

# **Statement of Basis**

**Tier I Operating Permit No. T1-2018.0007**

**Project ID 62512**

**Fort Hall Mine Road Landfill**

**Pocatello, Idaho**

**Facility ID 005-00062**

**Final**

**October 30, 2020**

**Zach Pierce**

**Permit Writer**

A handwritten signature in blue ink, consisting of the letters 'ZP' in a stylized, cursive font.

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

## TABLE OF CONTENTS

<b>1.</b>	<b>ACRONYMS, UNITS, AND CHEMICAL NOMENCLATURE .....</b>	<b>3</b>
<b>2.</b>	<b>INTRODUCTION AND APPLICABILITY.....</b>	<b>5</b>
<b>3.</b>	<b>FACILITY INFORMATION .....</b>	<b>5</b>
<b>4.</b>	<b>APPLICATION SCOPE AND APPLICATION CHRONOLOGY .....</b>	<b>6</b>
<b>5.</b>	<b>EMISSIONS UNITS, PROCESS DESCRIPTION(S), AND EMISSIONS INVENTORY .....</b>	<b>7</b>
<b>6.</b>	<b>REGULATORY REVIEW .....</b>	<b>9</b>
<b>7.</b>	<b>PUBLIC COMMENT .....</b>	<b>11</b>
<b>8.</b>	<b>EPA REVIEW OF PROPOSED PERMIT .....</b>	<b>11</b>

## 1. ACRONYMS, UNITS, AND CHEMICAL NOMENCLATURE

acfm	actual cubic feet per minute
ASTM	American Society for Testing and Materials
BACT	Best Available Control Technology
BMP	best management practices
Btu	British thermal unit
CAA	Clean Air Act
CAM	Compliance Assurance Monitoring
CEMS	continuous emission monitoring systems
cfm	cubic feet per minute
CFR	Code of Federal Regulations
CI	compression ignition
CMS	continuous monitoring systems
CO	carbon monoxide
CO <sub>2</sub>	carbon dioxide
CO <sub>2</sub> e	CO <sub>2</sub> equivalent emissions
COMS	continuous opacity monitoring systems
DEQ	Idaho Department of Environmental Quality
dscf	dry standard cubic feet
EI	emissions inventory
EPA	United States Environmental Protection Agency
FHMRL	Fort Hall Mine Road Landfill
GHG	greenhouse gases
gph	gallons per hour
gpm	gallons per minute
gr	grains (1 lb = 7,000 grains)
HAP	hazardous air pollutants
HHV	higher heating value
hp	horsepower
hr/yr	hours per consecutive 12-calendar-month period
ICE	internal combustion engines
IDAPA	a numbering designation for all administrative rules in Idaho promulgated in accordance with the Idaho Administrative Procedures Act
iwg	inches of water gauge
lb/hr	pounds per hour
LFG	landfill gas
MACT	Maximum Achievable Control Technology
mg/dscm	milligrams per dry standard cubic meter
Mg	megagrams, 1x10 <sup>6</sup> gram
Mg/yr	megagrams per year
MMBtu	million British thermal units
MMscf	million standard cubic feet
MRRR	Monitoring, Recordkeeping and Reporting Requirements
NESHAP	National Emission Standards for Hazardous Air Pollutants
NMOC	nonmethane organic compound
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

PC	permit condition
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
ppm	parts per million
ppmw	parts per million by weight
PSD	Prevention of Significant Deterioration
psig	pounds per square inch gauge
PTC	permit to construct
PTE	potential to emit
PW	process weight rate
RICE	reciprocating internal combustion engines
Rules	Rules for the Control of Air Pollution in Idaho
scf	standard cubic feet
SIP	State Implementation Plan
SO <sub>2</sub>	sulfur dioxide
SO <sub>x</sub>	sulfur oxides
TAP	toxic air pollutant
T/day	tons per calendar day
T/hr	tons per hour
T/yr	tons per consecutive 12 calendar-month period
T1	Tier I operating permit
T2	Tier II operating permit
ULSD	ultra low sulfur diesel
U.S.C.	United States Code
VOC	volatile organic compound

## 2. INTRODUCTION AND APPLICABILITY

Bannock County operates the Fort Hall Mine Road Landfill (FHMRL), a municipal solid waste landfill located at 1500 N. Fort Hall Mine Road. Pocatello. Because this facility is a landfill subject to the requirements of 40 CFR 60 Subpart WWW, this facility is required to obtain a Title V permit, as specified in IDAPA 58.01.01.859.04.

