

**NORTH CAROLINA DIVISION OF
AIR QUALITY**

Application Review

Issue Date: Date needed

Region: Winston-Salem Regional Office
County: Guilford
NC Facility ID: 4101086
Inspector's Name: Robert Barker
Date of Last Inspection: 03/08/2023
Compliance Code: 3 / Compliance - inspection

Facility Data

Applicant (Facility's Name): City of Greensboro – White Street Landfill

Facility Address:

City of Greensboro – White Street Landfill
 2503 White Street
 Greensboro, NC 27405

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, .1111, .1806

NSPS: 40 CFR 60 Subpart JJJJ

NESHAP: 40 CFR 63 Subparts AAAA, ZZZZ, and CCCCCC

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

Michael Szychowicz
 Landfill Specialist
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 2503 White Street
 Greensboro, NC 27405

Authorized Contact

Griffin Hatchell
 Director of Field
 Operations
 (336) 373-4379
 401 Patton Avenue
 Greensboro, NC 27406

Technical Contact

Lewis Walker
 Landfill Compliance
 Coordinator
 (336) 373-7662
 2503 White Street
 Greensboro, NC 27405

Application Data

Application Number: 4101086.24A

Date Received: 03/14/2024

Application Type: Renewal

Application Schedule: TV-Renewal

Existing Permit Data

Existing Permit Number: 08830/T10

Existing Permit Issue Date: 05/08/2023

Existing Permit Expiration Date: 09/30/2024

Total Actual emissions in TONS/YEAR:

CY	SO2	NOX	VOC	CO	PM10	Total HAP	Largest HAP
2022	1.31	11.68	3.63	53.27	3.13	2.37	1.33 [Hydrogen chloride (hydrochlori]
2021	0.8700	7.76	3.62	35.39	2.16	1.92	0.8815 [Hydrogen chloride (hydrochlori]
2020	0.6400	6.24	3.67	28.43	1.79	1.77	0.7082 [Hydrogen chloride (hydrochlori]
2019	1.03	10.03	3.94	45.71	2.62	2.23	1.14 [Hydrogen chloride (hydrochlori]
2018	1.51	14.66	4.09	66.83	3.88	2.80	1.66 [Hydrogen chloride (hydrochlori]

Review Engineer: Luke Mayer

Review Engineer's Signature:

Date:

Comments / Recommendations:

Issue 08830/T11

Permit Issue Date: Date needed

Permit Expiration Date: Date needed

1. Purpose of Application

The City of Greensboro – White Street Landfill currently holds Title V Permit No. 08830T10 with an expiration date of September 30, 2024, for a landfill facility in Greensboro, Guilford County, North Carolina. This permit application is for a permit renewal without modification. The renewal application was received on March 13, 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.

This permit will clarify the nature of the control devices used alongside the landfill-related emissions sources. Previously, control devices CD-1 and CD-3 were described as servicing individual portions of the landfill; CD-1 was grouped with sources ES-1 and ES-2, the non-active landfill portions, while CD-3 was grouped with ES-3, the active landfill portion. On July 29, 2024, White Street Landfill clarified in a message sent through their consulting team, SCS Engineers P.C., that both control devices are adequate to service the entire landfill if needed, and work in tandem rather than separately. This message included a certification statement from the facility's responsible official and director of field operations, Mr. Griffin Hatchell. This permit will include updates where necessary to reflect this correction.

2. Facility Description

White Street Landfill is a municipal solid waste facility owned and operated by the City of Greensboro. The landfill is located on approximately 890 acres within the city limits and is divided into three Phases. Phase I is an unlined, 85-acre cell containing approximately 2.72 million tons of waste that was closed in 1978. Phase II is an unlined, 135-acre site containing approximately 5.5 million tons of refuse that was closed in 1998. Phase III is a RCRA Subtitle D lined unit of approximately 52 acres with a design capacity of 4.8 million tons. Phase III is subdivided into three cells and contains a leachate collection system. This facility used to receive municipal solid waste (MSW) from the City of Greensboro and Guilford County, but currently the landfill now receives only yard waste such as branches and leaves, construction and demolition (C&D) waste, which is placed on the top of Phase II of the landfill, and some leftover dewatered sewage sludge and sludge incineration ash from the City of Greensboro - T.Z. Osborne POTW, which is placed in Phase III of the landfill. The facility used to receive land clearing and inert debris (LCID) even after it stopped receiving MSW but has ceased the practice.

