NORTH CAROLINA DIVISION OF AIR QUALITY

Application Review

Issue Date: Date needed

Region: Fayetteville Regional Office
County: Montgomery
NC Facility ID: 6200052
Inspector's Name: Joshua Loehman
Date of Last Inspection: 11/27/2023
Compliance Code: 3 / Compliance - inspection

Facility Data

Applicant (Facility's Name): Uwharrie Environmental Landfill

Facility Address:
Uwharrie Environmental Landfill
500 Landfill Road
Mount Gilead, NC 27306

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, 0521, 0524, .1110, .1111, and .1806
NSPS: 40 CFR 60, Subpart IIII
NESHAP: 40 CFR 61, Subpart M; 40 CFR 63, Subparts AAAA, ZZZZ, and CCCCCC
PSD: N/A
PSD Avoidance: 15A NCAC 02Q .0317
NC Toxics: N/A
112(r): N/A
Other: 40 CFR 62, Subpart OOO

Contact Data

Facility Contact

Mike Gurley
Environmental Manager
(704) 782-2004
5105 Morehead Road
Concord, NC 28027

Authorized Contact

William Maness
General Manager
(910) 576-3851
1137 Albemarle Road
Troy, NC 27371

Technical Contact

Mike Gurley
Environmental Manager
(704) 782-2004
5105 Morehead Road
Concord, NC 28027

Application Data

Application Number: 6200052.24A
Date Received: 08/15/2024
Application Type: Renewal
Application Schedule: TV-Renewal

Existing Permit Data
Existing Permit Number: 08826T13
Existing Permit Issue Date: 08/04/2023
Existing Permit Expiration Date: 02/28/2025

Total Actual emissions in TONS/YEAR:

CY	SO2	NOX	VOC	CO	PM10	Total HAP	Largest HAP
2023	0.19000	1.19	10.72	5.31	0.2900	5.35	1.83 [Toluene]
2022	0.1600	1.55	11.89	6.90	0.3800	3.72	1.32 [Toluene]
2021	0.1730	1.65	16.86	8.86	0.4000	5.26	1.89 [Toluene]
2020	0.1100	1.04	16.74	5.35	0.2400	5.16	1.88 [Toluene]
2019	0.1500	1.33	16.63	7.01	0.3100	5.16	1.87 [Toluene]

Review Engineer: Luke Mayer

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

Comments / Recommendations:
Issue 08826/T14
Permit Issue Date: Date needed
Permit Expiration Date: Date needed

1. Purpose of Application

Uwharrie Environmental Landfill currently holds Title V Permit No. 08826T13 with an expiration date of February 28, 2025, for a solid waste landfill facility in Mount Gilead, Montgomery County, North Carolina. This permit application is for a permit renewal without modification. The renewal application was received on August 15, 2024, or at least six months prior to the expiration date. Therefore, the existing permit shall not expire until the renewal permit has been issued or denied. All terms and conditions of the existing permit shall remain in effect until the renewal permit has been issued or denied.

2. Facility Description

Uwharrie Environmental Landfill (UEL) is owned and operated by Republic Services of North Carolina, and consists of a closed, unlined municipal solid waste (MSW) landfill ("Montgomery County Landfill") containing 1.4 million tons of municipal solid waste and a Subtitle D, lined landfill with a capacity of 11.1 million tons. Presently, most of the landfill gas (LFG) generated by the landfill is sent off-site to the Uwharrie Mountain Renewable Energy (UMRE) plant across the street. The UMRE plant is a separate facility owned and operated by DTE Energy. The landfill only flares the small amount of gas not used by the energy plant. This landfill is subject to the Federal Requirements of MSW Landfills Federal Plan (40 CFR 62, Subpart OOO), 40 CFR 60, Subpart IIII, and 40 CFR 63, Subpart AAAA and ZZZZ.

The facility is a Title V facility because the landfill has a design capacity greater than 2.5 million megagrams and 2.5 million cubic meters, has demonstrated that the NMOC emission rate of the facility exceeds 50 megagrams per year, and because it is subject to 40 CFR 60 and 63 pursuant to 15A NCAC 02Q .0502(2) and (4). This facility is also required to hold a Part 70 permit under 40 CFR 62.16711(e).

3. History/Background/Application Chronology

History/Background

March 4, 2020	TV permit renewal issued. Air Permit No. 08826T12 was issued on March 4, 2020, with an expiration date of February 28, 2025. *(See Joshua L. Harris' TV review for permit No. 08826T12, dated February 28, 2025)*
August 4, 2024	Air Permit No. 08826T13 was issued due to the previous issuance being reopened for cause. This reopening allowed the DAQ to address necessary updates to 40 CFR 63, Subpart AAAA and associated language in the permit, and replace state landfill-related conditions with rules under 40 CFR 62, Subpart OOO, as the EPA had not yet approved North Carolina's state-level regulations. *(See Massoud "Max" Eslambolchi's TV review for permit No. 08826T13, dated August 4, 2024)*

Application Chronology

August 15, 2024	Received permit application 6200052.24A for renewal.
August 15, 2024	Sent acknowledgment letter indicating that the application for permit renewal was complete.
October 17, 2024	Draft permit and review forwarded to Supervisor Rahul Thaker for comments.

November 15, 2024	Comments received from Supervisor. Additional clarification needed in the statement of basis for 40 CFR 60, Subpart WWW non-applicability and formatting changes needed in the permit for the conditions for 40 CFR 62, Subpart OOO. Otherwise, some editorial changes needed.
December 2, 2024	Draft permit and review forwarded to applicant, SSCB, and regional office for comments. PFAS questionnaire included along with draft documents.
December 9, 2024	Completed PFAS questionnaire received from facility technical contact Mr. Mike Gurley. The responses to the questionnaire can be found in Attachment 1 to this technical review.
December 10, 2024	Samir Parekh of the SSCB indicated via email that he had no comments on the draft permit or permit review.
December 10, 2024	Facility technical contact Mr. Mike Gurley indicated via email that he had no comments on the draft permit or draft review.
December 16, 2024	Engineer Joshua Loehman from the Fayetteville Regional Office indicated via email that they had no comments on the draft permit or permit review.
date	Draft permit and permit review forwarded to public notice via DAQ website.
date	Public comment period ends. Comments were/were not received.
date	EPA comment period ends. Comments were/were not received.
date	Permit issued.

