NORTH CAROLINA
DIVISION OF AIR QUALITY
Application Review

Issue Date: xx

Region: Winston-Salem Regional Office
County: Guilford
NC Facility ID: 4100977
Inspector's Name: Robert Barker
Date of Last Inspection: 07/16/2021
Compliance Code: W / Violation - procedures

Facility Data

Applicant (Facility's Name): City of High Point - Eastside Wastewater Treatment Plant

Facility Address:
City of High Point - Eastside Wastewater Treatment Plant
5898 Riverdale Road
Jamestown, NC 27282

SIC: 4952 / Sewerage Systems
NAICS: 22132 / Sewage Treatment Facilities

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 .0515, .0516, .0521, .0524, .1110, .1111, and .1204
NSPS: Subparts O and IIII
NESHAP: Part 60, Subparts C and E, and Part 63 Subpart ZZZZ
PSD: N/A
PSD Avoidance: 02Q .0317
NC Toxics: N/A
112(r): N/A
Other: Part 62, Subpart LLL, and Part 503, Subpart E

Contact Data

Facility Contact	Authorized Contact	Technical Contact
Michael Swan Residuals Superintendent (336) 883-3361 5898 Riverdale Drive Jamestown, NC 27282	Derrick Boone Assistant Public Services Director (336) 883-3279 PO Box 230 High Point, NC 27261	John Thomas Eastside Wastewater Superintendent (336) 822-4730 PO Box 230 High Point, NC 27261

Application Data

Application Number: 4100977.21B, 4100977.21C, 4100977.22A
Date Received: 10/25/2021, 11/22/2021, 12/20/2022.
Application Type: Renewal, Modification, Modification
Application Schedule: TV-Renewal, TV-Minor, TV-Minor

Existing Permit Data
Existing Permit Number: 08074/T15
Existing Permit Issue Date: 03/08/2021
Existing Permit Expiration Date: 11/30/2021

Total Actual emissions in TONS/YEAR:

CY	SO2	NOX	VOC	CO	PM10	Total HAP	Largest HAP
2021	0.1200	10.74	0.2900	2.85	0.2200	0.0040	0.0016 [Benzene]
2020	0.1500	8.73	0.2300	2.31	0.1300	0.0028	0.0008 [Benzene]
2019	0.6300	6.03	0.2000	1.10	0.1200	0.0026	0.0008 [Benzene]
2018	0.1600	4.10	0.1300	1.06	0.1200	0.0020	0.0009 [Benzene]
2017	0.0200	6.55	0.1800	1.63	0.1900	0.0030	0.0015 [Benzene]

Review Engineer: Rahul Thaker Review Engineer's Signature: Date: xx	Comments / Recommendations: Issue 08074/T16 Permit Issue Date: xx Permit Expiration Date: xx

1. Purpose of Application

City of High Point - Eastside Wastewater Treatment Plant ("City of High Point"), Jamestown, Guilford County, North Carolina, submitted a permit application (4100977.21B) for renewing its Title V permit 08074T15, in accordance with 15A NCAC 02Q .0513 "Permit Renewal and Expiration".

City of High Point separately submitted permit applications (4100977.21C and 4100977.22A) for revising the operating parameter values for the existing sewage sludge incinerator (SSI, ID No. ES-01) and the control equipment, namely wet scrubber (ID No. CD-01) and sorbent polymer catalyst adsorber (ID No. CD-04), in accordance with 15A NCAC 02Q .0515 "Minor Permit Modifications". These minor modification applications will be consolidated into the above referenced renewal application for processing.

2. Facility Description

The facility is a wastewater treatment plant (publicly owned treatment works) with a design capacity of 26 million gallons per day. The unit operations include screening, grit removal, primary clarification, activated sludge process, secondary clarification, biological nutrient removal operations (nitrogen and phosphorous removal), effluent filtration, ultraviolet disinfection, post aeration and solids handling (dewatering and incineration), and odor control.

3. Permitting History

December 19, 2016	Initial Title V permit 08074T10 was issued.
February 14, 2017	Permit 08074T11 was issued to correct the Winston-Salem Regional Office's address, per 02Q .0514 "Administrative Permit Amendments".
February 23, 2018	Permit 08074T12 was issued for construction and operation of a new adsorption unit for mercury emissions removal from the existing SSI, as a 1st step of "two-step" significant modification, per 02Q .0501(b)(2) [formerly 02Q .0501(c)(2)].
July 20, 2020	Permit 08074T13 was issued for the completion of a 2nd step of "two-step" significant modification provision per 02Q .0501(b)(2) [formerly 02Q .0501(c)(2)] for the previously permitted adsorption unit for mercury emissions removal from the existing SSI.
September 9, 2020	Permit 08074T14 was issued for revising the maximum average daily concentration limits (mg/kg) for lead, arsenic, cadmium, chromium, and nickel for the sludge being fed to the existing SSI, per "one-step" significant modification provision in 02Q .0501(b)(1) [formerly 02Q .0501(c)(1)].
March 8, 2021	Permit 08074T15 was issued, revising the operating parameters of the existing SSI and the control equipment, namely wet scrubber and sorbent polymer catalyst adsorber, per 02Q .0515 "Minor Permit Modifications".

4. Applications Chronology

10/25/2021	DAQ received the renewal application (4100977.21B).
11/22/2021	DAQ received the minor modification application (4100977.21C).

11/30/2021	Deemed the application (4100977.21C) complete effective on this day.
12/20/2022	DAQ received the minor modification application (4100977.22A). Deemed it complete effective on this day.

5. Statement of Compliance

Ryan Dylan and Robert Barker of Winston-Salem Regional Office inspected the facility on August 17, 2022. They concluded, "based on visual observations and record review, the City of High Point - Eastside Wastewater Treatment Plant appeared to be operating in compliance with all applicable Air Quality standards and regulations at the time of this inspection, with the exception of the self-reported CO exceedance that occurred on August 7, 2022 and was self-reported on August 17, 2022." It was noted that this violation would be processed in accordance with the facility's current Special Order by Consent (SOC) as discussed below.

With regard to the renewal application 4100977.21B, the facility failed to apply for renewal of its Title V permit 08074T15 in a "timely" manner (i.e., at least 6 months from the Title V permit expiration date of November 30, 2021). The owner submitted the renewal application on October 25, 2021, which was only 35 days prior to the permit expiration date. Thus, the facility owner does not have an "application shield" for its failure to apply for a timely renewal. DAQ believes that the facility has lost its ability to operate legally beyond this permit expiration date. The DAQ issued an NOV/NRE on December 13, 2021 for operating the facility with an expired Title V permit. Then, the agency (acting on behalf of Environmental Management Commission) and the City of High Point agreed to the terms of SOC 2022-001 to allow the facility to continue to operate while the permit renewal application is being processed by DAQ for this matter between DAQ. The DAQ assessed a civil penalty of $24,000. The SOC allows the facility to continue complying with the expired permit (08074T15) with certain exceptions to the operating parameter values for the existing SSI and control devices, which are discussed below in Section 6 below. The SOC was scheduled to expire upon issuance of the renewed air quality permit or on December 31, 2022, whichever occurred first. However, it was extended until April 30, 2023, by issuance of a "Minor Modification of Special Order of Consent SOC, 2022-01", which was executed on December 19, 2022.

6. Regulatory Review

The current permit includes the following applicable requirements for various sources:

15A NCAC 02D .0515 "Particulates from Miscellaneous Industrial Processes"
15A NCAC 02D .0516 "Sulfur Dioxide Emissions from Combustion Sources"
15A NCAC 02D .0521 "Control of Visible Emissions"
15A NCAC 02D .0524 "New Source Performance Standards"
15A NCAC 02D .1110 "National Emission Standards for Hazardous Air Pollutant"
15A NCAC 02D .1111 "Maximum Achievable Control Technology"
15A NCAC 02D .1204 "Sewage Sludge Incineration Units"
15A NCAC 02Q .0317 "Avoidance Conditions" for 15A NCAC 02D .0530 "Prevention of Significant Deterioration"
40 CFR 503 Subpart E "Standards for the Use or Disposal of Sewage Sludge: Incineration"

All of the above requirements are still applicable to the facility sources. The current permit includes these requirements with monitoring (including record keeping) and reporting, sufficient to comply with the requirements in both 15A NCAC 02Q .0508 and 40 CFR 70.6(a)(3) and (c)(1). Hence, these requirements will not be discussed (i.e., detail regulatory review is not included) herein, although if any stipulation in the current permit for the above applicable requirements needs any update due to change in the requirements or a change is needed in the stringency of monitoring due to previous compliance issues, etc., they will be revised as appropriate in this renewal permit. Finally, the current permit does not include the federal plan requirements for the existing SSIs in 40 CFR 62 Subpart LLL. This applicable requirement will be included with the detailed provisions in the renewed permit, and is discussed below:

<u>Part 62 Subpart LLL "Federal Plan Requirements for Sewage Sludge Incineration Units Constructed on or Before October 14, 2010"</u>

Background

The DAQ had erroneously removed the federal plan requirement for the subject SSI through the permit revision 08074T14 (September 9, 2020), concluding that the revised requirements in 02D .1204 replaced the federal plan requirement. This federal plan requirement for the existing SSIs is a "stop-gap" measure until NC's state plan containing the revisions to 02D .1204 is submitted and approved by the EPA, implementing the requirements in 40 CFR 60 Subpart MMMM "Emission Guidelines and Compliance Times for Existing Sewage Sludge Incineration Units (EG)". NC has not yet submitted its state plan for approval to EPA. It is noted that the federal plan requirement is enforceable by all; EPA, citizens under the CAA, and NCDAQ; while the requirements in 02D .1204, implementing this EG is state-enforceable only at this time.

Separately, it should be noted that the facility had submitted to the DAQ an alternative monitoring plan (AMP), pursuant to both the federal plan and the EG for the mercury emission control device (i.e., Sorbent Polymer Composite Material Adsorbing Modules, ID No. CD-4). This monitoring plan was submitted to the DAQ on August 31, 2020. DAQ, in turn, forwarded the plan to the EPA Region 4 for review and approval. EPA disapproved the submitted AMP on July 22, 2022. Accordingly, City of High Point - Eastside Wastewater Treatment Plant resubmitted a revised AMP to EPA on August 18, 2022.

Emission Limits, Emission Standards and Operating Limits and Requirements

- The following emissions limits and standards must be met by the final compliance date, March 21, 2016, or upon startup of an SSI that has been out of service. These limits and standards apply at all times the unit is operating and during periods of malfunction. The limits and standards also apply to emissions from a bypass stack or vent while sewage sludge is in the combustion chamber (i.e., until the sewage sludge feed to the combustor has been cut off for a period of time not less than the sewage sludge incineration residence time). [40 CFR §62.15955 and Table 2 (FBI) to Subpart LLL of Part 62]

Air Pollutant	**Emission Limit for an Existing Fluidized Bed SSI[1]**
Particulate Matter	18 mg/dscm
Hydrogen Chloride	0.51 ppm/dry volume
Carbon Monoxide	64 ppm/dry volume
Dioxins/furans (total mass basis)[2] or Dioxins/furans (toxic equivalency basis)	1.2 ng/dscm Or 0.10 ng/dscm
Mercury	0.037 mg/dscm
Nitrogen Oxides	150 ppm/dry volume
Sulfur Dioxide	15 ppm/dry volume
Cadmium	0.0016 mg/dscm
Lead	0.0074 mg/dscm
Fugitive Emissions from Ash Handling	Visible emissions from combustion ash and from ash conveying system for no more than 5 percent of any compliance test hourly observation period.

[1] All emission limits are measured at 7-percent oxygen, dry basis at standard conditions.
[2] You have the option to comply with either the dioxin/furan emission limit on a total mass basis or the dioxin/furan emission limit on a toxic equivalency basis.

- The following operating limits and requirements for SSIs must be met to maintain compliance. The operating limits apply at all times that sewage sludge is in the combustion chamber (i.e., until the sewage sludge feed to the combustor has been cut off for a period of time not less than the sewage sludge incineration residence time). [40 CFR §62.15960 and Table 4 to Subpart LLL of Part 62]

    - Site-specific minimum operating temperature of the combustion chamber or afterburner temperature established through initial performance testing;

- Site-specific minimum pressure drop across each scrubber, minimum flow rate of scrubber liquid, and minimum pH of scrubber liquid established through initial performance testing;

- For SSIs with fabric filters to comply with emission limits, a bag leak detection system must be installed and operated such that the alarm does not sound more than 5% of the operating time during a 6-month period;

- Meet the operating limits in the site-specific fugitive emission monitoring plan as specified in §62.15995(d);

- Monitor the feed rate and moisture content of the sewage sludge fed to the SSI by implementing the following:

    - Continuously monitor the sewage sludge feed rate and calculate a daily average for all hours of operation during each 24-hour period. Keep a record of the daily average feed rate, as specified in §62.16025(f)(3)(ii); and

    - Take at least one grab sample per day of the sewage sludge fed to the incinerator. Calculate a daily average for the grab samples if more than one grab sample is taken per day. Keep a record of the daily average moisture content, as specified in §62.16025(f)(3)(ii).

Initial Compliance Requirements

- The owner/operator is required to demonstrate initial compliance with the emission limits and standards listed above by conducting a performance test or using a continuous emissions monitoring system or continuous automated sampling system as specified in §62.15980. The owner must submit an initial compliance report, as specified in §62.16030(b).

- Consistent with §62.15985, the owner/operator shall establish the site-specific operating limits during your initial performance test required in §62.15980.

- Per §62.15990, the owner/operator shall conduct an initial air pollutant control device inspection by the final compliance date. For air pollution control devices installed after the compliance date, an air pollution control device inspection must be conducted within 60 days after installation of the control device. All necessary repairs must be completed within 10 operating days following the air pollution control device inspection unless approval from the Administrator is given to establish a date whereby all necessary repairs of the SSI unit must be completed.

- The owner/operator shall develop and submit to EPA a site-specific monitoring plan for continuous monitoring, bag leak detection, and ash handling systems in accordance with the requirements of §62.15995.

Continuous Compliance Requirements

- Per §62.16000, the Permittee shall demonstrate continuous compliance with the emission limits and standards in Table 2 (FBI) using either performance testing or the use of a continuous monitoring system.

- Per §62.16005, the Permittee shall demonstrate continuous compliance with the site-specific operating limits through continuously monitoring the operating parameters.

- Per §62.16010, the Permittee shall conduct an annual air pollution control device inspection no later than 12 months following the previous annual air pollution control device inspection. All necessary repairs must be completed within 10 operating days following the air pollution control device inspection unless approval from the Administrator is given to establish a date whereby all necessary repairs of the SSI unit must be completed.

- Per 62.16015, the Permittee shall meet the applicable performance testing, monitoring, and calibration requirements, for complying with the emission limits and standards.

- Per §62.16020, the Permittee shall install, calibrate, and maintain the continuous parameter monitoring systems for complying with the applicable operating limits.

Recordkeeping and Reporting

- Consistent with §62.16025, the following records shall be maintained onsite for a period of at least 5 years:

    - Calendar date of each record in §62.16025(a);
    - Final control plan and associated notifications in §62.16025(b);
    - Operator training – documentation of training procedures and information, records showing names of SSI unit operators and other plant personnel who have completed training, and records showing periods when no qualified operators were accessible in accordance with §62.16025(c)(3) and (c)(4);
    - Air pollution control device initial and annual inspections in §62.16025(d);
    - Performance test reports, as specified in §62.16025(e), including the initial, annual, and any subsequent test reports, including calculations. Maintain a record of the hourly dry sludge feed rate measured during performance test runs;
    - Continuous monitoring data as specified in §62.16025(f);
    - Other records for continuous monitoring systems as specified in §62.16025(g);
    - Deviation reports in §62.16025(h);
    - Equipment specifications and operations and maintenance requirements in §62.16025(i);
    - Inspections, calibrations and validation checks of monitoring devices in §62.16025(j);
    - Monitoring plan and performance evaluations for continuous monitoring systems §62.16025(k);
    - Less frequent testing in §62.16025(l);
    - Use of bypass stack in §62.16025(m); and
    - Records of malfunctions in §62.16025(n).

- Consistent with §62.16030, the Permittee shall submit the following reports to the Administrator:

    - Final control plan and final compliance report no later than 10 business days after the compliance date in §62.16030(a);
    - Initial compliance report no later than 60 days following the initial performance test in §62.16030(b);
    - Annual compliance report in §62.16030(c) no later than 12 months following the submission of the initial compliance report. Subsequent annual compliance reports must be submitted no more than 12 months following the previous annual compliance report;
    - Deviations reports as specified in §62.16030(d);
    - Qualified operation deviation reports as specified in §62.16030(e);
    - Notification of force majeure in §62.16030(f);
    - Other notifications in §62.16030(g):
        - Notify the Administrator 1 month before starting or stopping use of a continuous monitoring system for determining compliance with any emission limit.
        - Notify the Administrator 30 days prior to any performance test, to afford the Administrator the opportunity to have an observer present.
        - Notify the Administrator at least 7 days prior to the date of a reschedule performance test for which notification was previously made.

7. Other Changes

The applicant submitted minor modification applications 4100977.21C and 4100977.22A to revise the operating parameters values as required. These minor modification applications will be consolidated into the renewal application (4100977.21B) for processing.

The owner/operator of the subject facility is required to submit a permit application to the DAQ to revise its existing permit whenever more stringent operating parameters were observed during any stack testing for the existing SSI

(ID No. ES-01), or the control devices (wet scrubber ID Nos. CD-01 and sorbent polymer catalyst composite material adsorber ID No. CD-04), demonstrating compliance with the emissions standards in NSPS Subpart O "Standards of Performance for Sewage Treatment Plants", 15A NCAC 02D .1204 "Sewage Sludge Incineration Units", and 40 CFR 62 Subpart LLL "Federal Plan Requirements for Sewage Sludge Incineration Units Constructed on or Before October 14, 2010", as applicable. Accordingly, the permit conditions in Section 2.1.A.2.f.iii. and Section 2.1.A.4.e. require permit modifications for revising the operating parameters that are more stringent than the permit-included values. The owner/operator conducted stack tests in 2021 (September 21-22, and October 7, 2021) and 2022 (September 20 and October 27, 2022) to demonstrate compliance with the NSPS Subpart O, 02D .1204, and 40 CFR 62 Subpart LLL, for the existing sewage sludge incinerator unit. The following Table 7-1 includes the summary of stack tests results versus the current permit values:

Table 7-1 Stack Tests Results v. Current Permit Values

Equipment	Operating Parameter Description	Stack Test Results 2021	Stack Test Results 2022	Current Permit Value	Data Averaging Period for Compliance	Allowable Variance*
SSI (ID No. ES-01)	Minimum combustion chamber operating temperature (lowest 4-hour average), °F	1343	1293	1333	12-hour block	Accuracy percentage of ±1.0 percent of the temperature measured
	Maximum average (1-hour) exhaust gas oxygen content, %	10.89	10.6	11.01	1-hour period	N/A
Wet Scrubber (ID No. CD-01)	Minimum pressure drop (lowest 4-hour average), inch H_2O	36.5	34.2	39.1	12-hour block	Accuracy percentage of ±5 percent
	Average pressure drop (15-minute), inch H_2O	25.5	23.9	27.4	15-minute period	
	Minimum scrubber liquid flow rate (lowest 4-hour average), gal/min	280	280	280	12-hour block	Accuracy percentage of ±5 percent
	Minimum scrubber liquid pH (lowest 1-hr average)	3.5	3.1	3.76	3-hour block	Accuracy value of ±0.2 pH units
Sorbent Polymer Catalyst Composite Material Adsorber (ID No. CD-04)	Minimum pressure drop (lowest 4-hour average), inch H_2O	0.16	0.17	-	12-hour block	Accuracy percentage of ±5 percent

* Allowable variances are based on the documented accuracy of similar measurement devices. Any parametric value measurements that are within the defined allowable variance when compared to the operating limit will be considered equivalent to the defined operating limit.

The Stationary Source Compliance Branch (SSCB) reviewed and approved the above referenced stack test results for both 2021 and 2022 stack tests events, establishing the new and/or revised operating parameter values (as included in the Table above), in addition to the verification of compliance with various emissions limits, through memorandum dated February 17, 2022 and February 24, 2023. Thus, the DAQ will incorporate the operating parameter values, based on the most recent 2022 stack test events, in the Section 1 Table, Section 2.1 A.2.d. ii, Section 2.1. A.2.f.i and ii, and Section 2.1 A.4.c, as applicable. Finally, it is noted that the last column in the Table 7-1 above provides the allowable variances, as per the executed SOC discussed previously, which may mitigate

frequent permit revisions, which otherwise may be required, due to the change in operating parameter values (established or reestablished through stack testing).

