

**NORTH CAROLINA DIVISION OF
AIR QUALITY**

Air Permit Review

Permit Issue Date:

Region: Mooresville Regional Office
County: Gaston
NC Facility ID: 3600339
Inspector's Name: Matthew J. Wilson
Date of Last Inspection: 12/02/2015
Compliance Code: 3 / Compliance - inspection

Facility Data	Permit Applicability (this application only)
<p>Applicant (Facility's Name): Gaston County Landfill - Hardin Site</p> <p>Facility Address: Gaston County Landfill - Hardin Site 3155 Philadelphia Church Road Dallas, NC 28034</p> <p>SIC: 4953 / Refuse Systems NAICS: 562212 / Solid Waste Landfill</p> <p>Facility Classification: Before: Small After: Title V Fee Classification: Before: Small After: Title V</p>	<p>SIP: 15A NCAC 2D .0524, 2D .1111 NSPS: Subpart JJJJ NESHAP: Subpart ZZZZ PSD: N/A PSD Avoidance: N/A NC Toxics: N/A 112(r): N/A Other: N/A</p>

Contact Data			Application Data
Facility Contact	Authorized Contact	Technical Contact	<p>Application Number: 3600339.15A Date Received: 10/23/2015 Application Type: Modification Application Schedule: TV-1st Time</p> <p style="text-align: center;">Existing Permit Data</p> <p>Existing Permit Number: 09884/R03 Existing Permit Issue Date: 03/26/2013 Existing Permit Expiration Date: 02/28/2018</p>
Marcie Smith Solid Waste & Recycling Administrator (704) 922-0267 3155 Philadelphia Church Road Dallas, NC 28034	Ray Maxwell, P.E. Public Works Director (704) 862-7551 PO Box 1578 Gastonia, NC 28503	Ray Maxwell, P.E. Public Works Director (704) 862-7551 PO Box 1578 Gastonia, NC 28503	

Total Actual emissions in TONS/YEAR:

CY	SO2	NOX	VOC	CO	PM10	Total HAP	Largest HAP
2011	0.6900	2.14	0.1200	2.52	0.8200	0.8139	0.7860 [Hydrogen chloride (hydrochlori)]

<p>Review Engineer: Lori Ann Phillips</p> <p>Review Engineer's Signature: _____ Date: _____</p>	<p style="text-align: center;">Comments / Recommendations:</p> <p>Issue: 09884/T04 Permit Issue Date: Permit Expiration Date:</p>
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1. Purpose of Application:

Gaston County Landfill – Hardin Site (Gaston County Landfill) is located at 3155 Philadelphia Church Road in Dallas, Gaston County, NC and has submitted a permit modification application to have both their landfill permit (09884R03) and the Gaston County Green Energy Park's permit (10047R00) combined into one first time Title V permit. The permit modification application was received at the Mooresville Regional Office on October 21, 2015 and at the Raleigh Central Office on October 23, 2015. A

request for a BACT analysis was also received at the same time; however, the BACT review was conducted first and was completed on February 4, 2016 under separate cover. A Gaston County Green Energy Park permit renewal, R01, was issued with the new BACT limits in the interim so that that facility could perform stack testing and demonstrate compliance.

2. Facility Description:

Gaston County Landfill is an active municipal solid waste landfill that is currently permitted for two flares that combust landfill gas collected by the landfill gas collection and control system (GCCS). Gaston County Green Energy Park is located across the road from the landfill and is permitted for three landfill gas-fired gensets. Gaston County owns all of the equipment at both sites and both existing permits shall be consolidated into one permit through this modification. The Hardin Site identification (3600339) shall be retained.

3. Application Chronology:

October 21, 2015	Mooresville Regional Office received the permit modification application.
October 23, 2015	Application received at RCO. The application package included all necessary forms, authorized signature on Form A1, and the zoning consistency determination. The application was missing an authorized signature on Form E5 and the permit fee of \$918.
October 26, 2015	An acknowledgement letter was sent to Ray Maxwell, P.E. indicating that the application was incomplete (missing fee).
November 6, 2015	Received Mooresville Regional Office comments on the permit application via email.
November 12, 2015	Received check for \$918 at the RCO. Check #708818.
January 27, 2016	Emailed Ray Maxwell, facility authorized representative, to request that Form E5 be signed and submitted.
February 3, 2016	Received an email response from Ray Maxwell indicating that Form E5 will be submitted to DAQ soon.
February 10, 2016	Emailed Ray Maxwell to request information regarding NMOC emission rate for the landfill to determine applicability of NESHAP Subpart AAAA.
February 11, 2016	Received email (attached) from Ray Maxwell that included data to show that the facility will not exceed 50 Mg/year NMOCs in the next 5 years. The data show an approximate

increase of 1.0 Mg/year NMOC emission rate. The current estimates would result in an NMOC emission rate of approximately 44.6 for 2021, the anticipated expiration date of this permit.

