

COMMONWEALTH OF VIRGINIA
Department of Environmental Quality
Valley Regional Office

STATEMENT OF LEGAL AND FACTUAL BASIS

Battle Creek Landfill
Page County, Virginia
Permit No. VRO81380

Title V of the 1990 Clean Air Act Amendments required each state to develop a permit program to ensure that certain facilities have federal Air Pollution Operating Permits, called Title V Operating Permits. As required by 40 CFR Part 70 and 9 VAC 5 Chapter 80, Page County has applied for a Title V Operating Permit for its landfill in Page County, Virginia. The Department has reviewed the application and has prepared a Title V Operating Permit.

Engineer/Permit Contact: *Signed original* Date: 04/19/2012
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FACILITY INFORMATION

Permittee

Page County
219 Landfill Drive
Luray, Virginia 22835

Facility

Battle Creek Landfill
219 Landfill Drive
Luray, Virginia 22835

Plant ID No.: 51-139-0031

SOURCE DESCRIPTION

NAICS Code 562212 (Refuse Systems)

The Battle Creek Landfill is a municipal solid waste (MSW) management facility located at 219 Landfill Drive, in Luray, Virginia.

Battle Creek Landfill was permitted as a Solid Waste Facility under the Virginia Solid Waste Disposal Regulations on February 21, 1995 and began operations under Solid Waste Permit #579 in January 1999. The initial design capacity of the landfill under the Solid Waste Permit #579 was 2.886 million m³. The Solid Waste Permit was amended to increase the capacity of the landfill in 2007; the permitted capacity of the landfill is 3.704 million m³ (2.769 million megagrams). On November 20, 2006, the facility's minor NSR permit dated April 23, 2001 was amended to reflect the permitted design capacity; there have been no changes to the minor NSR permit since November 20, 2006.

The permitted design capacity of the Battle Creek Landfill is greater than 2.5 million m³ and 2.5 million megagrams (See Attachment A). Therefore, the landfill is regulated according to New Source Performance Standards (NSPS) for Municipal Solid Waste Landfills (40 CFR 60 Subpart WWW). As stated in 40 CFR §60.752 (b), landfills above the 2.5 million m³ and 2.5 million megagrams design capacity are subject to Title V permitting requirements. This source is located in an attainment area for all pollutants.

COMPLIANCE STATUS

The facility is inspected once a year. The facility was last inspected on June 15, 2011. In addition, all reports and other data required by permit conditions or regulations, which are submitted to DEQ, are evaluated for compliance. The facility has not been found to be in violation of any state or federal applicable air program requirements at this time.

EMISSION UNIT AND CONTROL DEVICE IDENTIFICATION

The emissions units at this facility consist of the following:

Table 1: Significant Emission Units

Emission Unit ID	Stack ID	Emission Unit Description	Size/Rated Capacity	Pollution Control Device Description (PCD)	PCD ID	Pollutant Controlled	Applicable Permit Date
Landfill							
EU-1	-	MSW Landfill	2.769 million Mg	-	-	-	04/23/2001 Permit, as amended 11/20/2006
Landfill Roads							
EU-2	-	Landfill Roads	-	-	-	-	04/23/2001 Permit, as amended 11/20/2006

EMISSIONS INVENTORY

A copy of the 2010 annual emission update is attached as Attachment B. Emissions are summarized in the following tables:

Table 2: Annual Emissions - 2010

2010 Pollutant Emissions (Plant wide Total)	
Pollutant	Tons Emitted
<i>Criteria Pollutants</i>	
PM-10	9.2
VOC	17.5
NO _x	-
CO	-
SO ₂	-
TRS	0.90
<i>Non Methane Organic Compounds (NMOC)</i>	
NMOC	44.8
<i>Hazardous Air Pollutants (HAP)</i>	
Total HAP	--

As shown above in Table 2, emissions from the landfill are below the Major New Source Review (NSR) levels; therefore major NSR permitting does not apply to Battle Creek Landfill at this time.

EMISSION UNIT APPLICABLE REQUIREMENTS – (EU-1)

Limitations

Battle Creek Landfill is subject to 40 CFR 60, Subpart WWW - New Source Performance Standards (NSPS) for Municipal Solid Waste Landfills. The following limitations are state BACT and/or other applicable requirements from the minor NSR permit dated April 23, 2001, as amended November 20, 2006 which includes requirements that are based on 40 CFR Part 60, Subpart WWW requirements. Please note that the condition numbers are from the permit dated April 23, 2001, as amended November 20, 2006. A copy of the permit is enclosed as Attachment C.

Condition 3: design capacity shall not exceed 2.769 million megagrams and 3.704 million cubic meters

Condition 4: landfill gas (LFG) collection and control system requirements in the event NMOC emission rate would ever be equal to or greater than 50 Mg/yr

Condition 19: solid waste permit amendment requirement in the event landfill gas (LFG) collection and control system is required

Condition 20: TV permit amendment requirement in the event landfill gas (LFG) collection and control system is required

Being subject to the NSPS means that Battle Creek Landfill is also subject to 40 CFR 60, Subpart A - General Provisions. All applicable limitations from Subparts A and WWWW have been included in the permit. Condition 4 does not currently require the facility to install a LFG collection and control system. However, Condition 4 requires the facility to submit a collection and control design plan and install a collection and control system in compliance with 40 CFR §60.752 (b)(2) in the event NMOC emission rate would ever be equal to or greater than 50 Mg/yr.

40 CR 60 Subpart WWWW includes requirements applicable to the operation and monitoring of LFG collection and control systems (e.g., 40 CFR §60.753: Operational Standards for collection and control systems; §60.755: Compliance Provisions, and §60.756: Monitoring of Operations). The requirements have not been included in the Title V permit because the facility is not currently required to operate a collection and control system. If in the future the permittee is required to install a LFG collection and control system (i.e., if its NMOC emission rate becomes equal to or greater than 50 Mg/yr), the permittee is required to apply for an amendment to the Title V permit. The amended permit would include the applicable Subpart WWWW operational and monitoring requirements.

With respect to the NSPS, the facility's only applicable requirements at this time are monitoring, recordkeeping and reporting.

Monitoring and Recordkeeping

The monitoring and recordkeeping requirements in Conditions 7 and 14 of the minor NSR permit dated April 23, 2001, as amended November 20, 2006, have been included in the permit. These requirements, derived from 40 CFR 60 Subpart WWWW, meet Part 70 monitoring requirements for the landfill.

As required by Condition 14 of the minor NSR permit, the permittee shall maintain records including but not limited to the design capacity of the landfill, the current amount of solid waste in place, and the year-by-year waste acceptance rate.

As required by Condition 7 of the minor NSR permit, actual emissions from the operation of the landfill shall be calculated using either of the following equations (Equation 1 or 2):

.....Equation 1

- M_{NMOC} = total NMOC emission rate from the landfill, megagrams per year
- k = methane generation rate constant, year⁻¹
- L_0 = methane generation potential, cubic meters per megagram solid waste
- M_i = mass of solid waste in the i^{th} section, megagrams
- t_i = age of the i^{th} section, years
- C_{NMOC} = concentration of NMOC, parts per million by volume as hexane
- 3.6×10^{-9} = conversion factor

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

.....Equation 2

- M_{NMOC} = mass emission rate of NMOC from the landfill, megagrams per year
- L_0 = methane generation potential, cubic meters per megagram solid waste
- R = average annual acceptance rate, megagrams per year
- k = methane generation rate constant, year⁻¹
- t = age of the landfill, years
- C_{NMOC} = concentration of NMOC, parts per million by volume as hexane
- c = time since closure, years (for an active landfill $c = 0$ and $e^{-kc} = 1$)
- 3.6×10^{-9} = conversion factor

The mass of nondegradable solid waste may be subtracted from the average annual acceptance rate when calculating a value for R , if documentation of the nature and amount of such wastes is maintained.

Compliance Assurance Monitoring (CAM) Applicability

As per 40 CFR Part 64, Compliance Assurance Monitoring (CAM), emission limitations or standards proposed after November 15, 1990 pursuant to Section 111 or 112 are exempt from CAM (40 CFR §64.2 (b)(1)). All applicable monitoring requirements from Subpart WWW have been included in the permit. Since Subpart WWW was promulgated on March 1996 under the authority of Section 111 of the New Source Performance Standards (NSPS), the emission limitations or standards derived from Subpart WWW are exempt from CAM and no additional monitoring has been incorporated into the Title V permit.

Testing

The permit requires testing of the site-specific NMOC concentration using the procedures described in 40 CFR 60, Subpart WWW. The Title V permit includes the requirement that the

permittee use appropriate method(s) in accordance with procedures approved by DEQ if further testing for compliance purposes is performed.

Reporting Requirements

The reporting required in the Title V permit has been incorporated from Conditions 15, 16, 17, 18, 21 and 22 of the minor NSR permit dated April 23, 2001, as amended November 20, 2006. Since the NMOC emission rate is less than 50 Mg/yr, 40 CFR 60 Subpart WWW reporting requirements related to a collection and control system have not been incorporated into the permit. However, Conditions 16 and 17 requires the facility to submit a collection and control design plan and install a collection and control system in compliance with 40 CFR §60.752 (b)(2) in the event NMOC emission rate would ever equal to or greater than 50 Mg/yr.

