NORTH CAROLINA DIVISION OF AIR QUALITY

Application Review

Issue Date: TBD

Region: Raleigh Regional Office
County: Person
NC Facility ID: 7300079
Inspector's Name: Taylor Easter
Date of Last Inspection: 9/20/2023
Compliance Code: 3 / Compliance - inspection

Facility Data

Applicant (Facility's Name): Upper Piedmont Environmental Landfill

Facility Address:
Upper Piedmont Environmental Landfill
9650 Oxford Road
Rougemont, NC 27572

SIC: 4953 / Refuse Systems
NAICS: 562212 / Solid Waste Landfill

Facility Classification: Before: Title V **After:** Title V
Fee Classification: Before: Title V **After:** Title V

Permit Applicability (this application only)

SIP: 15A NCAC 02D .0516, 02D .0521, 02D .0524, 02D .1110, 02D .1111, 02D .1806, 02Q .0513
NSPS: N/A
NESHAP: 40 CFR 61 Subpart M, 40 CFR 63 Subpart AAAA
PSD: N/A
PSD Avoidance: N/A
NC Toxics: N/A
112(r): N/A
Other: 40 CFR 62 Subpart OOO

Contact Data

Facility Contact	Authorized Contact	Technical Contact
Matt Einsmann, P.E. Environmental Manager (919) 354-3227 5111 Chin Page Road Durham, NC 27703	Shane Walker Area President (980) 430-8511 2440 Whitehall Park Drive, Suite 800 Charlotte, NC 28273	Matt Einsmann, P.E. Environmental Manager (919) 354-3227 5111 Chin Page Road Durham, NC 27703

Application Data

Application(s) Numbers: 7300079.23A & 7300079.21A
Date Received: 03/28/2023 and 12/8/2021
Application Type: Renewal, Reopen for Cause
Application Schedule: TV-Renewal

Existing Permit Data
Existing Permit Number: 09847/T03
Existing Permit Issue Date: 10/02/2018
Existing Permit Expiration Date: 09/30/2023

Total Actual emissions in TONS/YEAR:

CY	SO2	NOX	VOC	CO	PM10	Total HAP	Largest HAP
2021	2.80	12.40	5.41	56.30	2.99	2.88	1.01 [Hydrogen chloride (hydrochlori]
2020	2.70	12.30	4.51	56.10	2.99	2.56	1.00 [Hydrogen chloride (hydrochlori]
2019	2.60	11.60	4.79	53.10	2.82	2.60	0.9510 [Hydrogen chloride (hydrochlori]
2018	1.31	12.67	5.70	57.76	3.11	3.19	1.44 [Hydrogen chloride (hydrochlori]
2017	1.48	14.40	5.52	65.64	3.53	3.33	1.64 [Hydrogen chloride (hydrochlori]

Review Engineer: Massoud M. Eslambolchi

Review Engineer's Signature: **Date:**

Comments / Recommendations:
Issue: 09847/T04
Permit Issue Date: TBD
Permit Expiration Date: TBD

1. **Purpose of Application**

Upper Piedmont Environmental Landfill is an existing Municipal Solid Waste (MSW) landfill owned and operated by Republic Services of North Carolina, LLC, located in Rougemont, Person County. The facility timely submitted application number 7300079.23A, received on 03/28/2023, and requested renewal of the current air permit with no modifications. Application number 7300079.21A "Reopen For Cause" was received on 12/8/2021. These two applications will be consolidated and they both will go through a 30-day public notice and 45-day EPA reviews prior to the final issuance. Also, because the North Carolina Rules (15A NCAC 02D .1700) for existing landfills have not yet been approved in the State Implementation plan by the US EPA (at the time of this Permit Approval), the Federal regulations for existing landfills as codified in 40 CFR 62, Subpart OOO will be placed into the permit replacing the previous 40 CFR 60, Subpart WWW regulations.