8. NSPS, NESHAPS, PSD, Attainment Status, 112(r), CAM

NSPS

The SSI is subject to the NSPS Subpart O. The proposed changes to the operating parameters limits, included in the current permit to comply with the NSPS, have been discussed in Section 6 above.

NESHAP

The existing SSI is subject to the requirements in NESHAPS regulations Subpart C and E (40 CFR 61). The proposed changes discussed in Section 6 above do not affect the NESHAPs requirements included in the current permit.

PSD

County of Guilford is in attainment or unclassifiable for all promulgated National Ambient Air Quality standards (NAAQS) in accordance with §81.334. The PSD program applies to major stationary sources and major modifications in this County. The Eastside WWTP is an existing "minor" source for PSD as per the current permit. The facility operates under the PSD avoidance limit (less than 250 tons NOx per consecutive 12-months period) as per Section 2.2.A.1 of the current permit. No change in emissions is expected due to the proposed changes, discussed above, for any regulated NSR pollutant. In brief, neither the renewal nor the minor modification application changes the facility's current classification under the PSD program. Finally, Guilford County has triggered increment tracking under PSD for PM_{10} and SO_2. However, this permit modification does not consume or expand increments for any pollutants.

112(r)

The facility is NOT subject to CAA §112(r) and the resulting regulatory requirements in 40 CFR 68 "chemical accident prevention provisions". The facility does not produce, process, handle, or store any regulated chemicals under this Part above the threshold quantities. However, the facility is not exempt from the general duty for taking steps as necessary to prevent the accidental release of such substance and minimize the consequences of any substance.

CAM

The compliance assurance monitoring (CAM) rule requires owners and operators to conduct monitoring to provide a reasonable assurance of compliance with applicable requirements under the CAA. Monitoring focuses on emissions units that rely on pollution control device equipment to achieve compliance with applicable standards.

Consistent with 15A NCAC 02D .0614, for renewal applications, DAQ is required to evaluate the applicability of CAM for each pollutant-specific emissions unit (PSEU) located at a facility, required to hold a Title V permit, if all of the criteria listed below are met:

(1) the unit is subject to an emission limitation or standard for the applicable regulated air pollutant, or a surrogate thereof, other than an emission limitation or standard that is exempt per this regulation,

(2) the unit uses a control device to achieve compliance with any such emission limitation or standard, and

(3) 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.

The following Tables 8-1 and 8-2 provide this applicability analysis:

Table 8-1: CAM Analysis

Pollutant-specific Emissions Unit	Non-Exempt Emission Limitation or Standard	Type of Control Device	Pre-control Potential Emission Rate of Regulated Air Pollutant	CAM Triggers?	Comment
Fluidized bed incinerator	15A NCAC 02D .0524 (NSPS Subpart O) PM Standard of 1.3 pounds per ton of dry sludge input (0.65 g/kg dry sludge input) and 20 percent opacity	Wet scrubber	114.8 TPY (PM_{10}) 105.6 TPY ($PM_{2.5}$)	Yes, for both PM_{10} and $PM_{2.5}$	See Table 8-2 below.
Sand storage silo	15A NCAC 02D .0515	Baghouse	0.00013 TPY (PM_{10}) 0.00013 TPY ($PM_{2.5}$)	No	-
Dual Use Generators (three)	None (subject to exempt requirement: emissions cap under PSD avoidance limitation)	None	249 TPY (NOx)	No	-

Table 8-2: Calculations of Potential Uncontrolled PM_{10} and $PM_{2.5}$ Emissions