The following emissions sources are active at White Street Landfill:

- Non-active (unlined) portion of landfill (**ID No. ES-1**)
- Non-active (unlined) portion of landfill (**ID No. ES-2**)
- Active (lined) portion of landfill (**ID No. ES-3**)

The following control devices are active at White Street Landfill:

- One candle stick-type flare (2800 scfm design flow rate) (**ID No. CD-1**)
- One candle stick-type flare (1500 scfm design flow rate) (**ID No. CD-3**)
- Landfill gas treatment system (filtration, compression, and dewatering via refrigeration) (**ID No. CD-Treatment**)
- One landfill gas collection and control system (**ID No. GCCS-1**)
- One landfill gas collection and control system (**ID No. GCCS-2**)

Finally, the following insignificant sources are active at White Street Landfill:

- Leachate Management System (**ID No. IES-5**)

- One 20,000 gallon Diesel fuel underground storage tank (**ID No. IES-7**)
- One 10,000 gallon unleaded gasoline underground storage tank (**ID No. IES-8**)
- Diesel fuel-fired wood grinder (portable non-road engine, 1050 hp) (**ID No. IES-8E**)
- Natural gas fired emergency engine (70kW) (**ID No. IES-9**)

Emission Source ID No.	Emission Source Description	Control Device ID No.	Control Device Description
ES-1 MACT AAAA	Non-active (unlined) portion of landfill	GCCS-1	One landfill gas collection and control system
		CD-1 and CD-3	One candle stick-type flare (2800 scfm design flow rate) and one candle stick-type flare (1500 scfm design flow rate)
ES-2 MACT AAAA	Non-active (unlined) portion of landfill	CD-Treatment	Landfill gas treatment system (filtration, compression, and dewatering via refrigeration)
ES-3 MACT AAAA	Active (lined) portion of landfill	GCCS-2	One landfill gas collection and control system
		CD-1 and CD-3	One candle stick-type flare (2800 scfm design flow rate) and one candle stick-type flare (1500 scfm design flow rate)
		CD-Treatment	Landfill gas treatment system (filtration, compression, and dewatering via refrigeration)

It should be noted that the gas treatment system, CD-Treatment, is no longer used. This system was purchased and installed in 2006 and was required by NSPS Subpart WWW when the landfill exceeded the 50 Mg per year PTE threshold. It was designed to chill the landfill gas, filter any possible particulate matter out, and remove any remaining moisture before it was sent to Cone Mills (a nearby textile manufacturing plant that has since been shut down).

The facility is a Title V facility because it has a design capacity greater than 2.5 million megagrams and 2.5 million cubic meters per year and because potential emissions of carbon monoxide (CO) from the facility exceed 100 tons per year. This facility is also required to hold a Part 70 permit under 40 CFR 62.16711(e).

3. History/Background/Application Chronology

History/Background

October 15, 2019 TV permit renewal issued. Air Permit No. 08830T09 was issued on October 15, 2019, with an expiration date of September 30, 2024. (*See Joshua L. Harris' TV review for permit No. 08830T09, dated October 15, 2019*)

May 8, 2023 Air Permit No. 08830T10 was issued due to the previous air permit being reopened for cause. This new permit updated existing MACT AAAA conditions to include new changes from the February 14, 2022 Federal Register, Volume 87,

Issue 30, replaced 40 CFR 60 Subpart WWW regulations with 40 CFR 62 Subpart OOO, and incorporated a new insignificant source (IES-9) that had been previously submitted as a 502(b)(10) minor modification. *(See Massoud “Max” Eslambolchi’s TV review for permit No. 08830T10, dated May 8, 2023)*

Application Chronology

March 13, 2024	Received permit application 4101086.24A for renewal.
March 14, 2024	Sent acknowledgment letter indicating that the application for permit renewal was complete.
June 18, 2024	Request for clarification on the control device linkage sent by regional inspector Robert Barker to DAQ Title V permitting engineer Massoud “Max” Eslambolchi and facility contacts.
July 19, 2024	Application transferred to Luke Mayer.
July 29, 2024	Received message from consultants affiliated with the applicant that clarified the nature of flare control devices (ID Nos. CD-1 and CD-3), indicating that they work in tandem rather than separately. Message was certified by responsible official and director of field operations Mr. Griffin Hatchell.
September 30, 2024	Draft permit and review forwarded to supervisor for comments.
October 1, 2024	Comments received from supervisor. Formatting revisions needed in permit. Additional regulatory, emissions, and air toxics review needed in statement of basis.
October 10, 2024	Draft permit and review forwarded to applicant, SSCB, and regional office for comments.
October 16, 2024	Samir Parekh from the SSCB indicated via email that they had no comments on the draft permit or permit review.
October 22, 2024	Davis Murphy from the Winston-Salem Regional Office indicated via email that they had no comments on the draft permit or permit review.
December 5, 2024	Lewis Walker indicated via phone that they had no comments on the draft permit or permit review. Mr. Walker also indicated that a response to the PFAS questionnaire would arrive soon, prepared by contractor Richard Lovett.
January 27, 2024	Response received to DAQ’s PFAS Questionnaire.
date	Draft permit and permit review forwarded to public notice via DAQ website.
date	Public comment period ends. Comments were/were not received. <i>Complete as necessary; direct reader to Section 10 of this Document for summary of comments and responses.</i>

date EPA comment period ends. Comments were/were not received. *Complete as necessary; direct reader to Section 10 of this Document for summary of comments and responses.*

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 permit revision numbers - Reformatted permit in accordance with current TV permitting shell
4	1	Corrected the linkage of control devices CD1 and CD3. CD1 and CD3 apply to both the active and inactive landfill portions and work in tandem rather than separately. This change is to correct the permit and does not represent a physical change or a change in the facility's method of operation by the Permittee.
44	2.1 A.6	Added PFAS disclosure condition under 15A NCAC 02Q .0308(a)(1) and 15A NCAC 02Q .0309(b)
46	4	Updated General Conditions with most recent version (Version 8 dated 07/10/2024)

This permit renewal is being processed without modification, and no changes to the Title V Equipment Editor are needed. As mentioned above, the nature of control devices CD-1 and CD-3 will need to be corrected to reflect that they are applicable to both the inactive (unlined) and active (lined) portions of the landfill area. It must be emphasized that this is a correction to the permit and does not reflect a physical change at the facility.

It has been noted in inspector Robert Barker's recent inspection report, dated March 8, 2023, that the facility's treatment system (**ID No. CD-Treatment**) is no longer active. This treatment system was used to chill gas for transport to Cone Mills, a nearby textile manufacturing plant that has since been shut down. However, the permittee did not mark this device for removal in their permit renewal application, so it shall remain for now.

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.

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

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

White Street Landfill is subject to the following regulations. The facility's equipment and operations have not changed since the last renewal in 2019, other than the addition of an insignificant source. As this source is an emergency engine, new related regulations have become active. 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 White Street Landfill's methane burning operations could produce sulfur dioxide emissions from the burning of landfill gas (LFG). In order to reduce emissions of methane generated by the decomposition of solid waste at the landfill, two candle stick-type flares (**ID Nos. CD-1 and CD-3**) are used to combust collected landfill gas. Landfill gas is primarily composed of methane and carbon dioxide and is somewhat similar in overall composition to natural gas. In the statement of basis for the previous issuance (Air Permit No. 08830T10), the SO₂ emission rate of the flares was estimated. See Massoud "Max" Eslambolchi's TV review for permit No. 08830T10, dated May 8, 2023, for more information. For LFG combustion in the flares, using AP-42 Chapter 2.4, Equations 3, 4, and 7, the SO₂ emission rate was determined to be 0.030 pounds per million Btu at both flares' total maximum capacity of 130.55 million Btu per hour, 4300 scfm and assuming a heat value of 506 Btu per ft³ of LFG combusted (see calculation below). This estimated value (0.030 pounds per million Btu) is below the sulfur dioxide threshold. No monitoring, recordkeeping, or reporting requirements are applied to these sources, and the most recent inspection report indicates the facility is complying with this rule without issue. Continued compliance is expected.