Application No. 7300079.21A "Reopen For Cause":
In the February 14, 2022, Federal Register, the U.S. Environmental Protection Agency (EPA) finalized technical revisions and clarifications for the National Standards for Hazard Air Pollutants (NESHAP, Subpart AAAA) for MSW Landfills established in the March 26, 2020, final rule. This final rule also amended the MSW Landfill's NSPS regulations in 40 CFR Part 60, Subpart XXX, to clarify and align the timing of compliance for certain requirements involving the installation of a gas collection and control systems (GCCS) under related MSW landfill rules. Additionally, EPA revised the definition of Administrator in the MSW Landfills Federal Plan that was promulgated on May 21, 2021 to clarify who has the authority to implement and enforce the applicable requirements. The final rule was effective February 14, 2022.

2. Facility Description

The Upper Piedmont Environmental Landfill is an active MSW landfill operating under Solid Waste Permit No. 7304. The landfill was originally opened in 1997 and accepts waste from various counties within a 60-mile radius of the facility, including Durham County, Vance County, and from the State of Virginia. The landfill covers approximately 976 acres, and accepts approximately 660 tons of waste per day, or 240,900 tons of waste annually. The facility meets the daily cover requirements of the Solid Waste permit, and periodically uses a proprietary material called "Posi-Shell" that is mixed with water and is blown onto the working face of the landfill for alternate daily cover. This material forms a thin coat of concrete-like material that helps protect the fill from wind, replaces the daily soil cover that takes up much more volume, and uses an additive to help further reduce odors. An intermediate cover of soil is placed over the waste material when the crew moves temporarily on to another portion of the landfill, and the soil is seeded to provide short-term vegetative cover. Typically, each layer of new waste is compacted to approximately 12 feet before the crew moves onto a new area. Within approximately 12 months, another 12-foot lift may be added again to that same cell. In this way, all the cells in the landfill rise together. The facility also operates a number of portable sources, powered by diesel-fired engines, which are categorically exempt under 15A NCAC 02Q .0503(7)(a).

3. Permit History Since Last Renewal and Application Chronology

10/10/2021 DAQ sent letter of Re-open for Cause to the facility.

12/08/2021 DAQ generated Re-Open for Cause Application (No. 7300079.21A)

03/23/2023 Renewal application (7300079.23A) received by DAQ.

08/15/2023 Pre-Draft for supervisory review.

10/06/2023 Draft permit and review sent to Facility, SSCB and Regional Office.

10/17/2023 Mr. Einsmann of Republic Servies submitted comments on the draft permit on behalf of the Upper Piedmont Environmental Landfill. Primarily the facility's comments/concerns relate to the compliance with federal regulations for landfill where in this case both MACT AAAA and 40 CFR 62 Subpart OOO rules apply. The recently amended NESHAP (MACT AAAA) for landfills offers consolidated compliance with other landfill rules in overlapping circumstances under the operating standards and monitoring. In a conversation with Mr.

Einsmann, it was clarified that while the newly revised 40 CFR 62 Subpart OOO provides for compliance with NESHAP MACT AAAA as an alternative, the facility shall maintain compliance with that rule and may not return to the other provisions. Section monstrated compliance within the context of a given regulation once initiated and that it is not permissible to revert to the other regulation. Section 2.1.A.4 (Page 22) of this TV Permit includes the following language form the amended regulations: "Each owner or operator must comply with the provisions for the operational standards in this section (as well as the provisions in 40 CFR 62.16720 and 40 CFR 62.16722), or the operational standards in 40 CFR 63.1958 of this chapter (as well as the provisions in 40 CFR 63.1960 and 40 CFR 63.1961 of this chapter), or both as alternative means of compliance, for an MSW landfill with a gas collection and control system used to comply with the provisions of 40 CFR 62.16714(b) and (c). Once the owner or operator begins to comply with the provisions of 40 CFR 63.1958 of this chapter, the owner or operator must continue to operate the collection and control device according to those provisions and cannot return to the provisions of this section.

11/14/2023 Draft Permit & Review documents sent for Public Notice.

12/14/2023 30-Day Public Comment period ends.

12/29/2023 45-Day EPA review periods ends.

Xxxxxx Air Quality Permit issued.