	Stack Test Data			Calculations							
Emission Source	Stack Test Event	Type of Particulate	Test Results (lb/dry ton sewage sludge)	Type of Particulate	Controlled Emissions Factor (lbs/dry ton sewage sludge)	Controlled Hourly Emissions (lbs/hour)	Controlled Annual Emissions (tons/year)	Control Efficiency (%)	Hourly Uncontrolled Emissions (lbs/hour)	Annual Uncontrolled Emissions (tons/year)	
Fluidized Bed Incinerator (ID No. ES-01)	2016	Condensable PM (CPM)	0.103	CPM	0.103	0.142	0.620	99.0	14.2	62.2	
	2018	Filterable PM	0.05	Filterable PM10	0.00365	0.005	0.022	99.9	5.0	21.9	
				Filterable PM2.5	0.00300	0.004	0.018	99.9	4.1	18.0	
				CPM + Filterable PM10		**0.147**	**0.642**		**19.2**	**84.1**	**Uncontrolled Total PM10**
				CPM + Filterable PM2.5		**0.146**	**0.638**		**18.3**	**80.2**	**Uncontrolled Total PM2.5**
	2019	Filterable PM	0.08	Filterable PM10	0.00584	0.008	0.035	99.9	8.0	35.0	
				Filterable PM2.5	0.00480	0.007	0.029	99.9	6.6	28.9	
				CPM + Filterable PM10		**0.150**	**0.655**		**22.2**	**97.2**	**Uncontrolled Total PM10**
				CPM + Filterable PM2.5		**0.148**	**0.649**		**20.8**	**91.1**	**Uncontrolled Total PM2.5**
	2020	Filterable PM	0.11	Filterable PM10	0.00803	0.011	0.048	99.9	11.0	48.2	
				Filterable PM2.5	0.00660	0.009	0.040	99.9	9.1	39.9	
				CPM + Filterable PM10		**0.153**	**0.669**		**25.2**	**110.4**	**Uncontrolled Total PM10**
				CPM + Filterable PM2.5		**0.151**	**0.660**		**23.3**	**102.1**	**Uncontrolled Total PM2.5**
	2021	Filterable PM	0.064	Filterable PM10	0.00467	0.006	0.028	99.9	6.4	28.0	
				Filterable PM2.5	0.00384	0.005	0.023	99.9	5.3	23.2	
				CPM + Filterable PM10		**0.148**	**0.648**		**20.6**	**90.2**	**Uncontrolled Total PM10**
				CPM + Filterable PM2.5		**0.147**	**0.643**		**19.5**	**85.4**	**Uncontrolled Total PM2.5**
	2022	Filterable PM	0.12	Filterable PM10	0.00876	0.012	0.053	99.9	12.0	52.6	
				Filterable PM2.5	0.00720	0.010	0.043	99.9	9.9	43.4	
				CPM + Filterable PM10		**0.154**	**0.673**		**26.2**	**114.8**	**Uncontrolled Total PM10**
				CPM + Filterable PM2.5		**0.152**	**0.664**		**24.1**	**105.6**	**Uncontrolled Total PM2.5**
								Uncontrolled Total PM10	**Five-year Average**	**99.3**	
								Uncontrolled Total PM2.5	**Five-year Average**	**92.9**	
Maximum Dry Sludge Hourly Rate (dry lbs/hr)				2,750							

Notes:
(1) CPM emission factor (0.124 CPM/hr @ 1.2 dry tons of sludge/hr) for Metropolitan Sewerage District of Buncombe County FBI. Particulate emissions controlled by the same control device (wet scrubber) as installed on City of High Point FBI. Same design and same control device manufacturer (Envirocare).
(2) Filterable PM_{10} emission factor calculated using controlled filterable PM emission factor established from stack tests results times 7.3% of cumulative mass as PM_{10} for FBI controlled by scrubber (Table 2.2-10, EPA Compilation of Air Pollutant Emission Factors, AP-42, Volume 1, January 1995).
(3) Filterable $PM_{2.5}$ emission factor calculated using controlled filterable PM emission factor established from stack tests times 6% of cumulative mass as $PM_{2.5}$ for FBI controlled by scrubber (Table 2.2-10, EPA Compilation of Air Pollutant Emission Factors, AP-42, Volume 1, January 1995).
(4) Control efficiencies referenced from scrubber manufacturer (Envirocare).
(5) 2022 Stack testing report has been submitted to NCDAQ, but the test results have not yet been approved.

Based on the analysis, the potential uncontrolled emissions for PM_{10} and $PM_{2.5}$ would exceed the major source threshold (100 ton per year), using the emissions factors for filterable particulates (based upon 2020 and 2022 test results), and the emission factor for condensable (2016 test results). In addition, using the emissions factors developed per 2019 test results, the potential uncontrolled emissions for each of these pollutants are estimated to be close to major source threshold.

Thus, DAQ determines that the CAM requirement is triggered for the existing FBI, controlled by the wet scrubber, with respect to the applicable requirement in NSPS Subpart O, consistent with 02D .0614(a). Accordingly, the applicant submitted the CAM plan, as below, for the wet scrubber, which is based on the presumptive monitoring in 40 CFR 62 Subpart LLL (federal plan for existing sewage sludge incinerators) and/or 40 CFR 60 Subpart MMMM (emissions guidelines for existing sewage sludge incinerators), consistent with §64.4(b)(4). Since the federal plan requirements are applicable to the FBI at this time (emissions guideline will become applicable to the facility FBI via the revised 02D .1204 in future through SIP (state implementation plan) approval), no further justification is required for the appropriateness of monitoring, consistent with §64.4(b). In brief, the approved CAM will be based on the above federal plan's monitoring requirements:

The following Table 8-3 outlines the monitoring, recordkeeping, and reporting approach for the subject wet scrubber:

Table 8-3: CAM Plan

	Indicator #1 Liquid injection flow rate	Indicator #2 Pressure Drop
Measurement Approach	Liquid injection flow rate.	Pressure Drop
Indicator Range	An excursion is defined as a 6-hour block average less than the minimum liquid injection flow rate established during most recent performance test (i.e., 6-hour block average < 280 gallons per minute). Excursion triggers an inspection, corrective action and a reporting requirement.	An excursion is defined as a 6-hour block average less than the minimum drop established during most recent performance test (i.e., 6-hour block average < 34.2 inches of water). Excursion triggers an inspection, corrective action and a reporting requirement.
QIP Threshold	12-hour block average less than minimum liquid injection flow rate established during most recent performance test (i.e., 12-hour block average < 280 gallons per minute).	12-hour block average less than minimum pressure drop established during most recent performance test (i.e., 12-hour block average < 34.2 inches of water).
Performance Criteria: Data Representativeness	Liquid injection flow rate is measured using the Supervisory Control and Data Acquisition (SCADA) system.	Pressure drop is measured using the SCADA system.
QA/QC Practices and Criteria	QA/QC practices are followed as set forth in 40 CFR Part 62, Subpart LLL. At a minimum, the monitoring device is calibrated as per manufacturer's recommendation.	QA/QC practices are followed as set forth in 40 CFR Part 62, Subpart LLL. At a minimum, the monitoring device is calibrated as per manufacturer's recommendation.
Monitoring Frequency	Monitored Continuously	Monitored Continuously
Data Collection Procedure	As required by 40 CFR Part 62, Subpart LLL, data is recorded at a minimum of every 15 minutes.	As required by 40 CFR Part 62, Subpart LLL, data is recorded at a minimum of every 15 minutes.
Data Averaging Period	6-hour block average	6-hour block average