To calculate potential SO₂ emissions, AP-42 Chapter 2.5 was used along with information submitted by the facility:

- Total design rating for both flares (2800 scfm + 1500 scfm) = 4,300 ft³/minute (or 121.76 m³/min = 7,305.7 m³/hour)
- Methane is only 50% of this gas stream (3,652.85 m³/hour)
- Q_s = Emission rate of reduced sulfur compounds, m³/hour
- C_s = Concentration of reduced sulfur compounds (100 ppmv, as H₂S assumed by the facility)
- Multiplication factor for 50% methane concentration in landfill gas = 2.0

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).

- Molecular weight of H₂S = 34.08 g/mole
- Molecular weight of sulfur = 32.06 g/mole

$$Q_{H_2S} = 2.0 \times Q_{CH_4} \times \left(\frac{C_s}{1 \times 10^6} \right) \quad (\text{AP-42, Equation 3})$$

$$Q_{H_2S} = 2.0 \times 3,652.85 \frac{\text{m}^3}{\text{hour}} \times \left(\frac{100 \text{ parts}}{1 \times 10^6} \right) = 0.731 \frac{\text{m}^3}{\text{hour}}$$

Conversion of H₂S flow rate to flow rate of sulfur only:

$$Q_s = Q_{H_2S} \times \frac{MW_s}{MW_{H_2S}} = 0.731 \frac{\text{m}^3 H_2S}{\text{hour}} \times \frac{32.06 \frac{\text{g S}}{\text{mole}}}{34.08 \frac{\text{g H}_2\text{S}}{\text{mole}}} = 0.687 \frac{\text{m}^3 S}{\text{hour}}$$

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

$$UM_s = 0.687 \frac{\text{m}^3}{\text{hour}} \times \left[\frac{32.06 \frac{\text{g}}{\text{gmol}} \times 1 \text{ atm}}{8.205 \times 10^{-5} \frac{\text{m}^3 \cdot \text{atm}}{\text{gmol} \cdot \text{K}} \times 1000 \frac{\text{g}}{\text{kg}} \times (273 + 25^\circ \text{C}) \text{K}} \right] \times 2.2 \frac{\text{pounds}}{\text{kg}}$$

$$UM_s = 1.98 \frac{\text{pounds}}{\text{hour}}$$

To calculate SO₂ 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 (2.11 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 SO₂ to the molecular weight of sulfur

$$SO_2 \text{ emitted} = 1.98 \frac{\text{lb}}{\text{hour}} \times \frac{100}{100} \times 2.0 \times \frac{8760 \text{ hours}}{\text{year}} \times \frac{1 \text{ ton}}{2000 \text{ lb}} = 17.34 \frac{\text{tons SO}_2}{\text{year}}$$

$$\text{Emission Rate SO}_2 = \frac{17.34 \text{ tons SO}_2}{\text{year}} \times \frac{2000 \text{ lbs}}{1 \text{ ton}} \times \frac{1 \text{ year}}{8760 \text{ hours}} \times \frac{\text{hour}}{130.55 \text{ million Btu}} = \frac{0.030 \text{ lbs SO}_2}{\text{million Btu}}$$

15A NCAC 02D .0521: Control of Visible Emissions – The White Street Landfill’s methane burning operations could produce visible emissions from the burning of landfill gas (LFG). In order to reduce emissions of methane generated by the decomposition of solid waste at the landfill, two candle stick-type flares (**ID Nos. CD-1 and CD-3**) are used to combust collected landfill gas. Landfill gas is primarily composed of methane and carbon dioxide and is somewhat similar in overall composition to natural gas. Traditionally, this type of fuel produces very minimal visible emissions, if any, when burned. As a result, there are no monitoring, recordkeeping, or reporting requirements for the combustion of this fuel by any emission sources.

