

Air Permit Review

Region: Mooresville Regional Office
County: Rowan
NC Facility ID: 8000003
Inspector's Name: Denise Hayes
Date of Last Inspection: 09/14/2023
Compliance Code: 3 / Compliance - inspection

Issue Date: Month xx, 2024

<p align="center">Facility Data</p> <p>Applicant (Facility's Name): Carolina Stalite Company</p> <p>Facility Address: 16815 Old Beatty Ford Road Gold Hill, NC 28071</p> <p>SIC: 3281 / Cut Stone And Stone Products NAICS: 327991 / Cut Stone and Stone Product Manufacturing</p> <p>Facility Classification: Before: Title V After: Title V Fee Classification: Before: Title V After: Title V</p>	<p align="center">Permit Applicability (this application only)</p> <p>SIP: 02D .0511, 02D .0516, 02D .0524, 02D .1402, 02D .0535, 02D .0614 (for SO₂ & particulate matter emissions) NSPS: Subpart UUU NESHAP: NA PSD: BACT PSD Avoidance: NA NC Toxics: 02D .1100 112(r): NA Other: 2Q .0112 & 2Q .0501(d) (one step – modification)</p>
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Contact Data			Application Data
Facility Contact	Authorized Contact	Technical Contact	
Joe Konzelmann Environmental Compliance Supervisor (704) 279-2166 PO Box 1037 Salisbury, NC 28145+1037	Jody Wall General Manager (704) 636-5231 PO Drawer 1037 Salisbury, NC 28145+1037	Tim Agner Manager of Engineering Services (704) 279-2166 PO Box 1037 Salisbury, NC 28145+1037	<p>Application Number: 8000003.21A Date Received: 03/19/2021 Application Type: Renewal Application Schedule: TV-Renewal Existing Permit Data Existing Permit Number: 03059/T49 Existing Permit Issue Date: 10/09/2018 Existing Permit Expiration Date: 11/30/2021</p>

Total Actual emissions in TONS/YEAR:

CY	SO ₂	NOX	VOC	CO	PM10	Total HAP	Largest HAP
2022	829.20	566.18	0.7937	7.13	38.01	0.4706	0.2397 [Hexane, n-]
2021	793.20	543.15	1.01	7.96	37.44	0.4230	0.1848 [Hexane, n-]
2020	874.60	565.85	1.04	8.78	36.83	0.4031	0.1501 [Hexane, n-]
2019	946.70	617.47	1.07	9.29	40.14	0.4836	0.2127 [Hexane, n-]
2018	1164.12	590.32	0.9680	8.68	30.56	0.5270	0.2739 [Hexane, n-]

<p>Review Engineer: Chengqing Xiao</p> <p>Review Engineer's Signature: _____ Date: Month xx, 2024</p>	<p align="center">Comments / Recommendations:</p> <p>Issue 03059/T50 Permit Issue Date: Month xx, 2024 Permit Expiration Date: Month xx, 2024</p>
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I. Purpose of Application:

Carolina Stalite Company holds Title V Permit No. 03059T49 with an expiration date of November 30, 2021. The Title V renewal application (**Application No. 8000003.21A**) was received on March 19, 2021, which was at least six months prior to the expiration date of the Title V permit. 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.

II. Facility Description:

The Carolina Stalite Company is a lightweight aggregate manufacturing facility located in Gold Hill, Rowan County, North Carolina. The facility manufactures lightweight aggregates, which are generally used in concrete materials and horticulture industry. The facility receives aggregate from Vulcan Materials – Gold Hill Quarry and process it through kilns to get the lightweight characteristics. Operations resulting in air emissions from the facility include raw material processing (crushing, screening, storage, and handling), raw material heating and expansion in rotary direct-fired kilns, and product crushing, screening, handling, and storage. The expanded aggregate known as “clinker” is then crushed and screened to the desired product size. The Carolina Stalite has two primary product streams with each having a dedicated set of equipment. Currently “Block Mix” represents about 30% of production while “Structural Material” makes up the remaining 70%. The rotary kilns are natural gas and coal fired, and there are some particulate emissions associated with coal handling and storage. Bagfilters control particulate emissions from the kilns and dust silo exhausts. Lime slurry is injected in the duct work after the kilns to control sulfur dioxide emissions. Fugitive dust emissions from the conveyors, screens, pug mill, and stockpiles are controlled using water sprays at selected locations to maintain inherent moisture in the conveyed materials at a minimum of 6% moisture at all points.

The most recent compliance inspection was conducted on September 14, 2023 by Denise Hayes of DAQ-MRO. According to the inspection report, the facility is in operation 24 hours a day, 365 days a year.

III. History / Background / Application Chronology:

Permit History Since Last Permit Renewal

December 13, 2016	Air Permit No. 03059T47 issued as a Title V renewal.
January 20, 2017	Air Permit No. 03059T48 issued as a Title V one-step significant modification. Under this modification, the New Source Performance Standard (NSPS) Subpart UUU requirements with regard to Kiln No. 7 visible emissions be monitored with a Continuous Opacity Monitor (COM) have been removed.
April 13, 2017	Applicability determination (App. No. 3023) letter issued indicating that Permit is not required for the installation and operation of the replacement washer because the washer is not considered to be an emission source since the material is wet.
October 9, 2018	Air Permit No. 03059T49 issued as a Title V one-step significant modification for the addition of a sodium hydroxide (NaOH) sorbent packed-bed wet scrubber system (CD-17c) as an available SO ₂ control alternative to the existing lime slurry injection system (CD-17a). The sodium hydroxide (NaOH) sorbent-based packed-bed scrubber was installed in the ductwork after the baghouse, eliminating reacted and unreacted calcium-based sorbent from the baghouse catch. The new wet scrubber system enhanced the SO ₂ emissions control capability from 80% to 90% and was at lower sorbent use rates relative to the lime slurry injection system.