4. Table of Changes to Existing Permit No. 09847T03

The following changes were made to Air Permit No. 09847T03:*

Page No.	Section	Description of Changes
------	Cover letter	● Updated letterhead and permit using new permit shell ● Updated permit revision numbers and dates throughout
------	Cover letter	● Added page containing "Notice Regarding the Right to Contest A Division of Air Quality Permit"
------	Cover letter	● Revised the Summary of Changes to the Permit page
1	1st Page of Permit	● Changed number, changed "Replaces Permit" number ● Changed effective date and issue date of the Permit ● Revised the application number and complete application date
Page 3	List of Acronyms	● Added list to the front of the permit
Page 5	Section 2.1	● Removed NSPS WWW citation for NMOC row and replaced with Federal regulations for existing landfills pursuant to 40 CFR 40 CFR 62, Subpart OOO
Page 5	Section 2.1	● Removed NSPS Subpart WWW applicability from table of regulated pollutants
Page 6	Section 2.1 A.3	● Updated MACT AAAA requirements
Page 18	Section 2.1 A.4	● Added 40 CFR 62, Subpart OOO requirements for existing municipal solid waste landfills
Page 45	Section 2.1 A.5	● Moved 40 CFR 61, Subpart M requirements to Section 2.1 A.5
Page 48	Section 3	● Added new Section 3 for Insignificant Activities
Page 49	Section 4	● Added new Section 4 for General Conditions (Updated version 7.0, 8/21/2023)

* This list is not intended to be a detailed record of every change made to the permit but a summary of those changes.

5. Changes in Equipment

There are no changes to the facility's permitted emission sources or control devices as part of this application. TVEE has been updated.

The facility's permitted emission sources are as follows:

Emission Source ID No.	Emission Source Description	Control Device ID No.	Control Device Description
ES-01 MACT Subpart AAAA 40 CFR 62, Subpart OOO 40 CFR 61, Subpart M	Municipal solid waste landfill	CD-GCCS1CD-02	One landfill gas collection and control system including: One landfill gas-fired open flare (3000 scfm capacity)

The facility's insignificant/exempt activities are as follows:

Emission Source ID No.	Emission Source Description
IES-03A	One leachate storage tank (156,000 gallon capacity)
IES-03B	One leachate storage tank (156,000 gallon capacity)
IES-07	New and used oil storage tanks
IES-08	New and used hydraulic fluid tanks
IES-09	Storage drums (fifty-five gallon capacity)

6. Regulatory Review

The landfill and its associated control equipment are subject to the following regulations, in addition to the requirements in the General Conditions Permit language has been updated and expanded as needed.

The facility is currently subject to the following air quality regulations in addition to the General Conditions:

- 15A NCAC 02D .0516: Sulfur Dioxide Emission from Combustion Sources
- 15A NCAC 02D .0521: Control of Visible Emissions
- 15A NCAC 02D .1111: Maximum Achievable Control Technology, 40 CFR 63, Subpart AAAA
- 40 CFR 60 Subpart WWW: Standards of Performance for Municipal Solid Waste Landfills That Commenced Construction, Reconstruction, or Modification on or After May 30, 1991, but Before July 18, 2014 (This regulation will be removed)
- 15A NCAC 02D .1806: Control and Prohibition of Odorous Emissions
- 15A NCAC 02D .1110: National Emission Standards; 40 CFR 61, Subpart M (Asbestos)

All these regulations will remain in the permit except 40 CFR 60, Subpart WWW.

- 15A NCAC 02D .0524: New Source Performance Standards "40 CFR 60, Subpart WWW" will be removed from the permit because it no longer applies and will be replaced with the Federal regulation 40 CFR 62, Subpart OOO because the State Plan for Landfills has not been approved by the US EPA.