4. Permit Modifications/Changes and TVEE Discussion

The following table describes the modifications to the current permit as part of the renewal process. This summary is not meant to be an exact accounting of each change but a summary of those changes.

Page(s)	Section	Description of Changes
Cover letter and throughout permit	--	• Updated all dates and revision numbers • Reformatted permit in accordance with current TV permitting shell
6	2.1 A.3	• Switched the order of Sectio n3 and 4 (conditions for 15A NCAC 02D .1110 and .1111). Condition for .1110 is now found in Section 2.1 A.3 and condition for .1111 is now found in Section 2.1 A.4
8	2.1 A.4.k	• Removed reference to control device “CD-Treatment” and replaced with control device “GCCS-2”
19	2.1 A.5	• Moved the condition for odor control to Section 2.1 A.5 (was Section 2.1 A.6). Condition for PSD Avoidance (15A NCAC 02Q .0317) is now found in Section 2.1 A.6

Page(s)	Section	Description of Changes
20	2.1 A.7	• Reformatted Section 2.1 A.7 (conditions for 40 CFR 62, Subpart OOO) in accordance with current TV permitting shell standards • Switched the order of "recordkeeping" requirements (now 2.1 A.7.xx through 2.1 A.7.ggg) and "reporting" requirements (now 2.1 A.7.hhh through 2.1 A.7.yyy) • Added compliance statements for test methods and procedures (2.1 A.7.cc through 2.1 A.7.gg, compliance provisions (2.1 A.7.hh through 2.1 A.7.mm), monitoring (2.1 A.7.nn through 2.1 A.7.ww), and recordkeeping (2.1 A.7.xx through 2.1 A.7.ggg)
47	2.1 A.8	• Added PFAS disclosure condition under 15A NCAC 02Q .0308(a)(1) and 15A NCAC 02Q .0309(b)
49	4	• Updated General Conditions to most recent version (Version 8.0, dated 07/10/2024)

This permit renewal is being processed without modification, and no changes to the Title V Equipment Editor are needed.

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 decisions[1]. Moreover, per EPA, the removal of these provisions is also consistent with other recent EPA actions involving affirmative defenses[2] 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.

5. Regulatory Review

[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 Pollutants 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).

Uwharrie Environmental Landfill is subject to the following regulations. The facility's equipment and operations have not changed since the last renewal in 2019. The permit was updated to reflect the most current stipulations for all applicable regulations, where necessary.

15A NCAC 02D .0516: Sulfur Dioxide Emissions from Combustion Sources – The facility's two landfill gas-fired open flares **(ID Nos. CD-01** and **CD-02)** are subject to this rule. For the purposes of this rule, landfill gas is considered similar to natural gas. Both flares will be subject to a flat limit of 2.3 lb of SO_2 per million Btu heat input.

For landfill gas (LFG) combustion in the flares, using AP-42 Chapter 2.4, Equations 3, 4, and 7, the SO_2 emission rate was determined to be 0.030 lb per million Btu heat input based on both open flares' total maximum capacity of 182.16 million Btu per hour, 6000 scfm and assuming a heat value of 506 Btu per ft^3 of LFG combusted (see calculations below). This estimated emission rate is well below the sulfur dioxide regulatory threshold limit. Continued compliance is expected.

To calculate potential SO_2 emissions: AP-42 Chapter 2.4 was used along with information submitted by the facility in previous applications:

- Total flare design rating = 6,000 ft^3/minute (or 169.90 m^3/min = 10,194 m^3/hour)
- Methane is only 50% of this gas stream (5,097 m^3/hour)
- Q_s = Emission rate of reduced sulfur compounds, m^3/hour
- C_s = Concentration of reduced sulfur compounds, (100 ppmv, assumed as H_2S by the facility)
- Multiplication factor for 50% methane concentration in landfill gas = 2.0
- Molecular weight of H_2S = 34.08 g/mole
- Molecular weight of sulfur = 32.06 g/mole

Calculation for H_2S:

$$Q_{H_sS} = 2.0 \times Q_{CH_4} \times \left(\frac{C_s}{1\times10^6}\right) \qquad \text{(AP-42, Equation 3)}$$

$$Q_{H_2S} = 2.0 \times 5{,}097 \frac{m^3}{hour} \times \left(\frac{100 \text{ parts}}{1\times10^6}\right) = 1.02 \frac{m^3}{hour}$$

Conversion of H_2S flow rate to flow rate of sulfur only:

$$Q_s = Q_{H_2S} \times \frac{MW_W}{MW_{H_2S}} = 1.02 \frac{m^3 H_2S}{hour} \times \frac{32.06 \frac{g\ S}{mole}}{34.08 \frac{g\ H_2S}{mole}} = 0.96 \frac{m^3 S}{hour}$$

The mass of the pre-combustion sulfur present in the methane was found using Equation 4 of AP-42, Section 2.4.4.2.:

$$UM_S = 0.96 \frac{m^3}{hour} \times \left[\frac{32.06 \frac{g}{gmol} \times 1 \text{ atm}}{8.205 \times 10^{-5} \frac{m^3\text{-atm}}{gmol\text{-K}} \times 1000 \frac{g}{kg} \times (273+25°C)\text{ K}}\right] \times 2.2 \frac{pounds}{kg}$$

$$UM_S = 2.77 \frac{\text{pounds Sulfur}}{hour}$$

To calculate SO_2 emitted from the combustion of sulfur, Equation 10 of Section 2.4-8 was used.

$$SO_2 \text{ emitted} = UM_S \times \frac{\eta_{col}}{100} \times 2.0$$

Where:

UM_s = Uncontrolled mass emission rate of sulfur compounds (2.77 lb sulfur/hour)
η_{col} = Collection efficiency, of the landfill gas collection system, percent (assumed 100% by facility)
2.0 = Ratio of the molecular weight of SO_2 to the molecular weight of sulfur

$$SO_2 \text{ Annual Emissions} = 2.77 \frac{\text{lb}}{\text{hour}} \times \frac{100}{100} \times 2.0 \times 8760 \frac{\text{hours}}{\text{year}} \times \frac{1 \text{ ton}}{2000 \text{ lb}} = 24.27 \frac{\text{tons } SO_2}{\text{year}}$$

$$\text{Emission rate} = \frac{24.27 \text{ tons } SO_2}{\text{yr}} \times \frac{2000 \text{ lbs } SO_2}{\text{ton}} \times \frac{\text{yr}}{8760 \text{ hrs}} \times \frac{\text{hr}}{182.16 \text{ mmBtu}} = 0.03 \frac{\text{lbs } SO_2}{\text{mmBtu}}$$

15A NCAC 02D .0521: Control of Visible Emissions – The facility's two landfill gas-fired open flares **(ID Nos. CD-01** and **CD-02)** can be reasonably expected to generate visible emissions. Emissions from these sources will be limited to 20% opacity when averaged over a 6-minute period, except if: no six-minute period exceeds 87% opacity; no more than one six-minute period exceeds 20% opacity in any hour; and no more than four six-minute periods exceed 20% opacity in any 24-hour period. Properly maintained and operated flares typically have no trouble meeting this requirement. No monitoring is required, as no visible emissions are expected from the burning of landfill gas. Continued compliance is expected.

15A NCAC 02D .0524: New Source Performance Standards – One of the facility's diesel-fired emergency generators **(ID No. IES-14)** is subject to 40 CFR 60, Subpart IIII: Standards of Performance for Stationary Compression Ignition Internal Combustion Engine as it is a stationary compression ignition internal combustion engine and was installed on October 2, 2014, after the threshold of applicability for this subpart. The facility's other diesel-fired emergency generator **(ID No. IES-11)** is not subject to Subpart IIII because it was manufactured in 1993, which is prior to the applicability date for that subpart. Note that the only source at the facility subject to New Source Performance Standards is insignificant, so there will be no conditions in the permit language for any NSPS. The facility is still required to comply with any NSPS requirements where applicable. See the regulatory review below for each NSPS in Section 6. Continued compliance is expected.

15A NCAC 02D .0958: Work Practices for Sources of Volatile Organic Compounds – On November 1, 2016, amendments to 15A NCAC 02D .0902 were finalized to narrow applicability of work practice standards in 15A NCAC 02D .0958 from statewide to the maintenance area for the 1997 8-hour ozone standard. This change is being made primarily because the abundance of biogenic VOC emissions in North Carolina results in ozone formation being limited by the amount of available nitrogen oxides (NOx) emissions. Provisions of the Clean Air Act require VOC requirements previously implemented in an ozone nonattainment area prior to redesignation remain in place. However, facilities outside the maintenance area counties for the 1997 8-hour ozone standard would no longer be required to comply with the work practice standards in 15A NCAC 02D .0958. Pursuant to 15A NCAC 02D .0902(f), the following locations still remain subject to the work practice standards in 15A NCAC 02D .0958: Cabarrus County; Gaston County; Lincoln County; Mecklenburg County; Rowan County; Union County; and Davidson Township and Coddle Creek Township in Iredell County. Montgomery County is not listed among these counties and was never in nonattainment for ozone, so 15A NCAC 02D .0958 is no longer applicable to facilities, including Uwharrie Environmental Landfill, within the county. Therefore, the permit condition for 15A NCAC 02D .0958 will be removed under this permit renewal.

15A NCAC 02D .1110: National Emission Standards for Hazardous Air Pollutants – The facility's MSW landfill component **(ID No. ES-01)** is subject to 40 CFR 61, Subpart M: National Emission

Standard for Asbestos because it is an active disposal site for waste containing asbestos. See the regulatory review for this rule below in Section 6.

15A NCAC 02D .1111: Maximum Achievable Control Technology – The facility's MSW landfill component **(ID No. ES-01)** is subject to 40 CFR 63, Subpart AAAA: National Emission Standards for Hazardous Air Pollutants: Municipal Solid Waste Landfills because it has accepted waste since November 8, 1987, has a design capacity of greater than 2.5 million megagrams and 2.5 million cubic meters, and has an NMOC emission rate greater than 50 megagrams per year. The facility's two diesel-fired emergency generators **(ID Nos. IES-11** and **IES-14)** are subject to 40 CFR 63, Subpart ZZZZ: National Emissions Standards for Stationary Reciprocating Internal Combustion Engines as they are both stationary reciprocating internal combustion engines. The facility's 250-gallon gasoline storage tank **(ID No. IES-09)** is subject to 40 CFR 63, Subpart CCCCCC: National Emission Standards for Hazardous Air Pollutants for Source Category: Gasoline Dispensing Facilities because it is located at a facility that is an area source for HAPs, and because it meets the definition of a "gasoline dispensing facility" (any stationary facility which dispenses gasoline into the fuel tank of a motor vehicle, motor vehicle engine, nonroad vehicle, or nonroad engine). Note that Subpart ZZZZ and Subpart CCCCCC only apply to insignificant sources, so there will be no permit conditions related to these subparts. Regardless, the facility is required to comply with any NESHAP rules where applicable. See the NESHAP regulatory review below in Section 6 for more information. Continued compliance is expected.

6. NSPS, NESHAPS/MACT, PSD, 112(r), CAM

NSPS

The facility is currently subject to one New Source Performance Standard: 40 CFR 60, Subpart IIII. The facility is also subject to 40 CFR 62, Subpart OOO, which implements 40 CFR 60, Subpart Cf. This permit renewal does not change the facility's NSPS status.

40 CFR 60, Subpart Cf: Emission Guidelines and Compliance Times for Municipal Solid Waste Landfills – The facility's MSW landfill component **(ID No. ES-01)** is subject to this subpart because it is a municipal solid waste landfill. The landfill is considered an existing source because it has accepted waste since November 8, 1987, and was constructed prior to July 17, 2014. This subpart is implemented by 40 CFR 62, Subpart OOO, which means that 40 CFR 60, Subpart WWW is no longer applicable to this facility. Since it is implemented by another subpart, there are no conditions in the permit language related to this subpart. See the regulatory review for 40 CFR 62, Subpart OOO for more information.