Application Chronology

March 19, 2021	Received application 8000003.21A as a Title V permit renewal.
March 23, 2021	Sent acknowledgement letter indicating that the application for permit renewal was complete.
May 18, 2021	Denise Hayes of the Mooresville Regional Office (MRO) completed the annual compliance inspection of the facility.
May 11, 2022	Jim Vanwormer of the Mooresville Regional Office (MRO) completed the annual compliance inspection of the facility.

September 14, 2023	Denise Hayes of the Mooresville Regional Office (MRO) completed the annual compliance inspection of the facility.
April 22, 2024	This permit renewal application was reassigned to Mr. Chengqing Xiao, RCO-DAQ permitting section.
May 7, 2024	Phone conversation with Mr. Tim Agner, Manager of Engineering Services of Carolina Stalite Company; Mr. Agner verified that the lime injection chamber (ID No. CD-2LIC) associated to the Kiln No. 2 (ID No. ES-2) has been removed because it could not meet the facility's requirements and the facility requested to keep this alternate lime injection chamber (ID No. CD-2LIC) in the permit. Summary of the phone discussion was emailed to Mr. Agner.
May 9 & 10, 2024	Emailed Mr. Agner requesting VOC emissions estimation for the gasoline and diesel storage tanks on May 9, 2024; Mr. Joseph Konzelmann, Environmental Compliance Supervisor of Carolina Stalite Company emailed the VOC emissions data on May 10, 2024.
May 13 & 14, 2024	Emailed Messrs. Konzelmann, Agner and Jody Wall, General Manager of Carolina Stalite Company regarding adding the source test requirements to the proposed permit within this Title V permit renewal revision; Mr. Konzelmann emailed a comment on May 14, 2024, requesting testing of Kiln ES-2 within 90 days of start-up.
May 15, 2024	Emailed Messrs. Konzelmann, Agner requesting an update of the bagfilters (5,688 square feet, each) replacement.
May 17, 2024	Mr. Konzelmann verified that the bagfilters on Kilns 3 and 4 have not been changed and requested via email that the facility retains authorization to replace the existing bagfilters by keeping the footnote #1 under the table of "... all permitted emission sources and associated air pollution control devices and appurtenances" in Section 1 in the permit.
May 30, 2024	Emailed Mr. Konzelmann requesting technical additional information
June 3 & 4, 2024	Received the requested technical additional information via email from Mr. Konzelmann
June 14, 2024	DRAFT permit and technical review sent to Permittee, Supervisor, MRO, and Stationary Source Compliance Branch for comments. Mr. Samir Parekh, Supervisor of Stationary Source Compliance Branch stated no comments via email on June 20, 2024. Ms. Denise Hayes (MRO) provided comments on the draft permit and review on June 25, 2024.
June 25, 2024	Mark Cuilla/Connie Horne (DAQ) verified TVEE from Chengqing Xiao's changes.
July 2, 2024	Per the facility's request, a conference call was held to discuss the permit draft regarding the added PSD conditions for PM and NOx monitoring/recordkeeping/reporting.
July 18, 2024	Mr. Konzelmann provided comments on draft permit via e-mail. The comments are listed at the end of this review with DAQ notes addressing the facility's comments.
July 29, 2024	Emailed Mr. Konzelmann requesting technical additional information regarding NOx monitoring requirements for the kiln combustion system.
August 21, 2024	Mr. Konzelmann emailed the facility's response.
August 29, 2024	Draft permit and review sent to 30-day public comment and 45-day EPA review periods.
September 27, 2024	Public comment period ended. comments received.
October 11, 2024	45-day EPA Review period ended; comments received.
Month xx, 2024	Air Permit No. 03059T50 issued as a Title V permit.

IV. Permit Modifications/Changes and TVEE Discussion

The following table provides a summary of the changes 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 No.	Section	Description of Changes
Global	Global	<ul style="list-style-type: none"> Updated the application number and complete date. Updated permit revision number to T50. Updated the issuance/effective dates to permit.
Global	Global	Deleted the term "The permittee shall be allowed three (3) days of absent observations per semi-annual period." from each weekly monitoring, recordkeeping, and reporting (MRR) condition throughout the permit.
3	List of Acronyms	Added List of Acronyms
4	Section 1 Table	Added PSD for source ES-1 through ES-4