7. NSPS, Federal Regulations, NESHAP, PSD, 112(r), CAM & Attainment Status

- **NSPS** –

  - ✓ The MSW landfill (ID No. ES-01) is no longer subject to 40 CFR 60, Subpart WWW "Municipal Solid Waste Landfills" since the facility is now considered an existing source under 40 CFR Subpart Cf "Emission Guidelines and Compliance Times for Municipal Solid Waste Landfills" because the landfill has accepted waste after November 8, 1987, and was constructed prior to July 17, 2014. The NSPS WWW regulations will be removed from the permit and replaced with the Federal Landfill regulations (40 CFR 62, Subpart OOO) for existing facilities since the North Carolina State Plan for existing Landfills has not been approved by the US EPA, as of this approval.

  - ✓ The MSW landfill (ID No. ES-01) is NOT subject to 40 CFR 60, Subpart XXX "Municipal Solid Waste Landfills that Commenced Construction, Reconstruction or Modification after July 17, 2014," since it has not been reconstructed or modified after July 17, 2014.

  - ✓ Engines associated with portable sources (ID Nos. IES-10, IES-11, and IES-12) are NOT subject to 40 CFR 60, Subpart IIII "Stationary Compression Ignition Internal Combustion Engines," because these engines are not stationary engines.

- **NESHAP** –

  - ✓ The MSW landfill (ID No. ES-01) is subject to 40 CFR 63, Subpart AAAA "Municipal Solid Waste Landfills," because it has a design capacity equal to or greater than 2.5 million Mg and 2.5 million m^3, and has estimated uncontrolled NMOC emissions equal to or greater than 50 Mg/yr as calculated using the Tier 2 methodology of NSPS Subpart WWW as of 2009.

  - ✓ The MSW landfill (ID No. ES-01) is subject to 40 CFR 61 Subpart M, "National Emission Standard for Asbestos; Standard for Active Waste Disposal Sites" [40 CFR §61.154], since it is an active asbestos waste disposal site as defined in 40 CFR §61.141. A permit condition for this NESHAP has been included in revision T03.

  - ✓ Engines associated with portable sources (ID Nos. IES-10, IES-11, and IES-12) are NOT subject to 40 CFR 63, Subpart ZZZZ "Stationary Reciprocating Internal Combustion Engines," because these engines are not stationary engines.

- **PSD –** The facility's potential emissions do not exceed PSD permitting thresholds of 250 tons per year for any criteria pollutant.

  - ✓ Person County has triggered increment tracking under PSD for PM_{10} and SO_2. This permit renewal will neither expand nor consume any increments.

- **112(r) –** The facility does not store any of the listed 112(r) chemicals in amounts that exceed the threshold quantities. Therefore, the facility is not required to maintain a written Risk Management Plan (RMP).

- **CAM –** Compliance Assurance Monitoring (CAM) does NOT apply since the sources are regulated by a NSPS and MACT that were proposed after November 15, 1990, and control the pollutants which would be subject to CAM.

- **Attainment status** – Person County is in attainment for all criteria pollutants.

- **40 CFR 62, Subpart OOO – Federal Regulations for Municipal Solid Waste Landfills:**

  This facility is subject to the Part 70 Title V program because the design capacity of the landfill is greater than or equal to 2.5 million megagrams and 2.5 million cubic meters. This landfill is considered an "existing" landfill because it has accepted waste since November 8, 1987, and the landfill commenced

construction, reconstruction, or modification on or before July 17, 2014. This existing landfill would be subject to the State Rules for North Carolina (as codified under 15A NCAC 02D .1700) for existing landfills if the rules were approved by the US EPA.

However, since the State Plan for North Carolina landfill rules for existing landfills has not yet been approved, the Federal rules pursuant to 40 CFR 62, Subpart OOO will apply until the rules in 15A NCAC 02D .1700 have been approved.

8. Other Regulatory Requirements

- A Zoning Consistency Determination is not required for this permit application.
- A P.E. Seal is not required for this permit application.
- There are no permit application fees required for this permit renewal application.