This subpart has been updated once since the last permit renewal. The last permit renewal was issued on March 4, 2020, and this subpart was updated on March 26, 2020. This update corrects and clarifies certain regulatory provisions related to startup, shutdown, and malfunction (SSM); revises wellhead operational standards and corrective actions; and adds new electronic reporting requirements for performance test results. The EPA also finalized provisions to allow affected sources to demonstrate compliance with certain NSPS requirements by following corresponding requirements in MSW landfill-related NESHAPs. Since this subpart is implemented by another subpart and is not directly included in the permit language, no changes will be needed in this permit renewal.

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 – The facility's MSW landfill component **(ID No. ES-01)** is no longer subject to this subpart because it is now considered an existing source according to 40 CFR 60, Subpart Cf. See

above for more information. This change took place during the 2021 reopening for cause of the previous permit issuance and was included as part of issuance 08826T13 on August 4, 2023. See Massoud "Max" Eslambolchi's statement of basis for Air Permit No. 08826T13, dated August 4, 2023, for more information.

40 CFR 60, Subpart XXX: Standards of Performance for Municipal Solid Waste Landfills That Commenced Construction, Reconstruction, or Modification After July 17, 2014 – The facility's MSW landfill component **(ID No. ES-01)** is not subject to this subpart because it was constructed prior to the threshold for applicability for this subpart.

40 CFR 60, Subpart IIII: Standards of Performance for Stationary Compression Ignition Internal Combustion Engines – One of the facility's diesel-fired emergency generators **(ID No. IES-14)** is subject to this subpart because it is a stationary compression ignition internal combustion engine that was installed on October 2, 2014, after the threshold of applicability for this subpart. The other diesel-fired emergency generator **(ID No. IES-11)** is not subject to this subpart because it was manufactured in 1993, which is before the threshold for applicability for this subpart. Note that **IES-14** demonstrates compliance with 40 CFR 63, Subpart ZZZZ by complying with this subpart. Also note that the only source subject to this subpart is an insignificant source, so there will be no conditions in the permit language related to this subpart. Regardless, the facility will still be required to comply with this subpart.

This subpart has been updated seven times since the last permit renewal. The last permit renewal was issued on March 4, 2020, and this subpart was updated on January 1, 2021; on June 29, 2021; on July 29, 2021; on August 10, 2022; on January 24, 2023; on March 27, 2023; and on August 30, 2024. The January 1, 2021 update streamlines EPA fuel quality regulations and is largely unsubstantial. The June 29, 2021 update amends test procedures for certain heavy-duty engines and vehicles, and is largely unsubstantial. The July 29, 2021 update incorporates the amendments from the previous update into the text. The August 10, 2022 update amends the regulation to reflect a 2015 court decision regarding reciprocating internal combustion engine (RICE) NESHAP and NSPS rules, specifically with respect to emergency engine operation during periods of voltage or frequency deviation. The January 24, 2023 update includes new emission standards for heavy-duty engines with model years of 2027 or later targeting emissions of NO_x, particulate matter, hydrocarbons, carbon monoxide, and air toxics. The March 27, 2023 update incorporates the amendments from the previous update into the text. The August 30, 2024 is the most substantial and includes new electronic reporting requirements and a small number of clarifications and corrections throughout the text of the rule. Again, since the sources subject to this rule are insignificant, there are no related conditions in the permit language, so no revisions are needed as a result of these updates.

40 CFR 62, Subpart OOO: Federal Plan Requirements for Municipal Solid Waste Landfills That Commenced Construction On or Before July 17, 2014 and Have Not Been Modified or Reconstructed Since July 17, 2014 – The facility is considered an existing municipal solid waste (MSW) landfill according to 40 CFR 62.16711 as it was constructed prior to July 17, 2014, and has accepted waste since November 8, 1987. This regulation replaces 40 CFR 60, Subpart WWW. As described in 40 CFR 60.760(d)(1), Subpart WWW no longer applies to an affected facility once it becomes subject to more stringent requirements in an approved and effective state or federal plan that implements 40 CFR 60 Subpart Cf.

According to 40 CFR 62.16711(b), MSW landfills regulated by EPA-approved state or tribal plans implementing 40 CFR 60, Subpart Cf are not subject to the requirements of this subpart. However, as of this permit issuance, North Carolina's State Implementation Plan rules, codified in 15A NCAC 02D .1700, have not yet been approved by the EPA, so this subpart is used in their place. The

addition of this subpart was the subject of a reopening for cause of this facility's previous permit issuance (08826T12) in 2021. This subpart was included when that permit was reissued. See Massoud "Max" Eslambolchi's Title V permit review for air permit No. 08826T13, dated August 4, 2023. Until EPA approval of the NC SIP rules, the federal rules will apply. Note that physical or operational changes made to an existing MSW landfill solely to comply with an emission standard under this section are not considered a modification or reconstruction of the landfill, and do not subject the landfill to the requirements of 40 CFR 60, Subpart XXX.

Pursuant to 40 CFR 62.8362, this Federal rule will be administered by NC DEQ (the parent agency of DAQ).

To maintain compliance with 40 CFR 62 Subpart OOO, the Permittee is required to observe the emission limits, operating standards, and compliance schedule included in this subpart. The Permittee shall also comply with the monitoring requirements and monitor the following: the gauge pressure in the gas collection header on a monthly basis; the nitrogen and oxygen concentrations in captured landfill gas on a monthly basis; the temperature of the landfill gas on a monthly basis provided in 62.16720(a)(4); and the surface concentration of methane along the entire perimeter of the collection area for each collection area on a quarterly basis. Furthermore, the facility must maintain the following records: records of the design capacity, current amount of solid waste interred, and year-by-year waste acceptance rate for up to five years; records of the initial performance test data or compliance determination data, vendor specifications, and a plot map of each existing and planned collector in the system for the life of the control system; continuous records of the equipment operating parameters specified in 62.16722 as well as records for periods of operation during which the parameter boundaries established during the most recent performance test are exceeded; records of all collection and control system exceedances of operational standards, including readings in the subsequent month whether or not the second reading is an exceedance and the location of each exceedance; records of all SEM and information related to monitoring instrument calibrations conducted; and records of all collection and control system monitoring data for parameters measured. Finally, the facility shall submit annual reports of the following: value and length of time for exceedance of applicable parameters monitored under 62.16722(a)(1), (b), (c), (d), and (g); description and duration of all periods when the gas stream is diverted from the control device through a bypass line or the indication of bypass as specified in 62.16722; description and duration of all periods when the control device was not operating and length of time the control device was not operating; all periods when the collection system was not operating; the location of each exceedance of the 500 parts per million methane concentration as provided in 16.16716(d) and the concentration recorded at each location for which an exceedance was recorded in the previous month; the date of installation and the location of each well or collection system expansion added pursuant to 62.16720(a)(3), (4), (b), and (c)(4); and the root analysis conducted, including a description of the recommended corrective action, the date of the corrective action already completed following a positive pressure or elevated temperature reading, and, for action not already completed, a schedule for implementation, including proposed commencement and completion dates for any corrective action analysis for which corrective actions are required in 62.16720(a)(3) or (4) and that take more than 60 days to correct the exceedance. The most recent accessible inspection report indicates that the facility has complied with the Subpart OOO requirements so far. The last periodic compliance report was received on July 15, 2024 by the Fayetteville regional office. Continued compliance is expected.