Page No.	Section	Description of Changes
4-5	Section 1 Table	<ul style="list-style-type: none"> Changed Source Description from “flyash storage silos” to “flyash/lime storage silos” for the Emission Sources (ID Nos. ES-7 through ES-10) Changed Source Description from “lime storage silo” to “flyash/lime storage silo” for the Emission Source (ID No. ES-16)
4-5	Section 1 Table	Added AOS1- Alternate Operating Scenario AOS2- Alternate Operating Scenario AOS3- Alternate Operating Scenario
8	Section 2.1.A Table	Removed “State-enforceable only” for the Applicable Regulation 15A NCAC 02D .0540
8	Section 2.1.A.1.c.i	Changed to “The permittee shall test one kiln (ID Nos. ES-1 through ES-6 and ES-17) every 12 months, ensure that a different kiln is tested every 12 months, allowing completion of testing all seven kilns at the end of eighty four (84) months from issuing 03059T50 permit, in accordance with a testing protocol approved by the DAQ.”
9	Section 2.1.A.1.g Section 2.1 A.2	Added “given in Section 2.1 A.1.d and e” Monitoring - Added “alternative control devices - lime injection chamber or”
9	Section 2.1 A.2.c.i	Corrected “is in operation” to “is NOT in operation”
10	Section 2.1 A.2.h	Monitoring - Added “Hydrated lime slurry”
11	Section 2.1 A.2.l Section 2.1 A.2.l.i	Added “given in Section 2.1 A.2.f and h,” Added “or the packed bed scrubber (ID No. CD-2QDS)”
11-12	Section 2.1 A.3.d	Added “The daily observation must be made for each day of the calendar year period for Kiln No. 2 (ID No. ES-2) while operating the control device (ID No. CD-2LIC) or (ID No. CD-2QDS), and the weekly observation must be made for each week of the calendar year period for Kiln No. 2 (ID No. ES-2) while not operating the control device (ID No. CD-2LIC) nor (ID No. CD-2QDS). The Permittee shall be allowed three (3) days of absent observations per semi-annual period applying to the daily observation. The weekly observation must be made for each week of the calendar year period for the other Kilns (ID Nos. ES-1, ES-3, ES-4, ES-5, and ES-6) to ensure compliance with this requirement.”
12	Section 2.1 A.3.f	Added “given in Section 2.1 A.3.d and e,”
13	Section 2.1 A.4.d	Removed “The Permittee shall establish "normal" for the source in the first 30 days following the operation of the sodium hydroxide (NaOH) sorbent packed-bed wet scrubber system (ID No. CD-17c).”
13	Section 2.1 A.4.f Section 2.1 A.4.g	Corrected “2.1 A.1.d” to “2.1 A.4.d” Added “given in Section 2.1 A.4.d through Section 2.1 A.4.f above,”
13	Section 2.1 A.5.d	<ul style="list-style-type: none"> Added the testing requirement condition for the lime injection chamber (ID No. CD-2LIC) and for the packed bed scrubber (ID No. CD-2QDS) associated with the Kiln No. 2 (ID No. ES-2) Per the facility’s request, the Permittee shall complete a performance test of Kiln No. 2 (ID No. ES-2) within 90 days of initial start-up of the lime injection chamber (ID No. CD-2LIC) or the packed bed scrubber (ID No. CD-2QDS) to demonstrate compliance Removed RESERVED
13-14	Section 2.1 A.5.e.i Section 2.1 A.5.f.i Section 2.1 A.5.g.i	Changed to “The permittee shall test one kiln (ID Nos. ES-1 through ES-6 and ES-17) every 12 months, ensure that a different kiln is tested every 12 months, allowing completion of testing all seven kilns at the end of eighty four (84) months from issuing 03059T50 permit, in accordance with a testing protocol approved by the DAQ.”
15	Section 2.1 A.5.i Section 2.1 A.5.m	Corrected “2.1 A.5.b.ii. (ID No. ES-2)” to “2.1 A.5.b.ii. (ID No. ES-17)” Added “given in Section 2.1 A.5.h through l,”

Page No.	Section	Description of Changes
15-16	Section 2.1 A.5.n through o	Added Monitoring/Recordkeeping/Reporting for PM – Kiln Nos. 1 through 7 (ID Nos. ES-1 through ES-6, and ES-17) to meet the Part 70 monitoring provision (40 CFR 70.6(a)(3)).
15-16	Section 2.1 A.5.p	Added Monitoring/Recordkeeping for NOx – Kiln Nos. 1 through 7 (ID Nos. ES-1 through ES-6, and ES-17) to meet the Part 70 monitoring provision (40 CFR 70.6(a)(3)).
17	Section 2.1 A.8.h	Added “given in Section 2.1 A.8.b through g above,”
18	Section 2.1 A.9.a	Added “The daily observation must be made for each day of the calendar year period for Kiln No. 2 (ID No. ES-2) while operating the control device (ID No. CD-2LIC) or (ID No. CD-2QDS), and the weekly observation must be made for each week of the calendar year period for Kiln No. 2 (ID No. ES-2) while not operating the control device (ID No. CD-2LIC) nor (ID No. CD-2QDS). The Permittee shall be allowed three (3) days of absent observations per semi-annual period applying to the daily observation.”
18	Section 2.1 A.9.c.i.(C)	Added 15A NCAC 02D .0530 PSD emission limit for PM to CAM
19	Section 2.1 A.9.e	Added “given in Sections 2.1 A.9.a through d,”
19	Section 2.1 B Table	Removed “State-enforceable only” for the Applicable Regulation 15A NCAC 02D .0540
19	Section 2.1 B.1.e	Added “given in Sections 2.1 B.1.c and d,”
20	Section 2.1 B.2.e	Added “given in Sections 2.1 B.2.c and d,”
21	Section 2.1 C Table	Removed “State-enforceable only” for the Applicable Regulation 15A NCAC 02D .0540
21	Section 2.1 C.1.h	Added “given in Sections 2.1 C.1.e through g,”
22	Section 2.1 C.2.e	Added “given in Sections 2.1 C.2.c and d,”
22	Section 2.1 D Table	Removed “State-enforceable only” for the Applicable Regulation 15A NCAC 02D .0540
23	Section 2.1 D.2.e	Added “given in Sections 2.1 D.2.c and d,”
24	Section 2.1 E Table	Removed “State-enforceable only” for the Applicable Regulation 15A NCAC 02D .0540
25	Section 2.1 E.2.e	Added “given in Sections 2.1 E.2.c and d,”
26	Section 2.1 F.2.e	Added “given in Sections 2.1 F.2.c and d,”
27	Section 2.1 G Table	Removed “State-enforceable only” for the Applicable Regulation 15A NCAC 02D .0540
27	Section 2.1 G.1.h	Added “given in Sections 2.1 G.1.e through g,”
28	Section 2.1 G.2.e	Added “given in Sections 2.1 G.2.c and d,”
29	Section 2.2 A	Removed “State-enforceable only” for the Applicable Regulation 15A NCAC 02D .0540
32	Section 3 Insignificant Activities	<ul style="list-style-type: none"> • Moved Insignificant Activities list on Page 32 and removed footnote 3. • Add Insignificant Source (ID No. I-GST) - gasoline storage tank (1,000 gallon capacity) • Add Insignificant Source (ID No. I-GDST) - diesel storage tank (15,000 gallon capacity)
33-44	Section 4	<ul style="list-style-type: none"> • General Conditions as Section 4 of the Title V Permit • Updated General Conditions (version 8.0, 07/10/2024)

V. Regulatory Review

The facility is currently subject to the following regulations:

- 15A NCAC 02D .0511: Particulates from Lightweight Aggregate 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 (NSPS UUU)
- 15A NCAC 02D .0530: Prevention of Significant Deterioration
- 15A NCAC 02D .0535: Excess Emissions Reporting and Malfunctions
- 15A NCAC 02D .0540: Particulates from Fugitive Dust Emission
- 15A NCAC 02D .0614: Compliance Assurance Monitoring
- 15A NCAC 02D .1100: Control of Toxic Air Pollutants
- 15A NCAC 02D .1402: Nitrogen Oxides Applicability
- 15A NCAC 02Q .0711: TAP Procedures - Emission Rates Requiring a Permit

A. Lightweight aggregate kilns (ID Nos. ES-1 through ES-6, and ES-17) with associated hydrated lime slurry injection systems (ID Nos. CD-1a through CD-6a, and CD-17a) Or sodium hydroxide (NaOH) sorbent packed-bed wet scrubber system (ID No. CD-17c), bagfilters (ID Nos. CD-1b through CD-6b, and CD-17b). Alternate Control Devices: Lime injection chamber (ID No. CD-2LIC) and packed bed scrubber system (ID No. CD-2QDS) installed on Kiln No. 2 (ID No. ES-2).

1. 15A NCAC 02D .0511: “Particulates from Lightweight Aggregate Processes”

The owner or operator of a lightweight aggregate process shall not cause, allow, or permit any material to be produced, handled, transported or stockpiled without taking measures, such as wet suppression, to reduce to a minimum any particulate matter from becoming airborne to prevent the ambient air quality standards for particulate matter, both PM10 and total suspended particulates, from being exceeded beyond the property line. Particulate matter from any stack serving any lightweight aggregate kilns (ID Nos. ES-1 through ES-6, and ES-17) shall be reduced by at least 95% by weight before being discharged to the atmosphere. The facility uses bagfilters to control particulate emissions from the kilns.

Testing kilns (ID Nos. ES-1 through ES-6 and ES-17)

The Permittee shall demonstrate compliance with the emission limit(s) (95% particulate reduction) by testing one kiln (ID Nos. ES-1 through ES-6 and ES-17) each year on a rotating basis.

- i. The permittee shall test one kiln (ID Nos. ES-1 through ES-6 and ES-17) every 12 months, ensure that a different kiln is tested every 12 months, allowing completion of testing all seven kilns at the end of eighty four (84) months from issuing 03059T50 permit, in accordance with a testing protocol approved by the DAQ.
- ii. If testing demonstrates that the emission control efficiency is greater than or equal to 99% by weight, no further testing is required for the duration of the permit term.

According to the most recent inspection report dated September 20, 2023, all tests either showed compliance or the kiln was retested as required by the permit. Continued compliance is anticipated.

Monitoring/Recordkeeping

Particulate matter emissions from each lightweight aggregate kiln shall be controlled by a bagfilter. To ensure compliance, the Permittee shall perform inspections and maintenance as recommended by the manufacturer. In addition to the manufacturer's inspection and maintenance recommendations, as a minimum, the inspection and maintenance requirement shall include the following:

- i. A monthly visual inspection of the system ductwork and material collection unit for leaks; and
- ii. An annual (for each 12 month period following the initial inspection) internal inspection of the bagfilter structural integrity.

The results of inspection and maintenance shall be maintained in a logbook (written or electronic format) on-site and made available to an authorized representative upon request. The logbook shall record the following:

- i. The date and time of each recorded action;
- ii. The results of each inspection;
- iii. The results of any maintenance performed on the bagfilters; and
- iv. Any variance from manufacturer's recommendations, if any, and corrections made.

Reporting

The Permittee shall submit the results of any maintenance performed on the bagfilters within 30 days of a written request by the DAQ. The Permittee shall submit a summary report of monitoring and recordkeeping activities 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 semi-annual reports of 2023 were received on July 28, 2023 and January 26, 2024, respectively. The reports were reviewed by Denise Hayes and appeared to show compliance. Continued compliance is anticipated.

2. 15A NCAC 2D .0516: “Sulfur Dioxide Emissions from Combustion Sources”

Emissions of sulfur dioxide from the kilns (ID Nos. ES-1 through ES-6, and ES-17) shall not exceed 2.3 pounds per million Btu heat input set by 02D .0516. Sulfur dioxide formed by the combustion of sulfur in fuels, wastes, ores, and other substances shall be included when determining compliance with this standard.

Monitoring – Kiln No. 2 alternative Lime Injection Chamber or Packed Bed Scrubber CEMS

The lime injection chamber (ID No. CD-2LIC) or the packed bed scrubber (ID No. CD-2QDS) are considered as alternated operating scenarios AOS2 or AOS3 for kiln No. 2 (ID No. ES-2) when the facility is not operating the hydrated lime slurry injection system (alternated operating scenarios AOS1) on Kiln No. 2 (ID No. ES-2). When only operating the alternative lime injection chamber (ID No. CD-2LIC) or the alternative packed bed scrubber (ID No. CD-2QDS) on Kiln No. 2 (ID No. ES-2), the facility must demonstrate compliance with the SO₂ limit (2.3 pounds per million Btu heat input) while the hydrated lime slurry injection system (ID No. CD-2a) is NOT in operation. SO₂ emissions must be monitored using a continuous emission monitor system (CEMS) for a minimum of one year following initial operation of the control device.