9. Emissions Review

Facility-wide potential emissions before control are follows:

Pollutant (tpy) / **Source**	PM_{10}	$PM_{2.5}$	SO_2	NOx	CO	VOC	Individual HAP (Toluene)	Total HAPs
Landfill Volume Emissions (ES-01)	--	--	--	--	--	23.94	4.24	12.44
Leachate Tanks (IES-03A & 03B)	--	--	--	--	--	0.68	--	0.68
Total	--	--	--	--	--	24.62	4.24	13.12

Facility-wide potential emissions after control are as follows:

Pollutant (tpy) / **Source**	PM_{10}	$PM_{2.5}$	SO_2	NOx	CO	VOC	Individual HAP (HCl)	Total HAPs
Landfill Volume Emissions (ES-01)	--	--	--	--	--	5.99	--	3.11
Landfill Gas Collection and Control System & Flare (CD-GCCS1 & CD-02)	6.70	6.70	11.88	27.13	123.67	0.80	3.07	3.50
Leachate Tanks (IES-03A & 03B)	--	--	--	--	--	0.68	--	0.68
Total	6.70	6.70	11.88	27.13	123.67	7.47	3.07	7.29

Landfill emissions:

Landfill volume emissions were calculated using the methane generation rate of 13,056,009 m^3/yr from the LandGEM output, and pollutant concentrations from AP-42 Chapter 2.4, November 1998; Section 10 contains an example of these calculations. The NMOC concentration used is 595 ppmv, and VOC emissions are assumed as 39% of NMOC emissions per AP-42 Chapter 2.4, November 1998. Post collection and control

potential emissions were calculated by applying a collection efficiency of 75% and a destruction efficiency of 98%.

Leachate Tank emissions:
These emissions were carried forward from calculations from the T00 permit revision since there have been no modifications to these sources.

Flare emissions:
Total sulfur emissions were estimated based on hydrogen sulfide emissions and were calculated using the methodology in AP-42 Chapter 2.4, and assuming a conservative concentration of 100 ppmv. The flare is assumed to have a control efficiency of 98% for hydrogen sulfide. VOC emissions for the flare are based on the maximum capacity of the flare, regardless of NMOC generation rate from the landfill, and 98% control efficiency.

Particulates, NOx, and CO emissions were calculated using the following emission factors:

PM: 17 lbs/10^6 ft^3 CH_4 (AP-42 2.4-5)
NOx: 0.068 lbs/mmBtu (AP-42 13.5-1 and Manufacturer Guarantee)
CO: 0.31 lbs/mmBtu (AP-42 13.5-2 and Manufacturer Guarantee)

The flare is rated for 91.08 million Btu/hr at 1,500 ft^3 CH_4 per minute (788.4 million ft^3 CH_4 per year), assuming a heating value of 506 Btu/ft^3.

Example:

$$\frac{788.4\ million\ ft^3 CH_4}{year} \times \frac{17\ pounds\ PM}{million\ ft^3 CH_4} \times \frac{1\ ton}{2{,}000\ pounds} = \frac{6.70\ tons\ PM}{year}$$

All particulate emissions from the combustion of landfill gas are considered as $PM_{2.5}$.

10. Air Toxics

The facility has triggered an air toxics demonstration in the past and submitted a dispersion modeling analysis in 2012 with permit renewal Application No. 7300079.13A. However, since the facility is subject to 40 CFR 63 Subpart AAAA, the permit contains neither a15A NCAC 02D .1100 nor a 15A NCAC 02Q .0711 toxics condition per NCGS 143-215.107(a)(5) and 15A NCAC 02Q .0702(a)(27).

Emissions projections were made using LandGEM with default NMOC and pollutant concentrations from the November 1998 revision of AP-42 Table 2.4-1, apart from hydrogen sulfide, for which the facility used 100 ppmv as the concentration rather than the 35.5 ppmv default, stating in a previous application that it is a "conservative industry value." This projection resulted in an estimated LFG generation rate of 26,112,017 m^3/yr (~1,754 scfm) through CY2024.