Streamlined Requirements

The following applicable requirements have not been included for the reasons provided:

40 CFR §60.757 (a) - Initial Design Capacity Submittal Requirement

On October 16, 2000, the facility submitted the initial design capacity report. This report also fulfilled the requirements of the notification of the date construction is commenced

Per 40 CFR §60.7 (a)(1). The revised design capacity report was submitted on February 3, 2007.

40 CFR §60.757 (b) - Initial Non Methane Organic Compounds (NMOC) Emission Rate Report Requirement

On November 13, 2002, the facility submitted a NMOC emission rate report. As per the report, the 2001 emission estimate for the landfill was 75 Mg/yr. Since the NMOC emission rate exceeded 50 Mg/yr, the facility was required to determine a site-specific NMOC concentration and recalculate the NMOC emission rate under Tier 2 procedures, **or** submit a collection and control system design plan prepared by a professional engineer within one year of the report and comply with 40 CFR §60.752 (b)(2).

40 CFR §60.757 (c)(1) - Non Methane Organic Compounds (NMOC) Emission Rate Report Requirement under Tier 2 sampling

The initial Tier 2 sampling was conducted in April 2005; retesting using Tier 2 procedures is required every five years to determine the NMOC concentration. Tier 2 sampling was conducted during the week of April 26, 2010. Estimated NMOC emissions for the next five years will increase from 40.9 Mg/year in 2011 to 44.9 Mg/year in 2015. Based on the NMOC concentrations, determined from the April 2010 Tier 2 testing, and the projected waste acceptance rates, the 50 Mg/year limit will not be exceeded until the

year 2021. Therefore a landfill gas collection and control system is not required at this time and is not expected to be required during the next five years. A copy of the April 2010 Tier 2 Testing Report is included as Attachment D.

Condition 9 of the minor NSR permit dated April 23, 2001, as amended November 20, 2006

This condition has not been included as all applicable requirements from 40 CFR 60, Subpart WWW requirements have been included in the TV permit.

EMISSION UNIT APPLICABLE REQUIREMENTS - (Landfill Roads)

The requirements related to landfill roads are listed under “Facility Wide Conditions” in the permit. The “Facility Wide Conditions” in the permit also includes some of the fugitive dust conditions related to landfill work, i.e., cell construction, daily cover application, etc.

Limitations

The following limitations are state BACT and other applicable requirements from the minor NSR permit dated April 23, 2001, as amended November 20, 2006. Please note that the condition numbers are from the permit dated April 23, 2001, as amended November 20, 2006. A copy of the permit is enclosed as Attachment C.

Condition 5: fugitive dust emission control requirements

Condition 6: dust control plan requirement

Condition 8: visible emissions limit

Monitoring and Recordkeeping

The monitoring and recordkeeping requirements in Conditions 13 and 14 of the minor NSR permit dated April 23, 2001, as amended November 20, 2006, have been included in the permit.

In lieu of conducting periodic evaluations using EPA Method 9 to demonstrate compliance with the facility-wide visible emission limit, the permittee shall perform a daily visual survey of the trafficable roads at the site and landfill activities for sources of excessive emissions. The reason for not requiring EPA Method 9 is that there is no stack in the landfill to perform the test. The presence of excessive emissions requires further investigation as to the cause of the emissions and timely corrective action is required. All observations and corrective actions taken are to be logged and recorded. These records are to be available on-site for inspection by the DEQ and must be current for the most recent five years.

There is reasonable assurance that violations of the visible emission standard should not occur if the permittee complies with the permit condition to mitigate fugitive dust, implements the

operating procedures included in the dust control plan, performs a daily visible emission survey and conducts timely corrective actions as needed.

Compliance Assurance Monitoring (CAM)

CAM does not apply to the landfill roads because the landfill roads do not use a control device to achieve compliance with the emission limitations.

Testing

The permit does not require source emission tests. The permit requires that the permittee use appropriate method(s) in accordance with procedures approved by DEQ if further testing for compliance purposes is performed. The Department and EPA have authority to require testing not included in this permit if necessary to determine compliance with an emission limit or standard.

Reporting

No specific reporting has been included.

Streamlined Requirements

There are no streamlined requirements.

GENERAL CONDITIONS

The permit contains general conditions required by 40 CFR Part 70 and 9 VAC 5-80-110 that apply to all Federal operating permit sources. These include requirements for submitting semi-annual monitoring reports and an annual compliance certification report. The permit also requires notification of deviations from permit requirements or any excess emissions.

STATE-ONLY APPLICABLE REQUIREMENTS

Battle Creek Landfill did not identify any state-only requirements in their application. Therefore, no state-only requirements have been included in the permit.