All units of equipment subject to the rule appear to have been constructed after July 1, 1971, so they are required to comply with the following limit(s): no visible emissions from the affected sources shall exceed 20% opacity when averaged over a 6-minute period. 6-minute averaging periods may exceed 20% opacity only if: no 6-minute averaging period exceeds 87% opacity; no more than one 6-minute averaging period exceeds 20% opacity in one hour; and no more than four 6-minute averaging

periods exceed 20% opacity in 24 hours. The most recent accessible inspection report indicates that the facility is complying with requirements, and that visible emissions are generally restricted to the flame itself. Continued compliance is expected.

15A NCAC 02D .0524: New Source Performance Standards – The White Street Landfill is subject to two New Source Performance Standards: 40 CFR 62 Subpart OOO (which, in the case of this permit, replaces conditions from 40 CFR 60 Subpart WWW), and its natural gas-fired emergency engine (**ID No. IES-9**) is subject to 40 CFR 60 Subpart JJJJ. The facility is expected to observe any requirements in 40 CFR 60 that it is subject to. More information about this facility's requirements under New Source Performance Standards (NSPS), and its activities in maintaining compliance with them, can be found below in the "NSPS" regulatory review section. The most recent accessible inspection report indicates that the facility has complied with NSPS requirements so far. 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. Guilford 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 White Street Landfill, within the county. Therefore, the permit condition for 15A NCAC 02D .0958 will not be included under this permit renewal.

15A NCAC 02D .1111: Maximum Achievable Control Technology – The White Street Landfill is subject to three NESHAPs: 40 CFR 63 Subparts AAAA, ZZZZ, and CCCCCC. The facility is expected to observe any requirements in 40 CFR 63 (NESHAPs) that it is subject to. More information about this facility's requirements under National Emission Standards for Hazardous Air Pollutants (NESHAPs), and its activities in maintaining compliance with them, can be found below in the "NESHAPs" regulatory review section. The most recent accessible inspection report indicates that the facility has complied with NESHAP requirements so far. 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 JJJJ. 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 White Street Landfill 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.

40 CFR 60 Subpart JJJJ: New Source Performance Standards for Stationary Spark Ignition Internal Combustion Engines – The White Street Landfill facility installed one 70 kW natural gas-fired emergency engine (**ID No. IES-9**) on May 8, 2023, which is subject to NSPS JJJJ. In the case of emergency engines, NSPS JJJJ applies for any unit installed after January 1, 2009. It should be noted that the only source subject to NSPS JJJJ at this facility is an insignificant source, so no NSPS JJJJ-specific language will be included in the permit. Despite the fact that there will be no permit condition, the facility is still required to comply with Subpart JJJJ. Continued compliance is expected.

The last permit renewal for this facility was issued on October 15, 2019. Since then, the language for NSPS JJJJ has been updated nine times: on October 7, 2020; on December 4, 2020; on December 7, 2020; on January 1, 2021; on June 29, 2021; on July 29, 2021; on August 10, 2022; on January 24, 2023; and on March 27, 2023. As the only NSPS JJJJ-applicable source is permitted as insignificant, language for NSPS JJJJ in the permit is very minimal if not nonexistent. No updates are needed to the permit language to reflect the recent changes.

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 White Street Landfill 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: 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. 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 (08830T09) in 2021. This subpart was included when the permit was reissued. See Massoud "Max" Eslambolchi's Title V permit review for air permit No. 08830T10, dated May 8, 2023. Until EPA approval of the NC SIP landfill 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 facility is required to observe the emission limits, operating standards, and compliance schedule included in this subpart. The facility must 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 inspection report indicates that the facility has complied with the Subpart OOO requirements so far. The last periodic compliance report was received on July 26, 2024 by the Winston-Salem regional office. Continued compliance is expected.