The facility is also classified as a major facility, as defined by IDAPA 58.01.01.008.10.c, because it emits or has the potential to emit CO above the major source threshold of 100 tons-per-year. The facility is also classified as a major facility, as defined by Subsection 008.10.a, because it emits or has the potential to emit Formaldehyde above the major source thresholds of 10 tons-per-year for any single HAP.

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

## 3. FACILITY INFORMATION

### 3.1 Facility 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, with a calculated capacity of 1,505,097 Mg, 1943 – 1993), was succeeded by Cell 2 “Site A” (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 7,310,000 Mg. The gas generated by the landfill is collected in a landfill gas (LFG) collection system and routed to two IC engines and a flare. Under primary operation, all landfill gas is combusted by the IC engines with the flare serving as a backup combustion source when IC engines are offline. The flare is capable of combusting all generated landfill gas on its own.

In 2010, Bannock County proposed to install a landfill gas (LFG) collection system at its Fort Hall Mine Road Landfill. Collected LFG was to be piped to an open flare and to a lean-burn Caterpillar model 3520C IC engine 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.

### 3.2 Facility Permitting History

#### Tier I Operating Permit History - Previous 5-year permit term July 18, 2013 to June 19, 2019

The following information is the permitting history of this Tier I facility during the previous five-year permit term which was from July 18, 2013 to June 19, 2019. This information was derived from a review of the permit files available to DEQ. Permit status is noted as active and in effect (A) or superseded (S).

August 22, 2016	T1-2010.0155, T1 administrative amendment to incorporate P-2009.0146 Project 61559 issued January 1, 2016. Project 61559 was processed in accordance with section 209.05.c, Permit Status (S)
January 27, 2014	T1-2010.0155, T1 administrative amendment to correct a typo, Permit status (S)
January 17, 2014	T1-2010.0155, T1 administrative amendment to correct a typo, Permit status (S)
July 18, 2013	T1-2010.0155, Initial T1 Operating Permit, Permit status (S)

Tier I Operating Permit History – Current 5-year permit term June 19, 2019 to Present

The following information is the permitting history of this Tier I facility during current term from June 19, 2019 to present. This information was derived from a review of the permit files available to DEQ. Permit status is noted as active and in effect (A) or superseded (S).

July 2, 2019 T1-2018.0007 Project 61994, DEQ initiated Tier I operating permit renewal reissuance due to typographical error (A, will be S upon issuance of this permit)

June 19, 2019 T1-2018.0007 Project 61994, Tier I operating permit renewal (S)

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

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

September 21, 2020 P-2009.0146 project 62411, PTC modification to update engine emissions based on manufacturer's data, Permit status (A)

October 22, 2018 P-2009.0146 project 61941, PTC modification for installing the second Caterpillar model 3520C IC engine, Permit status (S)

January 7, 2016 P-2009.0146 project 61559, PTC modification to permit the as installed Caterpillar model 3520C IC engine in lieu of the previously permitted Caterpillar model 3516 IC engine, Permit status (S)

April 6, 2010 P-2009.0146, the initial PTC for installing a landfill gas collection system with a flare and a landfill gas combustion engine (a Caterpillar model 3516 IC engine), Permit status (S)

**4. APPLICATION SCOPE AND APPLICATION CHRONOLOGY**

**4.1 Application Scope**

This permit is an administrative amendment of the facility's currently effective Tier I operating permit to incorporate the requirements of P-2009.0146, project 62411, issued on September 21, 2020, in accordance with the requirements of IDAPA 58.01.01.209.05.c. Therefore, this project is an Administrative Amendment of the existing Tier I permit pursuant to IDAPA 58.01.01.381. No other changes were requested.

**4.2 Application Chronology**

September 21, 2020	The Permittee requested that with the final issuance of Permit to Construct P-2009.0146, project 62411, that an Administrative Amendment of the Tier I permit be performed. This permit was issued September 21, 2020.
September 29, 2020	DEQ made available the draft permit and statement of basis for peer and regional office review.
October 7, 2020	DEQ made available the draft permit and statement of basis for applicant review.
October 20, 2020	DEQ provided the proposed permit and statement of basis for EPA review.
October 30, 2020	DEQ issued the final permit and statement of basis.

