section 60.751 through 60.759 as amended by 63 Fed. Reg. 32,743-53 (June 16, 1998) and 64 Fed. Reg. 9,257-62 (February 24, 1999) and incorporated by reference into these rules at Section 107. Where "Administrator" or "EPA" appears in 40 CFR Part 60, "Department" shall be substituted, except in any section of 40 CFR Part 60 for which a federal rule or delegation specifically indicates that authority will not be delegated to the state. (4-5-00)

### Applicable.

**04. Permitting Requirements.** All owners or operators of landfills subject to Section 860 must comply with Federal Operating Permit Requirements (Title V) as specified in Sections 300 through 399 of these rules: (4-5-00)

### Applicable.

a. All owners or operators of existing large landfills must submit a complete Federal Operating Permit application one (1) year after EPA approves the Clean Air Act Section 111(d) State Plan associated with Section 860. (4-5-00)

b. All owners or operators of existing small landfills that are major sources must submit a complete Federal Operating Permit application within one (1) year of becoming a major source. (4-5-00)

**05. Reporting Requirements.** All owners or operators of landfills subject to Section 860 shall comply with the following: (4-5-00)

### Applicable. Required reports have been submitted.

a. All owners or operators of large landfills must: (4-5-00)

i. Submit an Initial Design Capacity Report and an Initial Nonmethane Organic Compound Report within ninety (90) days of the effective date of Section 860 and; (4-5-00)

ii. Submit an annual Nonmethane Organic Compound Report until nonmethane emissions are less than fifty (50) Mg/yr. (4-5-00)

b. All owners or operators of small landfills must submit an Initial Design Capacity Report and an Initial Nonmethane Organic Compound Report within ninety (90) days of the effective date of Section 860. (4-5-00)

**06. Compliance Schedules and Increments of Progress.** All owners or operators of landfills subject to Section 860 that have a nonmethane organic compound emission rate fifty (50) Mg/yr or greater as specified in 40 CFR Section 60.752(b)(2) shall comply with the following schedule: (4-5-00)

**Not Applicable.** FHMRL NMOC emissions are currently less than 50 Mg/yr. estimated to pass that threshold at approximately sometime beyond 2033.

a. The owner or operator of an existing large landfill must submit their first Annual Emission Rate Report with the design capacity report no later than July 31, 2000. (4-5-00)

b. The owner or operator of an existing landfill shall submit a collection and control system design plan within one (1) year of the date of the first Annual Emission Rate Report showing that the nonmethane organic compound emission rate is fifty (50) Mg/yr or greater as specified in 40 CFR Section 60.752(b)(2). (4-5-00)

c. The owner or operator of an existing landfill shall award contracts for construction of collection and control systems or orders for purchase of components no later than January 31, 2002. (4-5-00)

d. The owner or operator of an existing landfill shall initiate on-site construction or installation of the collection and control systems no later than April 30, 2002. (4-5-00)

e. The owner or operator of an existing landfill shall complete, no later than September 30, 2002, on-site construction or installation of collection and control systems capable of meeting the requirements of Section 860. (4-5-00)

f. The owner or operator of an existing landfill shall comply with Section 860 no later than September 30, 2002. (4-5-00)

**07. Compliance Schedules and Increments of Progress for Municipal Solid Waste Landfills That Have Nonmethane Organic Compound Emission Rates Less Than 50 Mg/yr.** All owners or operators of landfills subject to Section 860 that have nonmethane organic compound emission rates less than fifty (50) Mg/yr on or after November 19, 1999 shall install collection and control systems within thirty (30) months after the date the first annual nonmethane organic compound emission rate equals or exceeds fifty (50) Mg/yr as specified in 40 CFR Section 60.36c(b). (4-5-00)

**Applicable.** FHMRL NMOC emissions are currently less than 50 Mg/yr. estimated to pass that threshold sometime beyond 2033.

861. -- 999. (RESERVED)

■ end Exhibit D

## APPENDIX E- PROCESSING FEE

## PTC Processing Fee Calculation Worksheet

**Instructions:**

Fill in the following information and answer the following questions with a Y or N. Enter the emissions increases and decreases for each pollutant in the table.

**Company:** Fort Hall Mine Road Landfill  
**Address:** 1500 N. Fort Hall Mine Rd  
**City:** Pocatello  
**State:** ID  
**Zip Code:** 83204  
**Facility Contact:** Brett Grayson  
**Title:** Public Works Director  
**AIRS No.:** 005-00062

**N** Does this facility qualify for a general permit (i.e. concrete batch plant, hot-mix asphalt plant)? Y/N

**Y** Did this permit require engineering analysis? Y/N

**N** Is this a PSD permit Y/N (IDAPA 58.01.01.205.04)

<b>Emissions Inventory</b>			
Pollutant	Annual Emissions Increase (T/yr)	Annual Emissions Reduction (T/yr)	Annual Emissions Change (T/yr)
NO <sub>x</sub>	5.6	0	5.6
SO <sub>2</sub>	8.4	0	8.4
CO	99.3	0	99.3
PM10	0.0	0	0.0
VOC	3.9	0	3.9
<b>Total:</b>	0.0	0	<b>117.3</b>
Fee Due	<b>\$ 7,500.00</b>		

Comments: