

**COMMONWEALTH OF VIRGINIA  
Department of Environmental Quality  
Blue Ridge Regional Office**

**STATEMENT OF LEGAL AND FACTUAL BASIS**

Roanoke Valley Resource Authority  
Roanoke County, Virginia  
Permit No. BRRO-21330

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 9VAC5 Chapter 80, Roanoke Valley Resource Authority has applied for a Title V Operating Permit for its Roanoke County facility. The Department has reviewed the application and has prepared a draft Title V Operating Permit.

Engineer/Permit Contact: \_\_\_\_\_ Date: \_\_\_\_\_  
Paul R. Jenkins  
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Air Permit Manager: \_\_\_\_\_ Date: \_\_\_\_\_  
David J. Brown

Regional Director: \_\_\_\_\_ Date: \_\_\_\_\_  
Robert J. Weld

## **FACILITY INFORMATION**

### Permittee

Roanoke Valley Resource Authority  
1020 Hollins Road  
Roanoke, VA 24012-8011

### Facility

Smith Gap Regional Landfill  
8484 Bradshaw Road  
Salem (Roanoke County), Virginia

County-Plant Identification Number: 51-161-00246

## **SOURCE DESCRIPTION**

NAICS/SIC - 562212/4953 – The facility is a municipal solid waste (MSW) landfill with a design capacity greater than 2.5 million megagrams (Mg) and 2.5 million cubic meters (m<sup>3</sup>).

The Roanoke Valley Resource Authority (RVRA) owns and operates the Smith Gap Regional landfill. Waste is received at the landfill by rail. The rail cars are emptied and the waste is then loaded into dump trucks for transport to the working face of the landfill for final disposal.

The facility received a minor new source review permit (last amended on August 22, 2016) for the installation of a gas collection and control system (enclosed flare). The facility has no other underlying permits.

The landfill is required to obtain a Title V permit per NSPS Subpart WWW (*Standards of Performance for Municipal Solid Waste Landfills*) due to the design capacity of the landfill exceeding the thresholds capacity for applicability. After consideration of the NSPS requirements, this source does not emit at major source emission levels for any pollutant.

A permit exemption was issued to the source for an emergency generator on April 21, 1998. The emergency generator was constructed prior to the promulgation of NSPS Subpart IIII (*Standards of performance for Stationary Compression Ignition Internal Combustion Engines*). The engine qualifies as an existing engine under MACT Subpart ZZZZ (*National Emission Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines*).

The gasoline dispensing facility (EU-9) is subject to MACT CCCCCC (*National Emission Standards for Hazardous Air Pollutants for Source Category: Gasoline Dispensing Facilities*). The monthly throughput is less than the 10,000 gallon throughput threshold level in the MACT.

Virginia regulations (9VAC5-80-110.A.2) states that for any source other than a major source subject to this article [Federal Operating Permits for Stationary Sources], the board shall include in the permit all applicable requirements that apply to the emissions units that cause the source to be subject to this article. NRRA is not a major source and the landfill is the emission unit that causes the source to be subject to the Title V permitting. See the Insignificant Emission Unit section and the MACT ZZZZ and MACT CCCCCC section for additional discussion.

**COMPLIANCE STATUS**

A full compliance evaluation of this facility, including a site visit, has been conducted. In addition, all reports and other data required by permit conditions or regulations, which are submitted to DEQ, are evaluated for compliance. Based on these compliance evaluations, the facility has not been found to be in violation of any state or federal applicable requirements at this time.

**EMISSION UNIT AND CONTROL DEVICE IDENTIFICATION**

The emissions units at this facility that are included in this permit consist of the following:

EU-1 Landfill Disposal Area  
 Size  $>2.5 \times 10^6$  Mg &  $>2.5 \times 10^6$  m<sup>3</sup>  
 NMOC collected and controlled by the Gas Collection and Control System (GCCS)  
 No minor NSR Permit for the landfill.

GCCS Gas Collection and Control System (Stack ID S-1)  
 Enclosed flare (2,000 scfm)  
 August 22, 2016 Permit Document for the GCCS.

**EMISSIONS INVENTORY**

A copy of the 2015 annual emission update is attached. Emissions are summarized in the following tables.

2015 Actual Criteria Pollutant Emission in Tons/Year							
	VOC	CO	SO <sub>2</sub>	PM <sub>10</sub>	PM <sub>2.5</sub>	NO <sub>x</sub>	CO <sub>2e</sub>
Total	7.5	0.8	1.1	1.4	1.4	3.4	137,680.5

The NMOC emissions for 2015 were 17.6 tons/year. Total HAP emissions of 5.5 tpy with Toluene (1.7 tpy) and Xylenes (0.6 tpy) being the two individual HAP over 0.5 tpy.

## **EMISSION UNIT APPLICABLE REQUIREMENTS**

### **Process Equipment Requirements - Landfill and Gas Collection and Control System (GCCS) Conditions 1 - 14**

Smith Gap Landfill is a municipal solid waste (MSW) landfill; construction commenced on February 17, 1992 with waste first accepted on May 16, 1994. Solid Waste Permit #555 was issued to the landfill on June 25, 1993. The landfill gas collection control system has applicable requirements in the minor NSR permit last amended on August 22, 2016. The landfill design capacity is greater than the 2.5 million megagrams and 2.5 million cubic meters applicability threshold in NSPS WWW and is therefore subject to NSPS WWW.

NSPS Subpart WWW (40 CFR 60.752(b)) states that owners or operators of an MSW landfill subject to that 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 requirements. Virginia regulations (9VAC5-80-110.A.2) states that for any source other than a major source subject to this article [Federal Operating Permits for Stationary Sources], the board shall include in the permit all applicable requirements that apply to emissions units that cause the source to be subject to this article. Smith Gap Regional Landfill is not a major source and the landfill is the emission unit that causes the source to be subject to Title V permitting.

MACT Subpart AAAA – National Emission Standards for Hazardous Air Pollutants: Municipal Solid Waste Landfills states that landfills that have estimated uncontrolled emissions equal to or greater than 50 megagrams per year (Mg/year) NMOC as calculated according to NSPS WWW must meet the requirements of NSPS WWW, meet the startup, shutdown, and malfunction (SSM) requirements and provides that compliance with the operating conditions shall be demonstrated by parameter monitoring results that are within the specified ranges and additional reporting requirements.

The NSPS WWW required Tier 2 NMOC Emission Rate Report (test date May 24, 2016) indicates that the calculated NMOC Emissions for 2015 are 54.1 Mg/yr. This is the first report that has been submitted by the facility that indicates that the calculated NMOC emissions exceed the 50 Mg regulatory threshold in NSPS WWW and MACT AAAA. The facility has the option under 40 CFR Part 60.757(c)(1) to retest within six months (November 24, 2016); on October 3, 2016 the facility indicated that they are receiving quotes for retesting. The current GCCS was installed prior to exceeding the threshold in NSPS WWW and MACT AAAA for installing a GCCS. If the facility does not decide to retest or retests and still exceeds the 50 Mg/yr threshold they are required to meet the requirements that are applicable for a GCCS that are required by NSPS WWW and MACT AAAA.

## **Limitations**

**Condition 1** – The emissions from the enclosed flare shall not exceed the limits in this condition.

**Condition 2** – The enclosed flare is required to be operated with no visible emissions except for periods not to exceed a total of five minutes during two consecutive hours.

## **Monitoring**

**Condition 3** – The enclosed flare is required to have a device to continuously measure and record the operating temperature and gas flow rate.

## **Recordkeeping**

**Condition 4** – The permittee is required to maintain the records listed in this condition to demonstrate compliance with the permit limitations.

## **NSPS WWW and MACT AAAA**

### **Standards for Air Emissions**

**Condition 5** – If the calculated NMOC emission rate is greater than or equal to 50 Mg the permittee is required to demonstrate that the NMOC emission rate is less than 50 Mg, submit an LFG collection and control system design plan, install a gas collection and control system and operate that system in compliance with NSPS WWW and MACT AAAA.

**Condition 6** – The facility is required to be constructed to allow for emissions testing.

**Condition 7** – The permittee is required to conduct initial performance testing on the gas collection control system after it is required to be installed in Condition 5.

## **Records**

**Condition 8** – The permittee is required to maintain the records listed in this condition to demonstrate compliance with the NSPS WWW and MACT AAAA.

## **Notifications**

**Condition 9** – The permittee is required to provide written notification of testing.

## **Reporting**

**Condition 10** – The permittee is required to submit a semi-annual report of the information included in this condition.

**Condition 11** – The permittee is required to submit amended Design Capacity Reports no later than 90 days after commencing construction on the modification of the landfill.

**Condition 12** – The permittee is required to submit annual NMOC emissions reports.

**Condition 13** – The permittee is required to submit a closure report within 30 days of the date the landfill stops accepting waste.

**Condition 14** – The permittee is required to submit a report no later than 30 days prior to cessation of operation or removal of the control device required in Condition 12.

The permit does not require source testing. The Department and EPA have the authority to require testing not included in this permit if necessary to determine compliance with an emission limit or standard.

Monitoring of the visible emissions from the enclosed flare is not included since no visible emissions from the stack are expected. The monitoring and recordkeeping included in this section meet permit content obligations at 9VAC5-80-110 E & K and are considered sufficient to assure compliance with the limits included in this permit.

## **STREAMLINED REQUIREMENTS**

Conditions 7 (T5-48), 8 (T5-42) and 11 (T5-29) of the August 22, 2016 minor NSR Permit document have been streamlined. The requirements contained in these three conditions are included in the General Conditions section of the Title V permit.

The corresponding Title V permit condition is included in parentheses above and the Title V permit conditions include the corresponding minor NSR permit condition in the citation.

## **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 9VAC5-80-110.



(9VAC5-80-110.A.2) states that for any source other than a major source subject to this article [Federal Operating Permits for Stationary Sources], the board shall include in the permit all applicable requirements that apply to emission units that cause the source to be subject to this article. Smith Gap is not a major source and the landfill is the emission unit that causes the source to be subject to Title V permitting. This permitting approach was discussed with Kathleen Cox, EPA Region III.

The following is a discussion of the two units:

**Gasoline Storage Tank (EU-6b)**

The gasoline tank (EU-6b) meets the definition of gasoline dispensing facility in MACT CCCCCC – National Emission Standards for Hazardous Air Pollutants for Source Category: Gasoline Dispensing Facilities. The facility’s throughput has been less than 10,000 gallons of gasoline per month; therefore, the facility must comply with 40 CFR 63.11111, 40 CFR 63.11111(e), 40 CFR 63.11115 and 40 CFR 63.11116.

1. The permittee is required to maintain the gasoline dispensing facility (EU-9) in compliance with 40 CFR 63 Subpart CCCCCC. If the facility has a monthly throughput of 10,000 gallons of gasoline or more, the permittee is required to comply with all additional applicable requirements of 40 CFR 63 Subpart CCCCCC.  
(40 CFR 63.11111)
2. The permittee is required to comply with the following:
  - a. The permittee must, at all times, is required to operate and maintain any affected source, including associated air pollution control equipment and monitoring equipment, in a manner consistent with safety and good air pollution control practices for minimizing emissions. Determination of whether such operation and maintenance procedures are being used will be based on information available to the Administrator which may include, but is not limited to, monitoring results, review of operation and maintenance procedures, review of operation and maintenance records, and inspection of the source.
  - b. The permittee is required to keep applicable records and submit reports as specified in 40 CFR 63.11125(d) and 40 CFR 63.11126(b).  
  
(40 CFR 63.11115)
3. The permittee is required to maintain records to demonstrate that their monthly throughput is less than the 10,000 gallon threshold level in 40 CFR 63.11111(b). Records required in

this subpart are required to be available for inspection by the DEQ within 24 hours of a request and shall be current for the most recent five years.  
(40 CFR 63.11111(e))

4. The permittee is required to prevent gasoline to be handled in a manner that would result in vapor releases to the atmosphere for extended periods of time. Measures to be taken include, but are not limited to, the following:
    - a. Minimize gasoline spills;
    - b. Clean up spills as expeditiously as practicable;
    - c. Cover all open gasoline containers and all gasoline storage tank fill-pipes with a gasketed seal when not in use; and
    - d. Minimize gasoline sent to open waste collection systems that collect and transport gasoline to reclamation and recycling devices, such as oil/water separators.
- (40 CFR 63.11116)

**Emergency diesel engine (EU-4)**

EU-4 is a diesel fired 335 hp reciprocating internal combustion engine (RICE). The engine is an affected unit under MACT ZZZZ and meets the definition of an existing emergency RICE at an area source of HAP emissions. The engine is subject to the opacity requirement for new and modified sources (9VAC5-50-80). This engine was exempted from minor new source review requirements in April 21, 1998.

1. The permittee is required to be in compliance with the emission limitations, operating limitations and other requirements in Subpart ZZZZ that apply to the source at all times. At all times the permittee is required to operate and maintain the affected source in a manner consistent with safety and good air pollution control practices for minimizing emissions. Determination of whether such operation and maintenance procedures are being used will be based on information available to the Administrator which may include, but is not limited to, monitoring results, review of operation and maintenance procedures, review of operation and maintenance records and inspection of the source.  
(40 CFR 63.6605)
2. The permittee is required to comply with the emission limitations and other requirements in Item 4 of Table 2d to Subpart ZZZZ of Part 63.  
(40 CFR 63.6603)

3. The permittee is required to operate and maintain each stationary RICE and after-treatment control device (if any) according to the manufacturer's emission-related written instructions or develop their own maintenance plan which shall provide to the extent practicable for the maintenance and operation of the engine in a manner consistent with good air pollution control practice for minimizing emissions.  
(40 CFR 63.6625(e))
4. The permittee has the option to utilize an oil analysis program as described in 40 CFR 63.6625(i) to extend the specified oil change requirement in Item 4 of Table 2d to Subpart ZZZZ of Part 63. If an oil analysis program is utilized, the analysis program must be part of the maintenance plan for the engines.  
(40 CFR 63.6625(i))
5. The permittee is required to minimize the engine's time spent at idle during startup and minimize the engine's startup time to a period needed for appropriate and safe loading of the engine, not to exceed 30 minutes.  
(40 CFR 63.6625(h))
6. The engine (EU-4) is required to be equipped with a non-resettable hour meter.  
(40 CFR 63.6625(f))
7. The permittee is required to demonstrate continuous compliance with each operating limitation, and other requirements in Item 4 of Table 2d to Subpart ZZZZ of Part 63 that apply to the source according to the methods specified in Item 9 of Table 6 to Subpart ZZZZ of Part 63.  
(40 CFR 63.6640(a))
8. In order for the engines to be considered an emergency stationary RICE under Subpart ZZZZ, any operation other than those listed in 40 CFR 63.6640(f), is prohibited. If the permittee does not operate the engine according to the requirements in 40 CFR 63.6640(f), the engine will not be considered an emergency engine under Subpart ZZZZ and shall meet all requirements for non-emergency engines.  
(40 CFR 63.6640(f))
9. The permittee is required to comply with the applicable requirements in Table 8 to Subpart ZZZZ of Part 63.  
(40 CFR 63.6665)
10. The permittee is required to keep the following records:

- a. A copy of each notification and report that the permittee submitted to comply with Subpart ZZZZ, including all documentation supporting each Initial Notification or Notification of Compliance Status that the permittee submitted, according to the requirement in 40 CFR 63.10(b)(2)(xiv).
- b. Records of the occurrence and duration of each malfunction of operation (i.e. process equipment) or the air pollution control and monitoring equipment.
- c. Records of all required maintenance performed on the air pollution control and monitoring equipment.
- d. Records of all actions taken during periods of malfunction to minimize emissions in accordance with 40 CFR 63.6605(b), including corrective actions to restore malfunctioning process and air pollution control and monitoring equipment to its normal or usual manner of operation.
- e. Records of the work or management practices required in Section 9 of Table 6 to Subpart ZZZZ of Part 63.
- f. Records of the maintenance conducted on the stationary RICE in order to demonstrate that the source operated and maintained the stationary RICE and after-treatment control device (if any) according to the permittee's maintenance plan.
- g. If the oil analysis program is implemented, the permittee must keep records of the parameters that are analyzed as part of the program, the results of the analysis, and the oil changes for the engine.

(40 FR 63.6625(i) and 40 CFR 63.6655(a), (d), (e))

11. If the emergency stationary RICE does not meet the standards in Subpart ZZZZ applicable to non-emergency engines, the permittee is required to keep records of the hours of operation of the engine that is recorded through the non-resettable hour meter. The documentation shall include the information specified in 40 CFR 63.6655(f).  
(40 FR 63.6655(f))
12. The permittee's records is required to have records in a form suitable and readily available for expeditious review, according to 40 CFR 63.10(b)(1).
  - a. As specified in 40 CFR 63.10(b)(1), the permittee must keep each record for 5 years following the date of each occurrence, measurement, maintenance, corrective action, report, or record.