According to the most recent inspection report dated September 20, 2023, this equipment has not been installed at the time of this inspection. Per the phone call conversation on May 7, 2024 between Mr. Agner and this permit engineer, Mr. Agner confirmed that neither the alternative lime injection chamber (ID No. CD-2LIC) nor the alternative packed bed scrubber (ID No. CD-2QDS) has been installed on Kiln No. 2 (ID No. ES-2).

Monitoring – Kiln No. 7 CEMS

The facility must demonstrate compliance with the limit (2.3 pounds per million Btu heat input) by monitoring SO₂ emissions from Kiln No. 7 (ID No. ES-17) using a CEMS in accordance with 40 CFR Part 60, Appendix B and Appendix F. Compliance with the limit is determined by averaging the hourly emission rates over a 24-hour block period. The facility has installed and is operating the CEMS for SO₂ emissions.

CEMS Operating Requirements

The SO₂ CEMS on the affected kilns (ID Nos. ES-2 and ES-17) shall be deemed to be properly operated and maintained if the Percent Monitor Downtime (%MD) does not exceed 2.0 percent. According to the most recent inspection report dated September 20, 2023, the SO₂ CEMS on Kiln No. 7 has been installed and is operating properly. There have not been any exceedances of the 2 percent monitor downtime limit. The facility does not operate the CEM on kiln 2 because the alternate control systems are not installed.

Monitoring – Hydrated Lime Slurry Injection Systems

The facility shall install and operate the hydrated lime slurry injection systems on the kilns (ID Nos. ES-1 through ES-6 and ES-17). For kiln No. 7 (ID No. ES-17), the hydrated lime slurry injection systems are considered as Alternate Operating Scenario 1 (AOS1). The sodium hydroxide (NaOH) sorbent packed-bed wet scrubber system (ID No. CD-17c) installed on kiln 7 (ID No. ES-17) is considered as Alternate Operating Scenario 2 (AOS2), when the facility is not operating the hydrated lime slurry injection system (AOS1) on Kiln No. 7 (ID No. ES-7).

For Kilns Nos. 1 through 6 (ID Nos. ES-1 through ES-6) the Permittee shall inject hydrated lime at a rate equal to or greater than the rate determined by the following equation:

$$F = 2.93(S)$$

Where: F = Calcium hydroxide [Ca(OH)₂] feed rate (in lbs/hr, based on a 24-hour block average); and,
S = Combined sulfur input rate from rock and coal (in lbs/hr, based on a 24-hour block average).

The facility is required to monitor and record rock feed rate; rock sulfur content; coal feed rate; coal sulfur content; and lime feed rate. All records shall be retained onsite in a log (written or electronic format).

According to the most recent inspection report, the records were observed and appeared to be complete; control devices CD-2QDS and CD-2LIC have not been installed.

The facility must perform periodic inspections and maintenance of the hydrated lime slurry injection systems (ID Nos. CD-1a through CD-6a and CD-17a) and the sodium hydroxide (NaOH) sorbent packed-bed wet scrubber system (ID No. CD-17c) as recommended by the manufacturer. In addition, the facility must perform an annual inspection of the hydrated lime slurry injection systems and scrubber system. As a minimum, the annual inspection will include inspection of spray nozzles, lime feed system, packed-bed wet scrubber system, and the cleaning/calibration of all associated instrumentation.

In the most recent inspection report, Ms. Hayes indicated that the facility is conducting inspections weekly and recording in logbook; all records were observed and appeared to be complete; and the most recent annual inspections of the lime slurry injection systems and scrubber were conducted in May 2023 and on July 14, 2023, respectively. Compliance with the record keeping requirement is indicated.

Reporting

The facility is required to submit a semiannual summary report of monitoring and recordkeeping activities. All instances of deviations from the requirements of this permit must be clearly identified. Any excess SO₂ emission reports must also be submitted semi-annually.

The semi-annual reports of 2023 were received on July 28, 2023 and January 26, 2024, respectively. The reports were reviewed by Denise Hayes and appeared to show compliance. Continued compliance is anticipated.

3. 15A NCAC 02D .0521: “Control of Visible Emissions”

The facility is limited to 20% opacity when averaged over a six-minute period for sources manufactured after July 1, 1971, and 40% opacity for sources manufactured as of July 1, 1971, when averaged over a six-minute period. Visible emissions from these sources (ID Nos. ES-3 through ES-6) shall not be more than 20 percent opacity when averaged over a six-minute period. However, six-minute averaging periods may exceed 20 percent not more than once in any hour and not more than four times in any 24-hour period. In no event shall the six-minute average exceed 87 percent opacity. Visible emissions from these sources (ID Nos. ES-1 and ES-2) shall not be more than 40 percent opacity when averaged over a six-minute period. However, six-minute averaging periods may exceed 40 percent not more than once in any hour and not more than four times in any 24-hour period. In no event shall the six-minute average exceed 90 percent opacity.

Monitoring

To ensure compliance, once a week the Permittee shall observe the emission points of these sources for any visible emissions above normal. The daily observation must be made for Kiln No. 2 (ID No. ES-2) while operating the control device (ID No. CD-2LIC) or (ID No. CD-2QDS), and the weekly observation must be made for Kiln No. 2 (ID No. ES-2) while not operating the control device (ID No. CD-2LIC) nor (ID No. CD-2QDS). The Permittee shall be allowed three (3) days of absent observations for daily monitoring only per semi-annual period. The weekly observation must be made for each week of the calendar year period for the other Kilns (ID Nos. ES-1, ES-3, ES-4, ES-5, and ES-6) to ensure compliance with tins requirement.

If visible emissions from these sources are observed to be above normal, the Permittee shall either:

- i. Take appropriate action to correct the above-normal emissions within the monitoring period and record the action taken as provided in the recordkeeping requirements below, or
- ii. Demonstrate that the percent opacity from the emission points of the emission source in accordance with 15A NCAC 02D .2610 (Method 9) for 12 minutes is below the limit given in the permit Section 2.1 A.3.a. (ID Nos. ES-3 through ES-6) or 2.1 A.3.b. (ID Nos. ES-1 and ES-2).