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

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

### 5.1 Process No. 1 – Landfill Operations with NMOC Emission Rate Less Than 50 Mg/yr.

Table 5.1 lists the emissions units and control devices associated with the landfill operations with non-methane organic compound (NMOC) emission rate less than 50 Mg/yr.

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

Emissions Unit ID No.	Emissions Unit Description	Control Device (if applicable)	Emission Point ID No.
	<u>Landfill:</u> Closed Cell 1, Cell 2 “Site A”, and Cell 4	No control equipment required until NMOC emissions $\geq$ 50 Mg/yr	N/A

The landfill currently consists of two active cells. The original cell (Closed Cell 1, with a calculated capacity of 1,505,097 Mg, 1943 – 1993), was succeeded by Cell 2 “Site A”, one of the two active cells, (with a calculated capacity of 1,160,000 mg, 1994 – 2022 or later, estimated). A third cell of the total three cells, the second active cell, Cell 4, began operations in 2016 and has increased the total landfill design capacity to 8,061,025 tons (7,310,000 Mg). The gas generated by the landfill is collected in a landfill gas (LFG) collection system and routed to an IC engines and a flare. However this system is installed at the facility’s discretion and is not currently required by state or federal regulations.

### 5.2 Process No. 2 - Landfill Operations with NMOC Emission Rate Greater Than 50 Mg/yr.

Table 5.2 lists the emissions units and control devices associated with the landfill operation with NMOC emission rate is greater than or equal to 50 Mg/yr.

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

Emissions Unit ID No.	Emissions Unit Description	Control Device (if applicable)	Emission Point ID No.
	<u>Landfill:</u> Closed Cell 1, Cell 2 “Site A”, and Cell 4	Landfill Gas (LFG) Collection System w/ the gas routed to an IC Engine(s) and/or a Flare	N/A (all LFG is routed to the IC engine(s) and flare)

Under this process scenario, the facility would be required by 40 CFR 60 Subpart WWW to install and operate a Landfill Gas Collection System and route collected gas to an appropriate control device (i.e., flare or IC engines). However, this scenario will not be considered applicable until the facility’s NMOC emission rate is greater than 50 Mg/yr. Fort Hall Mine Road Landfill’s most recent Annual NMOC calculation report (FY 2017) estimates the facility’s NMOC generation rate to be 3.15 Mg/yr.

### 5.3 Process No. 3 – Flare

Table 5.3 lists the emissions units and control devices associated with the flare.

**Table 5.3 EMISSIONS UNITS, CONTROL DEVICE, AND DISCHARGE POINT INFORMATION**

Emissions Unit ID No.	Emissions Unit Description	Control Device (if applicable)	Emission Point ID No.
Flare	Flare: Maximum Rating: 15.92 MMBtu/hr Fuel: landfill gas	N/A	Flare, F1

Collected LFG is piped to the lean-burn IC engine(s) powering an electrical generator that is connected to the commercial power grid. When the IC engines are down for maintenance or when there is excess LFG, the gas is routed to the flare.

**5.4 Process No. 4 – IC Engine #1 and IC Engine #2**

Table 5.4 lists the emissions units and control devices associated with the IC engines.

**Table 5.4 EMISSIONS UNITS, CONTROL DEVICE, AND DISCHARGE POINT INFORMATION**

Emissions Unit ID No.	Emissions Unit Description	Control Device (if applicable)	Emission Point ID No.
IC Engine #1	IC Engine #1: Manufacturer: Caterpillar Model: 3520C Manufacture Date: 2013 Maximum Power Rating: 2,242 bhp Fuel: Landfill gas	N/A	IC Engine #1 exhaust, E1
IC Engine #2	IC Engine #2: Manufacturer: Caterpillar Model: 3520C Manufacture Date: 08/2018 Maximum Power Rating: 2,242 bhp Fuel: Landfill gas	N/A	IC Engine #2 exhaust, E2

Collected LFG is piped to the lean-burn IC engine(s) powering an electrical generator that is connected to the commercial power grid. When the IC engine(s) are down for maintenance or when there is excess LFG, the gas is routed to the flare.

**5.5 Emissions Inventory**

Table 5.5 summarizes the emissions inventory (EI) for this Tier I facility, taken from the most recent permitting project, P-2009.0146, Project 62411, issued September 21, 2020. Refer to Statement of Basis for the underlying PTC No. P-2009.0146 project 62411 for EI details. All values are expressed in units of tons-per-year and represent the facility's potential to emit. Potential to emit is defined as the maximum capacity of a facility or stationary source to emit an air pollutant under its physical and operational design. Any physical or operational limitation on the capacity of the facility or source to emit an air pollutant, including air pollution control equipment and restrictions on hour of operation or on the type or amount of material combusted, stored or processed shall be treated as part of its design if the limitation or the effect it would have on emission is state or federally enforceable.