The last permit renewal 08826T13 was issued on March 4, 2020. However, 40 CFR 62 Subpart OOO was only added to the permit as of August 4, 2023 with the last permit issuance, which was due to a reopening for cause. 40 CFR 62 Subpart OOO was last updated on February 14, 2022, which is prior

to its inclusion in Uwharrie Environmental Landfill's permit conditions. No updates to the permit language will be needed for this subpart.

NESHAP/MACT

The facility is currently subject to three Maximum Achievable Control Technology standards and one National Emission Standard. This permit renewal does not change the facility's MACT or NESHAP status. The permit language will be reviewed and updated as necessary to reflect the current version of each standard. This facility is an area source of hazardous air pollutants (HAPs) because the facility does not have potential or actual HAP emissions greater than the thresholds listed in the definition of "major source" in 40 CFR 63.2. Because this facility is an area source, rules that typically apply exclusively to major sources categorically do not apply to this facility.

40 CFR 61, Subpart M: National Emission Standard for Asbestos – The facility's MSW landfill component **(ID No. ES-01)** is subject to this subpart because it is an active disposal site for waste containing asbestos.

To maintain compliance with this subpart, the Permittee is required to observe the notification, testing, recordkeeping, and monitoring requirements included in this subpart. The Permittee must comply with the following requirements: ensure that there are no visible emissions from any active disposal site; use an alternative emissions control method approved by DAQ; or, at least once every 24-hour period the facility is in continuous operation, ensure that any asbestos-containing material deposited at the site that day be covered by at least 15 centimeters (6 inches) of compacted non-asbestos-containing material or be covered by an effective dust suppression agent to minimize dust and wind erosion. For all asbestos-containing waste received, the Permittee must maintain the following records: name, address, and telephone number of the waste generator and transporter; quantity of material in cubic meters; date of receipt; and information about the presence of improperly enclosed, uncovered, or unsealed asbestos-containing waste material for at least two years. Until closure of the landfill, the Permittee shall maintain records of the location, depth, area, and quantity in cubic yards of asbestos-containing waste material. The Permittee shall notify the DAQ regional office in writing at least 45 days prior to excavating or disturbing any asbestos-containing waste and include the following information in the notice: schedule start/completion dates; reason for disturbing the waste; procedures to be used to control emissions during the operation; and location of any temporary or final storage or disposal site. The most recent inspection report indicates the facility is complying with these requirements without issue. Continued compliance is expected.

This subpart has not been updated since before the previous renewal. No changes to the permit language are needed.

40 CFR 63, Subpart AAAA: National Emission Standards for Hazardous Air Pollutants: Municipal Solid Waste Landfills – The facility's MSW landfill component **(ID No. ES-01)** is subject to this subpart because it is a municipal solid waste landfill that has accepted waste since November 8, 1987, has a design capacity greater than 2.5 million megagrams and 2.5 million cubic meters, and has demonstrated an NMOC emission rate greater than 50 megagrams per year.

To maintain compliance with this subpart, the Permittee is required to observe the testing, monitoring, and recordkeeping requirements. The Permittee shall install and operate a collection and control system to destruct NMOC at 98% efficiency and shall operate it in accordance with the specifications in 40 CFR 62, Subpart OOO, NESHAP AAAA, and the design plan. The Permittee shall monitor each landfill gas extraction well for pressure and oxygen concentration monthly, and for surface methane quarterly. Each flare shall be monitored every 15 minutes for continued operation. The Permittee shall maintain records of the following: value and length of time for exceedance of

applicable parameters monitored in paragraph A.3.m and n of the permit; description and duration of all periods when the gas stream is diverted from the control device through a bypass line or the indication of bypass flow as specified in paragraph A.3.m and n of the permit; description and duration of all periods when the control device was not operating for a period of time exceeding one hour and length of time the control device was not operating; all periods of time when the collection system was not operating in excess of 5 days; the location of each exceedance of the 500 parts per million methane concentration and the concentration recorded at each location for which an exceedance was recorded in the previous month; the date of installation and the location of each well or collection system expansion added in accordance with paragraph A.3.g.iii, A.3.h, and A.3.i.iv of the permit; summary of all DAQ-approved well closures that have been decommissioned in accordance with paragraph A.3.k.ii.(C) of the permit; and summary of all DAQ-approved nonproductive areas of the landfill in accordance with 60.759(a)(3)(ii). The most recent inspection report indicates that the facility has maintained compliance with this subpart without issue. Continued compliance is expected.

This subpart has been updated twice since the last permit renewal. This facility's permit was last renewed on March 4, 2020, and this subpart was updated on November 12, 2020 and February 14, 2022. However, the last permit issuance (Air Permit No. 08826T13, dated August 4, 2024) was a reopening for cause that specifically addressed this subpart's two revisions and updated it to the most recent version. No changes will be needed to the permit language with respect to this subpart in this renewal.