4. New Equipment/Changes in Emissions and Regulatory Review:

New Equipment: This first time Title V permit will combine the permitted equipment list from the Gaston County Landfill permit and the Gaston County Green Energy Park Permit. There is no new permitted equipment associated with this permit modification. The following equipment shall be included on the permitted equipment list:

Emission Source ID	Emission Source Description	Control System ID	Control System Description
ES-1 (NSPS Subpart WWW)	Municipal solid waste landfill facility	CD-GCCS*	Landfill gas collection system
		CD-3	landfill gas-fired open flare (56.83 million Btu per hour maximum heat input based on methane gas)
		CD-4	landfill gas-fired open flare (5.8 million Btu per hour maximum heat input based on methane gas)
ES-2 (NSPS,NESHAP)	landfill gas-fired internal combustion engine powering electrical generator (1,996 horsepower and 1,421 kilowatt maximum capacity)	N/A	N/A
ES-3 (NSPS,NESHAP)	landfill gas-fired internal combustion engine powering electrical generator (1,996 horsepower and 1,421 kilowatt maximum capacity)	N/A	N/A
ES-4 (NSPS,NESHAP)	landfill gas-fired internal combustion engine powering electrical generator (1,996 horsepower and 1,421 kilowatt maximum capacity)	N/A	N/A

*Since the landfill gas collection system was installed voluntarily, the regulations associated with the collection system do not apply to this facility.

The previous Green Energy Park permit listed the three engines as ES-1, ES-2, and ES-3. The emission source IDs shall be updated in the permit to ES-2, ES-3, and ES-4, respectively, such that the landfill itself can retain the source ID ES-1.

Neither the current landfill nor the Green Energy Park permit include any insignificant/exempt sources. In the permit application, the facility submitted Form D4 and listed a number of insignificant/exempt sources. The following sources shall be included on the insignificant activities summary attachment to the permit. There were

additional sources listed on Form D4 that were not included in the table below because they did not appear to contribute to facility-wide air emissions.

Emission Source ID No.	Emission Source Description
IES-1	Two (2) leachate storage tanks (250,000 gallon capacity, each)
IES-2	Oil storage tank (1,000 gallon capacity)
IES-3	Waste oil tank (300 gallon capacity)
IES-4	Waste oil furnace (0.0175 million Btu per hour maximum heat capacity)

Regulatory Review: This facility is subject to the following regulations: 2D .0516, 2D .0521, 2D .0524 (Subpart WWW), 2D .0524 (Subpart JJJJ), 2D .1111 (Subpart ZZZZ), 2D .1806, and State BACT limits.

2D .0516 – Sulfur Dioxide Emissions from Combustion Sources – Sulfur dioxide emissions from the flares (CD-3 and CD-4) and LFG engines (ES-2, ES-3, and ES-4) shall not exceed 2.3 pounds per million Btu. Continued compliance is expected.

2D .0521 – Visible Emissions Control Requirement – Visible emissions from the combustion sources shall not be more than 20 percent opacity when averaged over a 6-minute period. Compliance is expected and will be verified during facility inspections.

2D .0524 – New Source Performance Standards Subpart WWW – This landfill is subject to 40 CFR Part 60, Subpart WWW because the facility was built after May 30, 1991. Due to the capacity of the landfill being greater than 2.5 million Mg, the facility is subject to Title V permitting. The facility, however, is not required to install a GCCS per §60.752 since their NMOC emissions are below the 50 Mg threshold (39.6 Mg per year for 2016). Because the GCCS was installed voluntarily, the landfill is not subject to §63.753, *Operational Standards for Gas Collection System*.

The facility shall determine the NMOC emission rate according to the procedures set forth in the permit stipulation and take the appropriate actions as necessary. The facility shall keep at least 5 years of design capacity reports, the current amount of solid waste in-place, and the year-by-year waste acceptance rate. The facility shall submit an annual NMOC emission rate report by January 30 of each calendar year unless the estimated NMOC emission rate is less than 50 Mg per year in each of the next 5 consecutive years. In that case, the facility may elect to submit an estimate of the NMOC emission rate for the next 5-year period in lieu of the annual report.

2D .0524 – New Source Performance Standards Subpart JJJJ – The facility shall continue to comply with this regulation for the LFG-fired engine-generators (ES-2, ES-3, and ES-4) and follow all testing, recordkeeping, reporting, and notification requirements. The exhaust emissions standards for the engines continue to be the following:

- CO: 5.0 g/HP-hr or 610 ppmvd at 15% O₂
- NO_x: 2.0 g/HP-hr or 150 ppmvd at 15% O₂
- VOCs: 1.0 g/HP-hr or 80 ppmvd at 15% O₂

2D. 1111 – National Emissions Standards for Hazardous Air Pollutants Subpart ZZZZ – The facility maintains compliance with this regulation by staying in compliance with NSPS Subpart JJJJ. No recordkeeping or reporting is required.