The last permit renewal was issued on October 15, 2019. However, 40 CFR 62 Subpart OOO was only added to the permit as of May 8, 2023 with the last permit issuance, which was an issuance 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 White Street 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: 40 CFR 63 Subpart AAAA, ZZZZ, and CCCCCC. This permit renewal does not change the facility's MACT 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 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 of HAPs categorically do not apply to this facility.

40 CFR 63 Subpart AAAA: National Emission Standards for Hazardous Air Pollutants: Municipal Solid Waste Landfills – All three portions (**ID Nos. ES-1, ES-2, and ES-3**) of the White Street Landfill, active and inactive, are subject to 40 CFR 63, Subpart AAAA as the facility has accepted waste since November 8, 1987, and it has a design capacity greater than 2.5 million Mg and 2.5 million m³. The facility shall demonstrate compliance with 40 CFR 63 Subpart AAAA by demonstrating compliance with 40 CFR 60 Subpart WWW or equivalent federal plan; in this case, 40 CFR 62 Subpart OOO. See the regulatory review for 40 CFR 62 Subpart OOO in the NSPS section above for more information. The most recent accessible inspection report indicates that the facility has complied with 40 CFR 62 Subpart OOO and therefore with 40 CFR 63 Subpart AAAA. Continued compliance is expected.

The last permit renewal for this facility was issued on October 15, 2019. Since then, the language for 40 CFR 63 Subpart AAAA has been updated four times: on March 26, 2020; on October 13, 2020; on November 12, 2020; and on February 14, 2022. The latter 3 updates are largely unsubstantial, but the March 26, 2020 revision to this rule makes several significant changes to the regulation that would necessitate updates to the permit language. This revision includes, but is not limited to, revisions to requirements for GCCS installation, removal, monitoring, and operating standards. These updates were added as part of the T10 permit revision, so no updates are needed within this permit issuance.

40 CFR 63 Subpart ZZZZ: National Emissions Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines – The White Street Landfill facility’s 70 kW natural gas-fired emergency engine (**ID No. IES-9**) is subject to 40 CFR 63, Subpart ZZZZ because the facility is considered an area source for hazardous air pollutants (HAPs). The emergency engine is a stationary reciprocating internal combustion engine (RICE), and its only requirement is to comply with NSPS Subpart JJJJ according to 40 CFR 63.6590(c). As the unit is an insignificant source, no Subpart ZZZZ-specific conditions will be included in the permit language. Despite the fact that there is no permit condition, the facility is still required to comply with 40 CFR 63 Subpart ZZZZ. Continued compliance is expected.

The last permit renewal for this facility was issued on October 15, 2019. Since then, the language for 40 CFR 63 Subpart ZZZZ has been updated eight times: 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. None of these updates affect any of the existing permit language, so no changes are necessary in this permit renewal. The most recent revision on August 30, 2024 does include noteworthy updates, including new digital reporting requirements and clarifications to maintenance requirements, which the facility should be made aware of.

40 CFR 63 Subpart CCCCCC: National Emission Standards for Hazardous Air Pollutants for Source Category: Gasoline Dispensing Facilities – The White Street Landfill operates one underground 10,000 gallon unleaded gasoline storage tank (**ID No. IES-8**). Due to its size (10,000 gallons or more), the tank is subject to the requirements in 40 CFR 63.11117 within Subpart CCCCCC. As the unit is an insignificant source, no Subpart CCCCCC-specific conditions will be included in the permit language. Despite the fact that there is no permit condition, the facility is still required to comply with 40 CFR 63 Subpart CCCCCC. Continued compliance is expected.

PSD

As of the time of writing, this facility is not subject to any PSD regulations. The facility is not a major stationary source for the purposes of PSD permitting, because its actual and potential emissions of listed pollutants are below the threshold in 40 CFR 51.166(b)(1). As a municipal solid waste landfill, the facility is not among the source categories with lower thresholds, so its PSD permitting threshold is 250 tons per year. This permit renewal is not expected to affect the PSD status of this facility. Guilford County has triggered increment tracking under PSD for PM₁₀ and SO₂. This permit renewal is not expected to consume nor expand any increments.