40 CFR 63, Subpart ZZZZ: National Emissions Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines – The facility's two diesel-fired emergency generators **(ID Nos. IES-11** and **IES-14)** are subject to this subpart because they are both stationary reciprocating internal combustion engines. **IES-11** is considered an existing source for the purposes of this subpart. **IES-14** is considered a new source for the purposes of this subpart and demonstrates compliance with this subpart by demonstrates compliance with this subpart by complying with 40 CFR 60, Subpart IIII. Note that both affected sources are insignificant, so there will be no condition related to this subpart in the permit language. Regardless, the facility will still be required to comply with this subpart where applicable.

This subpart has been updated eight times since the last permit renewal. This facility's permit was last renewed on March 4, 2020, and this subpart was updated on November 19, 2020; on December 4, 2020; on January 1, 2021; on January 20, 2021; on August 10, 2022; on March 29, 2023; on May 30, 2023; and on August 30, 2024. Since all sources subject to this subpart are insignificant, there are no conditions in the permit related to this subpart, and so no changes to the permit will be needed. The facility should still be aware, however, that the most recent update adds new electronic reporting requirements and corrections and clarifications to certain maintenance requirements as they must still comply with this subpart's provisions.

40 CFR 63, Subpart CCCCCC: National Emission Standards for Hazardous Air Pollutants for Source Category: Gasoline Dispensing Facilities – The facility's 250-gallon gasoline storage tank is subject to this subpart because the facility is an area source, and because the tank meets the definition of a "gasoline dispensing facility" (any stationary facility which dispenses gasoline into the fuel tank of a motor vehicle, motor vehicle engine, nonroad vehicle, or nonroad engine). Note that there is no minimum size threshold for applicability for this subpart. Also note that the only affected source subject to this subpart is considered insignificant, so there will be no condition related to this subpart in the permit language. Regardless, the facility will be required to comply with this subpart where applicable, including work practices and requirements for the handling of gasoline.

This subpart has been updated three times since the last permit renewal. This facility's permit was last renewed on March 4, 2020, and this subpart was updated on November 19, 2020; on December 7, 2020; and on January 18, 2021. Since all sources subject to this subpart are insignificant, there are no conditions in the permit related to this subpart, and so no changes to the permit will be needed.

PSD

The facility is not subject to PSD because it is subject to avoidance conditions for emissions of carbon monoxide (CO) under 15A NCAC 02Q .0317: Avoidance Conditions for 15A NCAC 02D .0530: Prevention of Significant Deterioration. In order to avoid PSD applicability, the facility's two landfill gas-fired open flares **(ID Nos. CD-01** and **CD-02)** must discharge into the atmosphere less than 250 tons of CO total and combust landfill gas at a rate less than 2,628,000,000 ft^3 total per consecutive 12-month period. The facility must monitor and maintain records of the amount of landfill gas burned in the two flares on a monthly basis. The following formula shall be used to calculate estimated total emissions of carbon monoxide in terms of tons per month:

$$A_{CO} = \left[\frac{0.37 \text{ lbs CO}}{1\times10^6 \text{ Btu}} \times \frac{B_{CD\text{-}01} \text{ ft}^3}{\text{month}} \times \frac{506 \text{ Btu}}{\text{ft}^3} \times \frac{1 \text{ ton CO}}{2000 \text{ lbs}}\right] + \left[\frac{0.37 \text{ lbs CO}}{1\times10^6 \text{ Btu}} \times \frac{C_{CD\text{-}02} \text{ ft}^3}{\text{months}} \times \frac{506 \text{ Btu}}{\text{ft}^3} \times \frac{1 \text{ ton CO}}{2000 \text{ lbs}}\right]$$

Where:

A_{CO}	= total emissions of carbon monoxide (tons/month)
$B_{CD\text{-}01}$	= monthly landfill gas flow rate into flare CD-01
$C_{CD\text{-}02}$	= monthly landfill gas flow rate into flare CD-02
Landfill gas heat input	= 506 Btu/ft^3
AP-42 factor for landfill gas	= 0.37 lbs CO/mmBtu heat input

The facility is required to submit semi-annual reports of monitoring and recordkeeping activities. The most recent inspection report, dated November 28, 2023, indicates that the facility is complying with its avoidance conditions without issue. The most recent periodic compliance report was received on July 15, 2024. Continued compliance with PSD avoidance is expected.

112(r)

The facility is not subject to Section 112(r) of the Clean Air Act requirements because it does not store any of the regulated substances in quantities above the 112(r) thresholds. This is indicated in the facility's renewal application and in the most recent inspection report, dated November 28, 2023. No change with respect to 112(r) is anticipated under this permit renewal.

CAM

The CAM rule (40 CFR 64; 15A NCAC 02D .0614) applies to each pollutant specific emissions unit (PSEU) located at a facility required to obtain a TV permit that meets all three following criteria:

- the unit is subject to any (non-exempt: e.g., pre November 15, 1990, Section 111 or Section 112 standard) emission limitation or standard for the applicable regulated pollutant.
- the unit uses any control device to achieve compliance with any such emission limitation or standard.
- The unit has potential pre-control device emissions of the applicable regulated air pollutant that are equal to or greater than 100 percent of the amount, in tons per year, required for a source to be classified as a major source (i.e., 100 tons per year for criteria pollutants or 10/25 tons per year for HAPs).

This MSWL (PSEU, **ID No. ES-01)** does utilize control devices; namely, two landfill gas-fired open flares **(ID Nos. CD-01** and **CD-02)** and two gas collection and control systems **(ID Nos. CD-GCCS1** and **CD-GCCS2)**. These active controls (GCCSs, flares) reduce emissions of both NMOCs and HAPs, and help comply with the post-November 1990 §111 (40 CFR 62 OOO) and §112 (40 CFR 63 AAAA) standards. There are no other requirements that apply to this PSEU for these pollutants, and none of the other sources at the facility are installed with any active control devices; thus, the CAM requirements do not apply to the facility sources.

7. Facility Wide Air Toxics

Uwharrie Environmental Landfill has made a toxics demonstration for toxic air pollutants (TAP) in the past. The emissions from the landfill surface and from the facility's two landfill gas-fired flares were evaluated in 2012, and toxic emission rates were projected through CY2028 using AP-42 Ch 2.4 [November 1998]. Emission rates for acrylonitrile, benzene, methylene chloride (dichloromethane), ethyl mercaptan, hydrogen chloride, hydrogen sulfide, methyl mercaptan, and vinyl chloride exceeded their respective TPERs, and were subsequently modeled to determine their impacts at the facility's property boundary.