- b. The permittee must keep each record readily accessible in hard copy or electronic form for at least 5 years after the date of each occurrence, measurement, maintenance, corrective action report, or record, according to 40 CFR 63.10(b)(1).

(40 FR 63.6660)

- 13. The permittee is required to report each instance in which the source did not meet an operating limitation in Section 1 of Table 2d of Subpart ZZZZ of Part 63 and any applicable requirement included in Table 8 of Subpart ZZZZ of Part 63. The permittee is required to report all deviations in the semiannual monitoring reports.

(40 CFR 63.6640(b) and 40 CFR 63.6650(f))

## **COMPLIANCE PLAN**

None

## **INAPPLICABLE REQUIREMENTS**

None identified in the permit application. The facility is subject to 40 CFR 98 (Subpart HH) and is required to maintain GHG monitoring records, calculations and copies of reports. However, the requirements contained in the GHG Reporting Rule in 40 CFR 98 are currently not included in the definition of applicable requirements in 40 CFR 70.2 and 71.2 and are therefore not included in the Title V permit. There are no applicable GHG permitting requirements.

## **GENERAL CONDITIONS**

The permit contains general conditions required by 40 CFR Part 70 and 9VAC5-80-110 that apply to all Federal-operating permitted 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.

### **Comments on General Conditions**

#### **Federal Enforceability**

Article 1 (9VAC5-80-110 N) states that all terms and conditions in the Title V permit are enforceable by the administrator and citizens under the federal Clean Air Act, except those that have been designated as only state-enforceable.

### **Permit Expiration**

This condition refers to the Board taking action on a permit application. The “Board” refers to the State Air Pollution Control Board. The authority to take action on permit application(s) has been delegated to the Regions as allowed by §2.2-604 and §10.1-1185 of the *Code of Virginia*, and the “Department of Environmental Quality Agency Policy Statement No. 2-09”.

### **Failure/Malfunction Reporting**

Section 9VAC5-20-180 requires malfunction and excess emission reporting within four hours of discovery. Section 9VAC5-20-180 is from the general regulations. All affected facilities are subject to section 9VAC5-20-180 including Title V facilities. A facility may make a single report that meets the requirements of 9VAC5-20-180. The report must be made within four daytime business hours of discovery of the malfunction.

### **Permit Modification**

This general condition cites the sections that follow:

9VAC5-80-50. Applicability, Federal Operating Permit for Stationary Sources

9VAC5-80-190. Changes to Permits

9VAC5-80-260. Enforcement

9VAC5-80-1100. Applicability, Permits For New and Modified Stationary Sources

9VAC5-80-1605. Applicability, Permits For Major Stationary Sources and Modifications Located in Prevention of Significant Deterioration Areas

9VAC5-80-2000. Applicability, Permits for Major Stationary Sources and Major Modifications Locating in Nonattainment Areas

### **Asbestos Requirements**

The Virginia Department of Labor and Industry under Section 40.1-51.20 of the Code of Virginia also holds authority to enforce 40 CFR 61 Subpart M, National Emission Standards for Asbestos.

### **STATE-ONLY APPLICABLE REQUIREMENTS**

None

### **FUTURE APPLICABLE REQUIREMENTS**

MACT AAAA - *National Emission Standards for Municipal Solid Waste Landfills* - May apply to the source when the NMOC emission rate is greater than or equal to 50 Mg per year (Based on

Tier2 sampling conducted on May 24, 2016, using annual waste tonnage through 2015, NMOC emissions from the landfill are calculated to be 54.1 Mg/yr. Based on this result, retesting may be conducted within six months as allowed under 40 CFR Part 60.757(c)(1).)

40 CFR 60, Subpart Cf – *Emission Guidelines and Compliance Times for Municipal Solid Waste Landfills* – May apply to the source upon approval of a state plan, as an existing source (construction, reconstruction, or modification was commenced on or before July 17, 2014.) Subpart Cf has a lower threshold for requiring the installation of a LFG collection and control system (GCCS) (34 Mg/yr) in addition to other requirements.

### **CONFIDENTIAL INFORMATION**

No confidential information request has been made. All portions of the Title V permit and application are available for public review.

### **PUBLIC PARTICIPATION**

The permit was on public notice in the Roanoke Times from  
December 1, 2016 to January 3, 2017 .