According to the most recent inspection report, the facility has not operated the alternative control device (CD-2LIC). Therefore, only weekly records are required currently.

Recordkeeping

The results of the monitoring shall be maintained in a logbook (written or electronic format) on-site and made available to an authorized representative upon request. The logbook shall record the following:

- i. The date and time of each recorded action;
- ii. The results of each observation and/or test noting those sources with emissions that were observed to be in noncompliance along with any corrective actions taken to reduce visible emissions; and
- iii. The results of any corrective actions performed.

Reporting

The Permittee shall submit a summary report of the observations 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.

According to the most recent inspection report, the records were observed and appeared to be complete. The semi-annual reports of 2023 were received on July 28, 2023 and January 26, 2024, respectively. The reports were reviewed by Denise Hayes and appeared to show compliance. Continued compliance is anticipated.

4. 15A NCAC 02D .0524: “New Source Performance Standard (40 CFR 60, Subpart UUU)”

For Kiln No. 7 (ID No. ES-17), the Permittee shall comply with all applicable provisions, including the notification, testing, reporting, recordkeeping, and monitoring requirements contained in Environmental Management Commission Standard 15A NCAC 02D .0524, "New Source Performance Standards," (NSPS) as promulgated in 40 CFR 60, Subpart UUU, including Subpart A, "General Provisions."

Emissions Limitations - [15A NCAC 02D .0524]

The following emissions limits shall not be exceeded:

Affected Facility	Pollutant	Emission Limit
Kiln No. 7 (ID No. ES-17)	Particulate Matter	0.04 gr/dscf
	Visible Emissions	10 percent

Monitoring/Recordkeeping/Reporting

The existing bagfilter (10,820 square feet of filter area, ID No. CD-17b) will ensure compliance with the above particulate matter emission limit. To ensure compliance with the visible emission limit above, once a week the applicant shall observe the emission points of this source (ID No. ES-17) for any visible emissions above normal. The weekly observation must be made for each week of the calendar year period to ensure compliance with this requirement. The results of the monitoring shall be maintained in a logbook (written or electronic format) on-site and made available to an authorized representative upon request. The applicant shall submit a semi-annual summary report of monitoring and recordkeeping activities.

Per Mr. Konzelmann’s email received on June 3, 2024, “Stalite establishes "normal" for the source following the operation of the sodium hydroxide (NaOH) sorbent packed-bed wet scrubber system (ID No. CD-17c), compliance date was around the beginning of January 2020.” Therefore, the requirements that “The applicant shall establish "normal" in the first 30 days following the operation of the sodium hydroxide (NaOH) sorbent packed-bed wet scrubber system (ID No. CD-17c)” have been removed from the Section 2.1 A.4.d of the proposed permit with this renewal revision

The semi-annual VE observation reports of 2023 were received on July 28, 2023 and January 26, 2024, respectively. The reports were reviewed by Denise Hayes and appeared to show compliance. Continued compliance is anticipated.

5. 15A NCAC 02D .0530: Prevention of Significant Deterioration – “BACTs for pm, sulfur dioxide and nitrogen dioxide”

A Best Available Control Technology (BACT) determination was performed by the DAQ in accordance with 40 CFR §51.166(j), Application # 8000003.03C with the issuance of Air Quality Permit No. 03059T30 (issued on March 16, 2004).

The kilns (ID Nos. ES-1 through ES-6) are subject to the following limits set by 02D .0530:

- i. 9.0 pounds of particulate matter per hour per kiln;
- ii. 120.0 pounds of sulfur dioxide per hour per kiln (ES-1 through ES-4);
74.9 pounds of sulfur dioxide per hour per kiln (ES-5 and ES-6);
1.2 pounds of sulfur dioxide per million Btu of heat input to each kiln from coal combustion only (ES-5 and ES-6); and
- iii. 43.7 pounds of nitrogen oxides per hour per kiln.

The kiln (ID No. ES-17) is subject to the following limits set by 02D .0530:

- i. 11 pounds of particulate matter per hour;
- ii. 106.5 pounds of sulfur dioxide per hour; and
- iii. 66.5 pounds of nitrogen oxides per hour.

The sodium hydroxide (NaOH) sorbent packed-bed wet scrubber system (ID No. CD-17c) has a higher level for controlling sulfur dioxide emissions. This control device and the control system have been determined that the source meets the emissions limits and complies with all BACT requirements with the permit modification review revision T49 (Application # 8000003.18A with the issuance of Air Quality Permit No. 03059T49 on October 9, 2018).

Testing

The Permittee shall complete a performance test of Kiln No. 2 (ID No. ES-2) within 90 days of initial start-up for the alternate lime injection chamber (ID No. CD-2LIC) or for the alternate packed bed scrubber (ID No. CD-2QDS) to demonstrate compliance with (1) the particulate matter, and PM₁₀ emission limits provided in the permit Section 2.1 A.1.a and Section 2.1 A.5.a.i.; (2) the SO₂ emission limits provided in the permit Section 2.1 A.2.a and Section 2.1 A.5.a.ii, utilizing EPA Reference Method No. 6, contained in 40 CFR Part 60 Appendix A or in accordance with a testing protocol approved by the DAQ. The Permittee shall comply with all general testing requirements and reporting requirements pursuant to General Condition JJ. The Permittee shall complete all testing in accordance with the testing protocol provided to and approved by DAQ. If testing is not completed as provided above or if testing results exceed either the emission limitations of particulate matter, and PM₁₀ provided in Section 2.1 A.1.a., and Section 2.1 A.5.a.; or the SO₂ emission limitations provided in the permit Section 2.1 A.2.a and Section 2.1 A.5.a.ii, the Permittee shall be deemed in noncompliance with 15A NCAC 02D .0511 and 15A NCAC 02D .0530.