For this application, calculations from the previous issuance (08826T13) will be discussed, since the projection goes through CY2028, because no modifications to the landfill operating parameters are expected in this permit renewal that would result in a radical change in toxic air pollutant emissions, and because the final estimated emissions are well below the allowable annual limit. See Massoud "Max" Eslambolchi's Title V permit review for air permit No. 08826T13, dated August 4, 2023 for more information. Default concentrations from AP-42 were assumed for all pollutants, with the exception of hydrogen sulfide, for which the facility conservatively estimates a 100 ppmv concentration as opposed to the AP-42 value of 35.5 ppmv. The LFG generation rate was estimated through CY2025 using LandGEM with the following inputs:

Parameter	Value
Waste Acceptance Rate (TPY)	Historical, plus projected increase of ~3.4% annually
Methane Generation Rate ($year^{-1}$)	0.040
Potential Methane Generation Capacity (m^3/Mg)	100
NMOC Concentration (ppmv as hexane)	595
Methane Content (% by volume)	50
LFG Generation Rate (m^3/yr)	77,197,354

The emission rates for the previously evaluated TAPs were not and are not expected to be exceeded through the renewal period and do not require further evaluation. Since the calculated emission rates for hydrogen chloride and hydrogen sulfide have increased, those increased emission rates warranted additional scrutiny.

The hydrogen sulfide emission rate appears to have increased due to a change in the assumed hydrogen sulfide concentration used for the submitted calculations. As previously stated, the facility has assumed a more conservative hydrogen sulfide concentration than the AP-42 value, which has resulted in an increase in the calculated emission rate. The increase in the calculated hydrogen chloride mission rate is small and can likely be attributed to rounding errors or other minor calculational variances.

Emission rates and impacts for hydrogen chloride and hydrogen sulfide as modeled in 2012:

Toxic Air Pollutant	Averaging Period	Modeled Emission Rates		Concentration at Property Boundary	AAL ($\mu g/m^3$)	%AAL
		Landfill	Flares			
Hydrogen chloride	lb/hr	--	1.38	42.1	700	6.0%
Hydrogen sulfide	lb/day	6.60	7.99×10^{-2}	0.26	120	0.22%

Facility-wide emission rates and impacts for all modeled pollutants, including increases for hydrogen chloride and hydrogen sulfide:

Toxic Air Pollutant	Averaging Period	Modeled Emission Rates		Concentration at Property Boundary	AAL ($\mu g/m^3$)	%AAL
		Landfill	Flares			
Acrylonitrile	lb/day	1.83	2.22×10^{-2}	0.072	30	0.24%
	lb/hr	7.64×10^{-2}	9.24×10^{-4}	0.244	1000	0.02%
Benzene	lb/yr	297.58	3.59	0.016	0.12	13%
Ethyl mercaptan	lb/hr	3.22×10^{-2}	2.60×10^{-3}	0.103	100	0.10%
Hydrogen chloride	lb/hr	--	1.40	42.8	700	6.1%
Hydrogen sulfide	lb/day	6.60	7.99×10^{-2}	0.26	120	0.22%
Methylene chloride (Dichloromethane)	lb/yr	2,419.51	194.47	0.133	24	0.55%
	lb/hr	0.276	2.22×10^{-2}	0.881	1700	0.05%
Methyl mercaptan	lb/hr	2.72×10^{-2}	3.30×10^{-4}	0.087	50	0.17%
Vinyl chloride	lb/yr	914.02	73.76	0.05	0.38	13%

*The modeled impacts have been extrapolated and compared to the AALs for hydrogen chloride and hydrogen sulfide based on the calculated emission rates submitted in the (previous) application. The modeled impacts and emission rates remain the same for all other pollutants.

The facility is subject to 40 CFR 63, Subpart AAAA; therefore, it is not subject to permitting for toxics per 15A NCAC 02Q .0702(a)(27)(B). None of the toxic air pollutants evaluated exceed their respective TPER or AAL after the modification; therefore, DAQ has determined that there is NOT an acceptable risk to human health resulting from this modification. Emissions of toxic air pollutants should continue to be periodically evaluated as the landfill grows.

8. Facility Emissions Review

The facility-wide potential emissions have not changed because of this TV permit renewal. Actual emissions for criteria pollutants and HAPs for the previous five years reporting periods are provided in the header of this permit review.

9. Compliance Status

DAQ has reviewed the compliance status of Uwharrie Environmental Landfill. During the most recent inspection, conducted on November 27, 2023, the facility appeared to be in compliance with all applicable requirements. Further, the facility has had no air quality violations within the last five years. The facility's Annual Compliance Certification was received on January 29, 2024, and indicated compliance with all applicable requirements in 2023. The facility also certified compliance through the submission of an E5 form included along with their renewal application.

10. Public Notice/EPA and Affected State(s) 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. Also pursuant to 02Q .0522, a notice of the DRAFT Title V Permit shall be provided to each affected State at or before the time notice provided to the public under 02Q .0521 above. No affected states or local agencies are within 50 miles of this facility. Regardless of distance, all potential affected states and local air programs will be notified in accordance with DAQ policy.

11. Other Regulatory Considerations

- A P.E. seal is NOT required for this renewal application.
- A zoning consistency determination is NOT required for this renewal application.
- A permit fee is NOT required for this renewal application.
- DAQ's PFAS Questionnaire was sent to facility technical contact Mr. Mike Gurley on December 2, 2024, and a response was received on December 9, 2024. The facility's response is documented in Attachment 1 to this technical review. Based on the facility's responses, the PFAS disclosure condition will be included in this permit renewal.

12. Recommendations

The permit renewal application for Uwharrie Environmental Landfill has been reviewed by DAQ to determine compliance with all procedures and requirements. DAQ has determined this facility is complying or will achieve compliance, as specified in the permit, with all requirements that are applicable to the affected sources. DAQ recommends the issuance of Air Permit No. 08826T14.