The following record-keeping and reporting requirements will apply:

- The Permittee shall comply with the recordkeeping requirements of 40 CFR 64.9(b) and submit a summary report of the monitoring and recordkeeping activities specified above, postmarked on or before January 30 of each calendar year for the preceding six-month period between July and December and July 30 of each calendar year for the preceding six-month period between January and June. All instances of deviations from the requirements of this permit must be clearly identified. The reports shall comply with the reporting requirements of 40 CFR 64.9(a) and include, at a minimum the following information, as applicable:

i. Summary information on the number, duration and cause (including unknown cause, if applicable) of excursions or exceedances, as applicable, and the corrective actions taken;
ii. Summary information on the number, duration and cause (including unknown cause, if applicable) for monitor downtime incidents (other than downtime associated with zero and span or other daily calibration checks, if applicable); and
iii. A description of the actions taken to implement a QIP during the reporting period as specified in 40 CFR 64.8. Upon completion of a QIP, the owner or operator shall include in the next summary report documentation that the implementation of the plan has been completed and reduced the likelihood of similar levels of excursions or exceedances occurring.

Finally, it is noted that DAQ had approved a similar CAM plan for the wet scrubber on a sewage sludge incinerator for WSACC - Rocky River Regional WWTP (04475T22, August 30, 2022).

9. Facility-wide Air Toxics

The facility is currently not subject. The proposed changes discussed herein do not result into evaluation of any air toxic pollutants, regulated pursuant to 02Q .0700.

10. Facility-wide Emissions

The following is a facility-wide emissions summary. The actual emissions for calendar years 2017 through 2021 are included on the first page of this application review, as reported by City of High Point - Eastside WWTP to DAQ via submittal of its emission inventory. The potential emissions (with control) are copied from the minor modification application.

Pollutant	Potential Emissions (With Control) tons/yr
PM	6.95
PM-10	6.28
PM-2.5	6.27
SO_2	0.10
NOx	< 250
CO	57.4
VOC	5.87
Lead	0.0000675
GHG as CO_2e	25,142
Single HAP	2.89 (1,4 dichlorobenzene)
Aggregate HAP	3.88

11. Public Notice/EPA and Affected State(s) Review

With respect to the Title V procedures for public participation, pursuant to 15A NCAC 02Q .0521, a notice of the DRAFT Title V Permit was placed on the NCDEQ website on xx with the comment period beginning on xx. The notice provided for a 30-day comment period with an opportunity for a public hearing. Copies of the public notice were sent to the persons on the Title V mailing list and EPA on xx. Pursuant to 15A NCAC 02Q .0522, a copy of the permit application and the proposed permit (in this case, the draft permit) were provided to EPA for their 45-day review on xx. Also pursuant to 02Q .0522, a notice of the DRAFT Title V Permit was provided to each affected State at or before the time notice provided to the public under 02Q .0521 above. A copy of the final permit will also be provided to the EPA upon issuance as per 02Q .0522.

12. Stipulation Review

The following Table 12-1 lists the changes to the City of High Point Eastside Wastewater Treatment Plant's Air Quality Permit No. 08074T15:

Old Page Air Quality Permit No. 08074T15	**Old Section** Air Quality Permit No. 08074T15	**New Page** Air Quality Permit No. 08074T16	**New Section** Air Quality Permit No. 08074T16	**Description of Change(s)**
Cover letter, insignificant activity attachment, and first page of permit				Amended the permit numbers and dates. Revised both the cover letter and the 1st page of the permit as per DAQ's Title V Shell template. Regarding the cover letter, separated out the permit-contesting requirements as an attachment, as approved by the NC AG's office. Included the NAICS code (in addition to SIC code) for the facility and a reminder for the renewal due date in the cover page. Removed the insignificant activity (IAs) list as an attachment to the cover letter per DAQ's template and relocated it to Section 3 of the permit.
2	Table of Contents	2	Table of Contents	Included acronyms and section listing for IAs.
29	List of Acronyms	3	List of Acronyms	Relocated and revised per DAQ's template.
3	Section 1 Table	4	Section 1 Table	Revised (i) the minimum pressure drop for the wet scrubber (ID No. CD-01) from 39.1 inches of H_2O to 34.2 inches of H_2O and (ii) the minimum pressure drop for sorbent polymer catalyst adsorber (ID No. CD-04) from 0.18 inch of H_2O to 0.17 inch of H_2O. Revised the descriptor for each generator. Included engine size for each existing generator (ID No. ES-03 through ES-05).
3	Section 2.1 A Table	5	Section 2.1 A Table	Included applicable requirements in both 15A NCAC 02D .0614 and 40 CFR 62 Subpart LLL.
5	Section 2.1 A.2.d.ii	6	Section 2.1 A.2.d.ii	Revised the minimum pressure drop for the sorbent polymer catalyst adsorber (ID No. CD-04) from 0.18 inch of H_2O to 0.17 inch of H_2O. Included the data averaging period for compliance and variance language per the executed SOC.
5	Section 2.1 A.2.f.i and ii	7	Section 2.1 A.2.f.i and ii	Revised (i) the average pressure drop value from 27.4 inches of H_2O to 23.9 inches of H_2O for control device (ID No. CD-01) and (ii) the target value from 11.01% to 10.6% for reporting of oxygen gas content if the oxygen content for any 1-hour period exceeds this target value for the SSI (ID No. ES-01). Included the data averaging period for compliance and variance language per the executed SOC.
-	-	7	Section 2.1 A.3	Inserted a new applicable requirement in 02D .0614.
5	Section 2.1 A.3	8	Section 2.1 A.4	Renumbered the existing requirements in Part 61 Subparts C and E.