Mr. Tim Agner provided the following information via a phone conversation with this permit review engineer on May 7&9, 2024.

- The lime injection chamber (ID No. CD-2LIC) associated to the Kiln No. 2 (ID No. ES-2) was installed and tested. Because it could not meet the facility's requirements, it has been removed.
- The facility requested to keep the alternate lime injection chamber (ID No. CD-2LIC) and the packed bed scrubber (ID No. CD-2QDS) both associated to the Kiln No. 2 (ID No. ES-2) in the permit.

This permit engineer searched the DAQ file system but could not find any stack test records for the packed bed scrubber (ID No. CD-2QDS) to demonstrate compliance for SO₂ emissions. Per the email discussion with Mr. Konzelmann and Mr. Agner, they confirmed that the facility did not conduct stack test for the alternate lime injection chamber (ID No. CD-2LIC) and the packed bed scrubber (ID No. CD-2QDS) associated with the Kiln No. 2 (ID No. ES-2). Per Mr. Konzelmann's request, the above test requirements of Kiln No. 2 (ID No. ES-2) within 90 days of initial start-up of the lime injection chamber (ID No. CD-2LIC) or the packed bed scrubber (ID No. CD-2QDS) will be added to the proposed permit with this renewal revision. Please see the Attachment for the email correspondence with Messir. Konzelmann and Agner.

The facility is required to conduct a performance test on kilns (ID Nos. ES-1 through ES-6, and ES-17) on a rotating basis to demonstrate compliance with the particulate matter, sulfur dioxide, and nitrogen dioxide emissions limits above.

The permittee shall demonstrate compliance with the above PM emission limits (including condensable particulate as measured by Method 202) by testing one kiln (ID Nos. ES-1 through ES-6, and ES-17) each year on a rotating basis.

The permittee shall test one kiln (ID Nos. ES-1 through ES-6 and ES-17) every 12 months, ensure that a different kiln is tested every 12 months, allowing completion of testing all seven kilns at the end of eighty four (84) months from issuing 03059T50 permit, in accordance with a testing protocol approved by the DAQ.

If the test results indicate that the particulate matter (including condensable particulate as measured by Method 202) emission rate exceeds 80% of the emission limits, the permittee shall perform additional testing for particulate matter (including condensable particulate as measured by Method 202) once every year until a subsequent test indicates particulate matter emissions are less than or equal to 80% of the emission limits.

The permittee shall demonstrate compliance with the SO₂ and NO_x emission limits above by testing one kiln (ID Nos. ES-1 through ES-6 and ES-17) each year on a rotating basis. The permittee shall test one kiln (ID Nos. ES-1 through ES-6 and ES-17) every 12 months, ensure that a different kiln is tested every 12 months, allowing completion of testing all seven kilns at the end of eighty four (84) months from issuing 03059T50 permit, in accordance with a testing protocol approved by the DAQ.”

According to the most recent inspection report dated September 20, 2023, the facility has performed the required tests and has shown compliance with the above limits. Continued compliance is anticipated.

Monitoring/Recordkeeping for SO₂ – Kiln No. 2 and Kiln No. 7

For kiln 2 (ID No. ES-2) when operating the lime injection chamber (ID No. CD-2LIC) or the packed bed scrubber (ID No. CD-2QDS) or the hydrated lime slurry injection system (ID No. CD-2a); and at kiln 7 (ID No. ES-17) when operating the lime slurry injection system (ID No. CD-17a) or packed-bed wet scrubber system (ID No. CD-17c), the facility is required to monitor and record the 24-hour sulfur dioxide emissions (in pounds per million Btu) using a continuous emissions monitoring system (CEM), monitor and record the 24-hour average heat input to the kiln (in million Btu per hour), and calculate and record the 24-hour average sulfur dioxide emission rate (in pounds per hour) as required under 02D .0516 regulation .

In the most recent compliance inspection report, Ms. Hayes indicated that “The lime injection chamber and packed bed scrubber on Kiln 2 have not been installed at the time of this inspection. Therefore, the facility is not operating the CEM unit on kiln 2. The facility has installed and is operating packed-bed scrubber system (ID No. CD-17c) and the CEM system on kiln 7. The records of the sulfur dioxide emissions and heat input rates were observed and appeared to be complete.” Continued compliance is anticipated.

Monitoring/Recordkeeping for SO₂ – Kiln Nos. 1 through 6

For kilns 1 through 6 (ID Nos. ES-1 through ES-6), the facility is required to inject hydrated lime and monitor the operation of the system and maintain records. For kilns 5 and 6 (ID Nos. ES-5 and ES-6), the facility is required to monitor the sulfur content and heat content of the coal using fuel supplier certifications. The coal supplier certification shall be recorded in a logbook (written or electronic format) per total shipment. The Permittee is required to calculate and record in a logbook (written or electronic format) the pounds of sulfur dioxide per million Btu heat content of the coal per total shipment taking into account any controls operated during the same period.

Based on the most recent inspection report, the facility is monitoring the parameters as required. The sulfur content of the coal is 0.90% and the heat content is about 13,000 Btu/lb.

Reporting

The facility is required to submit a semiannual summary report of monitoring and recordkeeping activities 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. The semi-annual reports of 2023 including summary of SO₂ emissions monitoring data, coal supplier certification and calculations of coal lb/MMBtu content were received on July 28, 2023 and January 26, 2024, respectively. The reports were reviewed by Denise Hayes and appeared to show compliance. Continued compliance is anticipated.