**Table 5.5 EMISSIONS INVENTORY - POTENTIAL TO EMIT (T/yr)**

Source Description	PM <sub>10</sub>	SO <sub>2</sub>	NO <sub>x</sub>	CO	VOC	Formaldehyde
	T/yr	T/yr	T/yr	T/yr	T/yr	T/yr
Flare	0.81	14.36	2.52	2.93	0.83	17.64
IC Engine #1	1.07		23.98	96.39	13.44	
IC Engine #2	1.07		23.98	96.39	13.44	
<b>Total Emissions</b>	<b>2.95</b>	<b>14.36</b>	<b>50.48</b>	<b>195.71</b>	<b>27.71</b>	<b>17.64</b>



## **6. REGULATORY REVIEW**

### **6.1 Administrative Amendment**

This permit is for an Administrative Amendment in accordance with IDAPA 58.01.01.381 to include the requirements of P-2009.0146 Project 62411, issued September 21, 2020, in accordance with the requirements of IDAPA 58.01.01.209.05.c. Therefore, this project is an Administrative Amendment of the existing Tier I permit. The amendment date was added to the front page, and permit conditions updated as described in the Permit Conditions Review section of the Statement of Basis to P-2009.0146 Project 62411.

### **6.2 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.

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

This facility is a landfill subject to the requirements of NSPS WWW. Therefore, this facility is required to obtain a Title V permit, as specified in IDAPA 58.01.01.859.04.

Facility-wide emissions 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.

### **6.4 PSD Classification (40 CFR 52.21)**

The facility is not classified as an existing major stationary source, because the estimated emissions of PM<sub>10</sub>/PM<sub>2.5</sub>, SO<sub>2</sub>, NO<sub>x</sub>, and CO do not have the potential to exceed major stationary source thresholds and the facility is not a designated facility as defined in 40 CFR 52.21(b)(1)(i)(a). The facility is not a major source for CO<sub>2e</sub> 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.

### **6.5 NSPS Applicability (40 CFR 60)**

Because the facility is a landfill with a 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.

Refer to the statement of basis for PTC Permit No. P-2009.0146 project 62411 issued September 21, 2020, 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 the applicability date of June 12, 2006, and was 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, 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.

Refer to the statement of basis for PTC Permit No. P-2009.0146 project 62411 issued September 21, 2020, for a complete breakdown of applicable 40 CFR 60 Subpart JJJJ regulations.

### **6.6 NESHAP Applicability (40 CFR 61)**

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

### **6.7 MACT 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.

Refer to the statement of basis for PTC Permit No. P-2009.0146 project 62411 issued September 21, 2020, for a complete breakdown of applicable 40 CFR 63 Subpart AAAA regulations.

A final rule revision to Subpart AAAA was issued March 26, 2020, that requires submittal of semi-annual reports via EPA's CEDRI database. The electronic reporting to CEDRI must begin once the spreadsheet template upload/forms have been available in CEDRI for 90 days, but not later than September 27, 2021 (see §63.1981(l)). As of August 6, 2020, the semi-annual report form is not available in CEDRI (see <https://www.epa.gov/electronic-reporting-air-emissions/cedri#announcements>).

#### **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.

Refer to the statement of basis for PTC Permit No. P-2009.0146 project 62411 issued September 21, 2020, for a complete breakdown of applicable 40 CFR 63 Subpart ZZZZ regulations.

### **6.8 CAM Applicability (40 CFR 64)**

CAM requirements are not applicable to this facility as the facility does not meet the applicability criteria in 40 CFR 64.2.

**6.9 Acid Rain Permit (40 CFR 72-75)**

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

**7. PUBLIC COMMENT**

Public notice is not required for this Administrative Amendment in accordance with IDAPA 58.01.01 381.01.e.

**8. EPA REVIEW OF PROPOSED PERMIT**

As required by IDAPA 58.01.01.381.02.c, EPA was notified of the revised permit on October 20, 2020.

## **Appendix A - Facility Comments on Draft Permit**

On October 19, 2020, the facility stated they had no comments on the draft permit.