<u>Attachment 1</u>:
Uwharrie Environmental Landfill's Response to DAQ PFAS Questionnaire

Mr. Luke Mayer
Engineer I, Division of Air Quality
North Carolina Department of Environmental Quality
217 West Jones Street
Raleigh, NC 27699-1641

Subject: Uwharrie Environmental Landfill- Air Quality Permit-08826T14
DAQ PFAS Screening Questions and Disclosure Form

Dear Mr. Mayer:

DAQ Question 1:
Will your facility use any material or products in your operations that contain fluorinated chemicals? If so, please identify such materials or products and the fluorinated chemicals they contain.
Response: No

DAQ Question 2:
Will your facility formulate/create products or byproducts (directly or indirectly) that contain fluorinated chemicals (across multiple media)? If so, please identify such products or byproducts and the fluorinated chemicals they contain.
Response: No. The site does not formulate or create any products or byproducts, as those terms are used in the manufacturing and commercial contexts. The site does generate landfill gas and leachate which could be considered "byproducts" and are further described in response to Question 3. In some instances, landfill gas can be beneficially reused in renewable energy generation, this reuse does occur at this site.

DAQ Question 3:
Will your facility generate solid, liquid, or gaseous related emissions, discharges, or wastes/products containing fluorinated chemicals? If so, please identify such waste streams or materials and the fluorinated chemicals they contain.
Response: Waste accumulation, within the limits of constructed cells, may contain unavoidable amounts of fluorinated chemicals because of their common use in common consumer products that make up the incoming waste stream, such as textiles, food packaging, carpeting, and sewage sludge from publicly owned treatment works (POTW). Uwharrie Environmental Landfill recently conducted sampling to determine which, if any, fluorinated chemicals exist in its waste accumulation. At the time it submits this response, however, it has not yet received results from that testing and cannot identify which fluorinated chemicals are present.

In its article entitled, "A critical review of perfluoroalkyl and polyfluoroalkyl substances (PFAS) landfill disposal in the United States," the U.S. EPA Office of Research and Development summarized studies in which certain PFAS were detected in landfill gas. U.S. EPA posits that the emission of fluorinated chemicals from landfills via landfill gas might occur primarily through two potential pathways: (1) incomplete combustion through flares; and (2) ambient emissions in areas with intermediate cover and no gas collection.

Even with the two potential pathways through flares or ambient emissions, air/gas data for fluorinated chemicals is limited and research is in its infancy nationally. Thus, it is unknown if, and to what extent,

landfill gas created from the naturally occurring waste degradation processes and a GCCS, contains fluorinated chemicals. Even if it does, the fate of those chemicals is also unknown. Further studies may illuminate the fate of any PFAS in landfill gas that is managed through the on-site GCCS. We do not have any data regarding PFAS in landfill gas at this site because it is not required to be tested and is unquantifiable in any event. There currently is no basis to attribute any emission of PFAS to the landfill.

Additionally, MSW landfills generate leachate, which is a liquid effluent created by the percolation or infiltration of rainwater through waste. PFAS contained in the waste accumulation can partition to the liquid phase and become part of landfill leachate. As a result, leachate generated from the landfill may contain certain PFAS, which is collected by the landfill's leachate collection system and managed for offsite disposal. Moreover, landfill gas condensate that will be generated by the GCCS when it goes online will be routed into the leachate collection system before being discharged to a POTW. These discharges of leachate and landfill gas condensate are managed under a separate permit. Notwithstanding these potential pathways for the emission or discharge of fluorinated chemicals from the site, U.S. EPA described in the above-cited article that the vast majority (84%) of PFAS entering landfills from MSW and biosolids remains in the landfill and, thus, is not emitted or discharged. We continue to monitor regulatory and technical developments.

DAQ Question 4:
Do your facility's processes or operations use equipment, material, or components that contain fluorinated chemicals (e.g., surface coating, clean room applications, solvents, lubricants, fittings, tubing, processing tools, packaging, facility infrastructure, air pollution control units)? Could these processes or operations directly or indirectly (e.g., through leaching, chemical process, heat treatment, pressurization, etc.) result in the release of fluorinated chemicals into the environment?
Response: Cleaning products, solvents, lubricants, fittings, and tubing are all used at the facility; however, they are used in housekeeping and in general maintenance practices and we are unaware of the presence of any fluorinated chemicals in these products.

DAQ Question 5:
List the fluorinated chemicals identified (i.e., through testing or desktop review) above in your response under the appropriate methods/approaches? If one is not, are they on any other known US or International target lists? OTM-45 (air emissions) Methods 533 & 537.1 (drinking water) SW-846: Method 8327 (water) Draft Method 1633 (water, solids, tissue) Total PFAS" Draft Method 1621 for Adsorbable Organic Fluorine (wastewater) Non targeted analytical methods Qualitative approach through suspect screening.
Response: As discussed above, air/gas data for PFAS is unknown and research is in its infancy. Thus, it is unknown if the waste degradation generates fluorinated chemicals, and if so, what types in exist in byproduct landfill gas or landfill gas condensate.

DAQ Question 6:
Are there other facilities or operations in the U.S. or internationally engaged in the same or similar activities involving fluorinated chemicals addressed in your response to the above questions? If so, please provide facility identification information? In addition, are there any ISO (International Organization for Standardization) certification requirements?
Response: Through various studies conducted throughout the United States, PFAS have been identified in leachate generated from municipal solid waste landfills because of the unavoidable use in fluorinated compounds in consumer products. Waste degradation and the corresponding production of byproducts including landfill gas and leachate will naturally occur at all MSW landfills. However, it is documented that landfills are passive receivers and not users or generators of PFAS, and the continued operation of MSW landfills is critical to human health and the environment. Engineered landfills equipped with liners,

leachate collection, and landfill gas collection and control system, like the landfill, are recognized as effective disposal options for waste containing PFAS.

DAQ Question 7:
Do you plan to store AFFF on site, use it in fire training at the site, use it for fighting fires at the facility, or include it in a fire fighting system at the site?
Response: No

DAQ Question 8:
Are other emerging contaminants (e.g., 1,4-dioxane, brome, perchlorate, 1,2,3-Trichloropropane) used in some capacity within your facility or operations?
Response: None that we are presently aware of.

DAQ Question 9: Do you need technical assistance to answer the questions above.
Response: No

Thank you,

Mike Gurley
Environmental Manager
Republic Services