The following example calculation is for the emission of hydrochloric acid (HCl) created from the combustion of the chlorine compounds in the landfill gas-fired flare. The best methods to estimate emission are mass balance methods using site specific data on total chloride [expressed in ppmv as the chloride ion (Cl^-)]. [AP-42, Section 2.4.4.2 – Controlled Emissions]

- Current flare design rating = 3,000 ft^3/minute (or 84.9 m^3/min = 5,094 m^3/hour)
- Methane is only 50% of this gas stream (2,547 m^3/hour)
- Q_{Cl^-} = Emission rate of chloride ions, m^3/hour
- C_{Cl^-} = Concentration of chloride ions (42.0 ppmv, AP-42 default value)
- Multiplication factor for 50% methane concentration in landfill gas = 2.0
- Molecular weight of chloride ions = 35.45 g/mole

$$Q_{Cl^-} = 2.0 \times Q_{CH4} \times \left(\frac{C_{Cl^-}}{1 \times 10^6} \right) \qquad \text{(AP-42, Equation 3)}$$

$$Q_{Cl^-} = 2.0 \times 2{,}547 \frac{m^3}{hour} \times \left(\frac{42.0\ parts}{1 \times 10^6} \right) = \frac{0.21\ m^3}{hour}$$

The mass of the pre-combustion chloride ions present in the methane were found using Equation 4 of AP-42, Section 2.4.4.2.

$$UM_{Cl^-} = \frac{0.21\ m^3}{hour} \times \left[\frac{35.45\ g/gmole \times 1\ atm}{\frac{8.205 \times 10^{-5}\ m^3 - atm}{gmol - K} \times \frac{1{,}000\ g}{kg} \times (273 + 25^o C)\ K} \right] \times \frac{2.2\ lbs}{kg} = \frac{0.68\ lbs\ (Cl^-)}{hour}$$

To calculate the HCl from the chloride ions, Equation 10 of Section 2.4-8 was used.

$$HCl_{emissions} = UM_{Cl^-} \times \frac{\eta_{col}}{100} \times 1.03 \times \frac{\eta_{cnt}}{100}$$

Where:
UM_{cl} = Uncontrolled mass emission of Cl^- ions (0.68 lb Cl^- ions/hour)
η_{col} = Collection efficiency of the landfill gas collection system, percent (75%)*
η_{cnt} = Control efficiency of the landfill gas control flare (98%)*
* To calculate worst-case HCl emissions, the facility assumes that 100% of the generated Cl^- ions are collected and converted to HCl.

$$HCl_{emissions} = 0.68 \frac{lb}{hour} \times \frac{100}{100} \times 1.03 \times \frac{100}{100} = 0.70 \frac{lb}{hour}$$

The total emissions of other pollutants from the landfill and flare were calculated using AP-42 Section 2.4-6 Equation 5:

$$CM_p = \left[UM_p \times \left(1 - \frac{\eta_{col}}{100} \right) \right] + \left[UM_p \times \frac{\eta_{col}}{100} \times \left(1 - \frac{\eta_{cnt}}{100} \right) \right]$$

Where:
CM_p = Controlled mass emissions of pollutant
UM_p = Uncontrolled mass emission of pollutant
η_{col} = Collection efficiency of the landfill gas collection system, percent (75%)
η_{cnt} = Control efficiency of the landfill gas control flare (98%)

Example calculation for toxic air pollutant benzene (lb/yr):
Projected emission rate, using Equations 3 & 4, from the landfill for benzene = 350.5 lb/year

$$CM_{benzene} = \left[350.5 \frac{lb}{year} \times \left(1 - \frac{75}{100} \right) \right] + \left[350.5 \frac{lb}{year} \times \frac{75}{100} \times \left(1 - \frac{98}{100} \right) \right] = \frac{92.89\ lb}{year}$$

The facility provided calculations for flare emissions based on maximum flow rate through the flare, however the projected actual emissions were calculated using the LFG generation rate as estimated by LandGEM, with the exception of HCl which is generated by the flare. The projected actual toxic emissions through CY2024 and comparison to their respective Toxic Permitting Emission Rates (TPERs) from 15A NCAC 02Q .0711(a) are as follows:

Toxic Air Pollutant	Averaging Period	Landfill Volume Emission Rates	Flare Emission Rates	Total	TPER	Modeling Required?
1,1,1-Trichloroethane (methyl chloroform)	lb/day	0.10	6.19×10^{-3}	0.11	250	No
	lb/hr	4.29×10^{-3}	2.58×10^{-4}	4.55×10^{-3}	64	No
1,1,2,2-Tetrechloroethane	lb/yr	109.43	6.57	116.0	430	No
1,1-Dichloroethene (vinylidene chloride)	lb/day	0.031	1.86×10^{-3}	0.033	2.5	No
1,2-Dibromoethane (ethylene dibromide)	lb/yr	0.11	6.60×10^{-3}	0.12	27	No
1,2-Dicholoroethane (ethylene dichloride)	lb/yr	23.83	1.43	25.26	260	No
2-Butanone (MEK)	lb/day	0.82	0.049	0.87	78	No
	lb/hr	0.034	2.06×10^{-3}	0.036	22.4	No
4-Methyl-2-pentanone (MIBK)	lb/day	0.30	0.018	0.32	52	No
	lb/hr	0.013	7.53×10^{-4}	0.014	7.6	No
Acrylonitrile	lb/day	0.54	0.032	0.57	0.4	**YES**
	lb/hr	0.023	1.35×10^{-3}	0.024	0.22	No
Benzene	lb/yr	87.63	5.26	92.89	8.1	**YES**
Carbon disulfide	lb/day	0.071	4.27×10^{-3}	0.075	3.9	No
Carbon tetrachloride	lb/yr	0.36	0.022	0.38	460	No
Chlorobenzene	lb/day	0.045	2.71×10^{-3}	0.048	46	No
Chloroform	lb/yr	2.10	0.13	2.23	290	No
p-Dichlorobenzene	lb/hr	2.07×10^{-3}	1.24×10^{-4}	2.19×10^{-3}	16.8	No
Dichlorodifluoromethane	lb/day	3.05	0.18	3.23	5200	No
Dichlorofluoromethane	lb/day	0.43	0.026	0.46	10	No
Dichloromethane (methylene chloride)	lb/yr	713.44	42.81	756.25	1600	No
	lb/hr	0.081	4.90×10^{-3}	0.086	0.39	No
Ethyl mercaptan	lb/hr	9.49×10^{-3}	5.70×10^{-4}	0.010	0.025	No
n-Hexane	lb/day	0.91	0.055	0.97	23	No
Hydrogen Chloride	lb/hr	-----	0.70	0.70	0.18	**YES**
Hydrogen Sulfide	lb/day	5.48	0.33	5.81	1.7	**YES**
Mercury (alkyl)	lb/day	9.42×10^{-5}	2.83×10^{-4}	3.76×10^{-4}	1.3×10^{-3}	No
Mercury Vapor	lb/day	-----	5.65×10^{-6}	5.65×10^{-6}	0.013	No
Methanethiol (methyl mercaptan)	lb/hr	8.03×10^{-3}	4.82×10^{-4}	8.51×10^{-3}	0.013	No
Tetrachloroethylene (Perchloroethylene)	lb/yr	363.31	21.80	385.11	13000	No
Toluene	lb/day	5.83	0.35	6.18	98	No
	lb/hr	0.24	0.015	0.26	14.4	No
Trichloroethylene	lb/yr	217.63	13.06	230.69	4000	No
Trichlorofluoromethane	lb/hr	7.00×10^{-3}	4.20×10^{-4}	7.42×10^{-3}	140	No
Vinyl chloride	lb/yr	269.45	16.17	285.62	26	**YES**
Xylene	lb/day	2.07	0.044	2.11	57	No
	lb/hr	0.086	5.17×10^{-3}	0.091	16.4	No

Data regarding previously modeled emissions were retrieved from the modeling analysis submitted in 2012. Impacts at the property boundary vary linearly in relation to the emission rate, so the CY2024 impacts were calculated by scaling up from the initial emission rates.