112(r)

The facility is not subject to Section 112(r) of the Clean Air Act requirements because, according to the most recent inspection report, it does not store any of the regulated substances in quantities above the 112(r) thresholds. The facility has indicated on Form A3, included with the renewal application, that

none of the facility's processes are subject to 112(r). 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) at major TV facilities 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).

The White Street Landfill facility does operate several control devices. Each portion of the landfill is controlled by a gas collection system and up to two flares. The facility uses these control devices to comply with 40 CFR 63 Subpart AAAA and 40 CFR 62 Subpart OOO. Both of these rules were proposed after 1990, and therefore are exempt standards per 15A NCAC 02D .0614(b)(1)(A). The gas collection system and flares also regulate emissions (see 15A NCAC 02D .1806), but odorous emissions do not have a major source threshold and thus cannot trigger CAM conditions. This source is regulated by both NSPS and MACT regulations that were promulgated after 1990 and control the pollutants that would cause the facility to be subject to CAM rules. Ultimately, CAM will not be included in this permit renewal.

7. Facility Wide Air Toxics

The White Street Landfill facility is not subject to any NC Air Toxics requirements as it has not triggered an air toxics review in the past. An air toxics demonstration is not required as the facility is already subject to an area source MACT as previously mentioned. The NC Air Toxics program is not applicable.

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.

The facility is subject to Title V of the Clean Air Act because potential emissions of carbon monoxide exceed 100 tons per year and because it is subject to certain Subparts of 40 CFR 60, 62, and 63. See the regulatory review section above for more information. The facility's potential carbon monoxide (CO) emissions are projected to be about 211.56 tons per year, and primarily result from the operation of the two landfill gas-fired flares (**ID Nos. CD-1 and CD-3**). Total potential criteria pollutant emissions are projected to be about 277.48 tons per year. These emissions exceed the threshold for Title V-applicable sources, so the facility is subject to Title V. CO emissions are below the PSD permitting threshold of 250 tons per year, so the facility will not be subject to PSD. Total potential HAP emissions are projected to be about 6.24 tons per year. This is below the major source threshold for HAPs of 10 tpy of an individual HAP and/or 25 tons per year of any HAP combination, so the facility will be considered an area source rather than a major source for HAPs.

9. Compliance Status

DAQ has reviewed the compliance status of the White Street Landfill. During the most recent reported inspection, conducted on March 8, 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 July 26, 2024, and indicated compliance with all applicable requirements from January 1 through June 30 of 2024.

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. Regardless of proximity, all nearby states and local air programs will be notified in accordance with DAQ policy.

Public Notice of the Draft Title V Permit ran from XXXXXX XX, 2025 to XXXXXX XX, 2025.

EPA's 45-day review period ran concurrent with the 30-day Public Notice, from XXXXXX XX, 2025 to XXXXXX XX, 2025.

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. Lewis Walker on October 10, 2024, and a response was received on January 27, 2025. The facility's response is documented in Attachment 1 to this technical review. Based on the facility's response, the PFAS disclosure condition will be included in this permit renewal.

12. Recommendations

The permit renewal application for the City of Greensboro – White Street Landfill facility 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. 08830T11.

Attachment 1:
City of Greensboro – White Street Landfill’s Response to DAQ PFAS Questionnaire

October 30, 2024

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

Subject: White Street Landfill – Title V Air Quality Permit Renewal
Emerging Contaminants Screening Questions

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: 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. The landfill gas is being beneficially reused in renewable energy generation 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: Through accepting municipal solid waste under the DEQ Solid Waste Permit, the waste mass 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).

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 Environmental 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. There is currently no basis to attribute any emissions 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 generated by the GCCS is 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.

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: White Street Landfill recently conducted leachate sampling for PFAS as required and were submitted to NCDEQ. The results from the PFAS analysis can be provided again upon receipt.

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 systems, 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 we are aware of.

DAQ Question 9: Do you need technical assistance to answer the questions above.

Response: No

Sincerely,

Richard Lovett
Environmental Compliance Support Manager
City of Greensboro