2D .1806 – Control and Prohibition of Odorous Emissions – The facility shall continue to comply with this permit stipulation. Compliance is expected and will be verified during facility inspections.

State BACT Limits - Gaston County Green Energy Park was issued a revised permit with BACT limits in permit 10047R01. The BACT limits established for the facility are as follows:

- Carbon Monoxide emissions shall not exceed 4.0 g/hp-hr.
- Nitrogen Oxide emissions shall not exceed 1.5 g/hp-hr.
- PM₁₀/PM_{2.5}, Sulfur Dioxide, Volatile Organic Compounds, Mercury, and Lead shall be controlled from each engine using good combustion practices and the burning of landfill gas in the engine.

Continued compliance is expected and will be verified through stack testing.

5. NSPS, NESHAPS, MACT, RACT, PSD, and Attainment Status:

This facility has three engines (ES-2, ES-3, and ES-4) that are subject to NSPS Subpart JJJJ – Standards of Performance for Stationary Spark Ignition Combustion Engines and NESHAPS Subpart ZZZZ – National Emission Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines. The most current versions of the permit stipulations for Subparts JJJJ and ZZZZ shall be placed in the new permit.

The landfill (ES-1) is subject to NSPS Subpart WWW – Standards of Performance for Municipal Solid Waste Landfills. At the time of this permit modification, data was submitted that indicates that the landfill is not yet required to install a landfill gas collection and control system (GCCS). When the landfill NMOC emission rate exceeds 50 Mg per year, a GCCS shall be required. Data received via email on February 11, 2016 included a copy of the projected 5-year emissions inventory prepared for the site for 2014-2018. The observed annual increased in NMOC emission rate from the inventory is approximately 1.0 Mg per year. This current permit, once issued, shall expire sometime in 2021, resulting in an estimated NMOC emission rate of approximately 44.6 Mg per year. This value is under the limit of 50 Mg per year. Therefore, a GCCS is not expected to be required at this facility for at least the next five years. Please note that the facility voluntarily installed and operates a GCCS to provide destruction of methane and recover energy.

The landfill (ES-1) is not yet subject to NESHAP Subpart AAAA – National Emission Standards for HAP – Municipal Solid Waste Landfills since the landfill does is not yet required to install a GCCS. However, as mentioned above, the facility voluntarily installed and operates a GCCS.

Gaston County Landfill – Hardin Site is a PSD minor source. The Charlotte-Gaston-Rock Hill area is now listed as being in attainment for ozone. RACT does not apply.

6. Facility Wide Air Toxics:

The facility submitted an air toxics review in their application. Benzene, hydrogen sulfide, and vinyl chloride were noted to exceed the NC TPERs; however, no modeling will be required at this time due to 15A NCAC 02Q .0706 since this permit application does not represent a request for modification of the landfill or any equipment associated with it. Should the facility submit a permit application to modify the GCCS (which is currently voluntary) or add/modify another emission source, toxics will be reevaluated and modeled, if found necessary.

7. Compliance Status:

The most recent inspection for both sites being consolidated into one permit was conducted on January 14, 2015. Compliance was indicated. Gaston Green Energy Park was issued an NRE on May 13, 2015 for several violations including failure to apply for a Title V permit, failure to conduct stack tests required by NSPS, and failure to submit an application for BACT. The enforcement is currently pending. Compliance with submission of a BACT application has been satisfied. Compliance with application for a Title V permit is being satisfied with this permit application.

8. Facility Emissions Review:

The emissions summary in the table below is based on the data provided in the permit application and appears to be a fair representation of emissions at the facility.

Facility Emissions Summary

Pollutant	Potential Emissions Before Controls (tpy)	Potential Emissions After Controls (tpy)
TSP	8.6	8.6
PM-10	8.6	8.6
SO₂	2.1	2.1
NO_x	85.0	85.0
VOC	20.5	5.6
CO	226.0	226.0

Based on the emissions summary, this facility is correctly classified as a Title V.

9. Changes to the Permit:

There are no changes to the permit, as this is a first time Title V permit, 09884T04.

10. Other Considerations:

- A P.E. seal was included with this application.
- A zoning consistency determination was included with this application.

- This facility is not subject to the 112(r) program as it does not store any of the listed chemicals in quantities above the program thresholds.

11. Public Notice Review:

A 30-day public notice and 45-day EPA review period is required for this permit renewal/First Time Title V.

The 30-day public notice period was from XX through XX.

The EPA 45-day review period was from XX through XX.

12. Conclusions, Comments, and Recommendations:

This air permit application for the Gaston County Landfill – Hardin Site, located at 3155 Philadelphia Church Road, Dallas, North Carolina, has been reviewed by the DAQ to determine compliance with all procedures and requirements. The Mooresville Regional Office has made comments on the draft permit. Continued compliance with this air permit is expected. Recommend issuance of air permit No. 09884T04.