The following impacts resulted from this analysis:

Toxic Air Pollutant	Averaging Period	Initially Modeled Emission Rates	Initial Model % AAL	Projected Actual Emission Rates Through CY2024	CY 2024 % AAL
Acrylonitrile	lbs/day	0.485	3.79%	0.57	4.5%
Benzene	lbs/yr	79.3	84.2%	92.89	98.6%
Hydrogen chloride	lbs/hr	0.469	0.003%	0.70*	0.004%
Hydrogen sulfide	lbs/day	1.76	0.683%	5.81	2.3%
Vinyl chloride	lbs/yr	245.4	6.31%	285.62	7.3%

* HCl emission rate is based on the maximum flow rate of the flare, regardless of the LFG generation rate of the landfill

None of the toxic air pollutants evaluated exceed their respective TPER or AAL, therefore, DAQ has determined that there is NOT an unacceptable risk to human health resulting from this modification.

11. Statement of Compliance

The latest compliance inspection conducted on 9/20/2023 by the DAQ Regional Office (RRO) indicated the facility was found to be operating in apparent compliance with their existing air quality permit.

12. Public Notice Review

A notice of the DRAFT Title V Permit shall be made pursuant to 15A NCAC 02Q .0521. The notice will provide for a 30-day comment period, with an opportunity for a public hearing. Consistent with 15A NCAC 02Q .0525, the EPA will have a concurrent 45-day review period. Copies of the public notice shall be sent to persons on the Title V mailing list and EPA. Pursuant to 15A NCAC 02Q .0522, a copy of each permit application, each proposed permit and each final permit shall be provided to EPA.

The 30-day public notice expires on: TBD
The EPA 45-day review expires on : TBD

13. Other Regulatory Considerations

Removal of the emergency affirmative defense provisions:
EPA has promulgated a rule (88 FR 47029, July 21, 2023), with an effective date of August 21, 2023, removing the emergency affirmative defense provisions in operating permits programs, codified in both 40 CFR 70.6(g) and 71.6(g). EPA has concluded that these provisions are inconsistent with the EPA's current interpretation of the enforcement structure of the CAA, in light of prior court decisions1. Moreover, per EPA, the removal of these provisions is also consistent with other recent EPA actions involving affirmative defenses2 and will harmonize the EPA's treatment of affirmative defenses across different CAA programs. As a consequence of this EPA action to remove these provisions from 40 CFR 70.6(g), it will be necessary for states and local agencies that have adopted similar affirmative defense provisions in their Part 70 operating permit programs to revise their Part 70 programs (regulations) to remove these provisions. In addition, individual operating permits that contain Title V affirmative defenses based on 40 CFR 70.6(g) or similar state regulations will need to be revised. Regarding NCDAQ, it has not adopted these discretionary affirmative defense provisions in its Title V regulations (15A NCAC 02Q .0500). Instead, DAQ has chosen to include them directly in individual Title V permits as General Condition (GC) J. Per EPA, DAQ is required to promptly remove such impermissible provisions, as stated above, from individual Title V permits, after August 21, 2023, through normal course of permit issuance.

1 NRDC v. EPA, 749 F.3d 1055 (D.C. Cir. 2014).
2 In newly issued and revised New Source Performance Standards (NSPS), emission guidelines for existing sources, and NESHAP regulations, the EPA has either omitted new affirmative defense provisions or removed existing affirmative defense provisions. See, e.g., National Emission Standards for Hazardous Air Pollutants for the Portland

Cement Manufacturing Industry and Standards of Performance for Portland Cement Plants; Final Rule, 80 FR 44771 (July 27, 2015); National Emission Standards for Hazardous Air Pol lutants for Major Sources: Industrial, Commercial, and Institutional Boilers and Process Heaters; Final Rule, 80 FR 72789 (November 20, 2015); Standards of Performance for New Stationary Sources and Emission Guidelines for Existing Sources: Commercial and Industrial Solid Waste Incineration Units; Final Rule, 81 FR 40956 (June 23, 2016).

14. Comments and Recommendations

This Renewal Permit for Upper Piedmont Env. Landfill in Rougemont, Person County, NC has been reviewed by DAQ to determine compliance with all procedures and requirements. DAQ has determined that this facility is complying or will achieve compliance, as specified in the permit, with all requirements that are applicable to the affected sources. The DAQ recommends the issuance of Air Permit No. 09847T04.