Old Page Air Quality Permit No. 08074T15	**Old Section** Air Quality Permit No. 08074T15	**New Page** Air Quality Permit No. 08074T16	**New Section** Air Quality Permit No. 08074T16	**Description of Change(s)**
7	Section 2.1 A.4.c	9	Section 2.1 A.5.c	Renumbered the existing requirements in 02D .0614, and revised (i) the minimum combustion chamber operating temperature from 1,333 ^{0}F to 1,293 ^{0}F, (ii) the minimum pressure drop from 39.1 inches of H_2O to 34.2 inches of H_2O and scrubber pH from 3.76 to 3.1, both for wet scrubber (ID No. CD-01), and the minimum pressure drop for sorbent polymer catalyst adsorber (ID No. CD-04) from 0.18 inch of H_2O to 0.17 inch of H_2O. Included the data averaging period for compliance and variance language per the executed SOC.
7	Section 2.1 A.4.e	10	Section 2.1 A.5.e	Renumbered it and clarified the permitting requirement for both more stringent and less stringent parameters values.
10	Section 2.1 A.5	16	Section 2.1 A.7	Renumbered the existing requirement in 40 CFR 503 Subpart E.
-	-	12	Section 2.1 A.6	Included a new section for the requirements in 40 CFR 62 Subpart LLL.
12	Section 2.1 C	21	Section 2.1 C	Revised the descriptor for each generator. Included engine size for each existing generator (ID No. ES-03 through ES-05).
17, 18	Section 2.2 A	26	Section 2.2 A	Included the Table for applicable regulations, and renumbered the section and subsections per DAQ's style.
-	-	27	Section 3	Relocated the IAs list.
19 through 28	Section 3	28 through 36	Section 4	Included the latest set of General Conditions and renumbered this section.

13. Conclusions, Comments, and Recommendations

- A professional engineer (PE)'s seal is not required.

  The application does not include a request for a new emission source or modification to an existing source, involving review of design, or determination of applicability or appropriateness with regard to regulatory requirement, or interpretation of performance of an air pollution capture and control system. Thus, the PE seal requirement in 02Q .0112 "Applications Requiring Professional Engineer Seal" is not triggered.

  However, the application involves establishing the revised operating limits for the SSI and control devices. Thus, Mr. Keith D. McCullock, P.E. License No. 027343 has elected to seal the Summary and Emissions Assumptions and Calculations portions of the application on November 16, 2021. A search of the registrant directory on the N.C. Board of Examiners for Engineers and Surveyors website confirmed that Mr. McCullock' s license to practice engineering in the State of NC was in the "current" (active) status.

- The DAQ has determined that the changes processed in this application do not constitute an expansion of the existing facility. Thus, the requirement for determination of a local zoning is not triggered.

- The draft permit was emailed to the applicant for review on January 24, 2023. The applicant (Keith D. McCullock, GEL Engineering, consultant for the applicant) provided comments on the draft permit on February 2, 2023. The primary comment is with regard to DAQ's inclusion of operating parameter values for SSI and the control devices, based on results of 2021 stack tests events (4100977.21C), and not on more recent 2022 stack

tests events (4100977.22A). The DAQ agrees with the applicant, and it will establish the revised operating parameters values for these equipment, based on the 2022 stack tests events, as they represent the most recent performance of the equipment, as discussed in Section 7 above. Then the revised draft permit, specifying the operating parameters values for various equipment, pursuant to the most recent stack tests results (minor modification application .22A), was sent for comments on February 27, 2023. For the application review, on February 28th, the applicant (Mr. McCullock on behalf of City of High Point) offered one substantive comment on the aggregate HAPs emissions (Section 10 Table), which was incorrectly listed as 5.70 TPY instead of 3.88 TPY. This correction will be made. Finally, the applicant had no comment on the revised draft permit.

- The draft permit including the revised draft were emailed to the WSRO for review on January 24, 2023 and February 27, 2023. The regional office did not offer comment on the permit.

- This permit engineer recommends issuing the final permit after the completion of both the public comment and EPA review periods.