FUTURE APPLICABLE REQUIREMENTS

On September 8, 2006 EPA proposed amendments (71 FR 53272) to 40 CFR 60, Subpart WWW, New Source Performance Standards (NSPS) for Municipal Solid Waste. In summary the amendments will clarify who is responsible for compliance activities where multiple parties are involved in the ownership or operation of the landfill gas collection, control, and/or treatment systems. In addition, the amendments will revise the NSPS requirements regarding startup, shutdown, malfunction, and routine maintenance. The proposed amendments will be applicable

to the facility upon final action and incorporation into the NSPS.

The facility will be subject to 40 CFR Part 63, Subpart AAAAA - National Emission Standards for Hazardous Air Pollutants for Municipal Solid Waste (MSW) Landfills when the uncontrolled emissions of NMOC from the landfill exceeds 50 Mg/yr, as calculated according to 40 CFR 60.754(a) of the MSW landfills New Source Performance Standards in 40 CFR 60, Subpart WWW, and the facility is required to install a collection and control system.

INAPPLICABLE REQUIREMENTS

The provisions of 40 CFR Part 98 – Mandatory Greenhouse Gas Reporting require owners and operators of municipal solid waste landfills that generate methane (CH₄) in amounts equivalent to 25,000 metric tons CO₂e or more per year, to report greenhouse gas (GHG) emissions, annually. The definition of “applicable requirement” in 40 CFR 70.2 and 71.2 does not include requirements such as those included in Part 98, promulgated under Clean Air Act (CAA) section 114(a)(1) and 208. Therefore, the requirements of 40 CFR Part 98 are not applicable under the Title V permitting program.

As a result of several EPA actions regarding GHG under the CAA, emissions of GHG must be addressed for a Title V permit renewed after January 1, 2011. The current state minor NSR (or PSD) permit for the facility contains no GHG-specific applicable requirements and there have been no modifications at the facility requiring a PSD permit. Therefore, there are no applicable requirements for the facility specific to GHG.

The facility is not subject to 9 VAC 5 Chapter 40, Article 43 (Rule 4-43, Emission Standards for Municipal Solid Waste Landfills) because Rule 4-43 applies only to MSW landfills that commenced construction before May 30, 1991. Battle Creek Landfill commenced construction after 1991.

COMPLIANCE PLAN

Battle Creek Landfill is currently in compliance with all applicable requirements. No compliance plan was included in the application or in the permit.

INSIGNIFICANT EMISSION UNITS

The insignificant emission units are presumed to be in compliance with all requirements of the Clean Air Act as may apply. Based on this presumption, no monitoring, recordkeeping or reporting shall be required for these emission units in accordance with 9 VAC 5-80-110.

Table 3: Insignificant Emission Units

Emission Unit No.	Emission Unit Description	Citation	Pollutant(s) Emitted (9 VAC 5-80-720 B)	Rated Capacity (9 VAC 5-80-720 C)
IS-1	Leachate Storage Tank 500,000 gallons	9 VAC 5-80-720 B	VOC	-
IS-2	Two Fuel Storage Tanks 1,000 gallons	9 VAC 5-80-720 B	VOC	-
IS-3	Waste Oil Burner 235,000 Btu/hr	9 VAC 5-80-720 B	NOx, CO, VOC, PM	-
IS-4	15 Solar Spark LFG Flares 90 scfm each	9 VAC 5-80-720 B	NOx, CO, VOC, PM	-

¹The citation criteria for insignificant activities are as follows:

9 VAC 5-80-720 A - Listed Insignificant Activity, Not Included in Permit Application

9 VAC 5-80-720 B - Insignificant due to emission levels

9 VAC 5-80-720 C - Insignificant due to size or production rate

CONFIDENTIAL INFORMATION

The permittee did not submit a request for confidentiality. Therefore, all portions of the Title V application are suitable for public review.

PUBLIC PARTICIPATION

A public notice regarding the draft permit was placed in the *Page News & Courier* on March 1, 2012. West Virginia, the only affected state, was sent a copy of the public notice in e-mail dated March 1, 2012. All persons on the Title V mailing list were also sent a copy of the public notice in an e-mail dated March 1, 2012. Public comments were accepted from March 2, 2012 to April 2, 2012. No public comments were received.

The draft Title V permit and Statement of Basis were sent to the EPA on February 24, 2012. The EPA 45-day comment period ended on April 17, 2012; no comments were received.

ATTACHMENTS

The following information is attached:

ATTACHMENT A: Design Capacity of the Landfill

ATTACHMENT B: 2010 Annual Emissions Update

ATTACHMENT C: Minor NSR Permit dated 04/23/2001 as amended 11/20/2006

ATTACHMENT D: Tier 2 Testing Report dated August 18, 2010

ATTACHMENT A
Design Capacity of the Landfill

ATTACHMENT B
2010 Annual Emissions Update

ATTACHMENT C
Minor NSR Permit dated 04/23/2001 as amended 11/20/2006

ATTACHMENT D
Tier 2 Testing Report dated August 18, 2010