Monitoring/Recordkeeping/Reporting for PM – Kiln Nos. 1 through 7 (ID Nos. ES-1 through ES-6, and ES-17)

The Monitoring/Recordkeeping/Reporting (MRR) requirements for PM – Kiln Nos. 1 through 7 (ID Nos. ES-1 through ES-6, and ES-17) have been added to this renewal permit to comply with the requirements in 40 CFR 70.6(a)(3). Particulate matter emissions from the Kiln Nos. 1 through 7 (ID Nos. ES-1 through ES-6, and ES-17) shall

be controlled by the bagfilters (ID Nos. CD-1b through CD-6b, and CD-17b). The requirements of Monitoring/Recordkeeping/Reporting as included under 02D .0511 in this Section shall be sufficient to ensure compliance with 15A NCAC 02D .0530. If the MRR requirements under 02D .0511 are not complied with, the Permittee shall be deemed in noncompliance with 15A NCAC 02D .0530. Compliance is expected.

Monitoring/Recordkeeping for NOx – Kiln Nos. 1 through 7 (ID Nos. ES-1 through ES-6, and ES-17)

The Monitoring/Recordkeeping requirements for NOx – Kiln Nos. 1 through 7 (ID Nos. ES-1 through ES-6, and ES-17) have been added to this renewal permit to comply with the requirements in 40 CFR 70.6(a)(3).

- i. The Permittee shall perform a visual inspection of the combustion system including the fuel delivery system and the combustion air fan. A visual review shall be conducted on the fuel delivery system for material build up, structural integrity of the tube, the fan wheel, and fan drive system.
- ii. The Permittee shall perform a visual inspection of the combustion system for each kiln no later than 180 days from the issuance of air quality permit 03059T50, and thereafter annually (for each 12 month period following the initial inspection).
- iii. The Permittee shall maintain records of the combustion system inspections for each kiln.
- iv. The Permittee shall submit a report of the most recent inspection for each kiln conducted upon request by DAQ.

Compliance is expected.

6. 15A NCAC 02D .1402: “RACT Applicability”

RACT, or Reasonably Available Control Technology, is required on existing sources in areas that are not meeting national ambient air quality standards (i.e., non-attainment areas). Rowan County was once in “non-attainment” for ozone NAAQS. Based on the determination during the previous permit application (# 8000003.08D) review, these lightweight aggregate kilns (ID Nos. ES-1 through ES-6 and ES-17) do not need any additional controls. Rowan County is now in attainment, however, per 02D .1402, the RACT determination previously made during processing of applicant # 8000003.08D is still valid and no additional controls are required to comply with the RACT. (See Section 2.1 A. 6., of the permit).

7. 15A NCAC 02D .0535: “Excess Emissions Reporting and Malfunctions”

For each permit modification, the Permittee shall amend or update the malfunction abatement plan (MAP) of May 2, 1997, as approved by the DAQ, for each kiln (ID Nos. ES-1 through ES-6, and ES-17) to meet the requirements of the permit within ninety (90) days of issuance. The amended or up-dated documents shall be submitted to the Regional Supervisor.

8. 15A NCAC 02D .0614: “Compliance Assurance Monitoring (CAM)” (for SO₂ emissions)

As per this rule, a CAM plan is required for:

- (1) Sources subject to an emission limitation or standard for the applicable regulated air pollutant;
- (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 kilns (ID Nos. ES-1 through ES-6 and ES-17) are subject to the compliance assurance monitoring (CAM) requirements for sulfur dioxide as set by 02D .0614 and 40 CFR Part 64.

For kiln 7 (ID No. ES-17) when operating the lime slurry injection system (ID No. CD-17a) or the sodium hydroxide (NaOH) sorbent packed-bed wet scrubber system (ID No. CD-17c); and for kiln 2 (ID No. ES-2) when operating the lime injection chamber (ID No. CD-2LIC) or packed-bed scrubber (ID No. CD-2QDS) or lime slurry injection system (ID No. CD-2a), the facility is required to monitor and record the SO₂ emissions using CEMS.

For kilns 1 through 6 (ID Nos. ES-1 through ES-6), the facility is required to monitor the sulfur input and hydrated lime injection rate.

Based on the most recent inspection report, “The CEMS has been installed on kiln 7 (ID No. ES-17). The kiln was not in operation at the time of this inspection, but the facility does operate the CEM system when the kiln is in operation. The lime injection chamber and the packed-bed scrubber for kiln 2 are not installed at this time. The facility is currently

performing weekly inspections of the lime slurry injection systems. The records of the inspections were observed and appeared to be complete. There were no exceedances of the 2.3 lb/mmBtu limit. The facility appeared to be in compliance with this regulation at the time of this inspection.”

Indicator Range

The facility is required to perform an inspection on the lime slurry injection system (ID No. CD-17a) or the sodium hydroxide (NaOH) sorbent packed-bed wet scrubber system (ID No. CD-17c) installed on kiln 7 (ID No. ES-17) each time the hourly sulfur dioxide emission rate is equal to or above 101.2 pounds per hour (within 5% of the PSD limit). An excursion occurs when the SO₂ hourly emission rate is greater than 101.2 lb/hr., and the excursion triggers corrective action and reporting requirement.

The facility is required to perform an inspection of the lime slurry injection systems (ID Nos. CD-1a through CD-6a) installed on kilns 1 - 6 (ID Nos. ES-1 through ES-6) each time the measured hydrated lime injection rate is within 5% of the minimum rate required by condition 2.1 A.2.i. The inspection shall, at a minimum, include an inspection of the flanges for proper spray, pumps, and an analysis of the lime slurry to ensure appropriate concentrations of calcium hydroxide are present. The Permittee shall retain records of each inspection, including the identification of any maintenance or repairs made as a result of such inspection.

According to the most recent inspection report, “The facility is performing the required inspections. Kiln 7 (ID No. ES-17) was not in operation at the time of this inspection. Therefore, the sulfur dioxide emission rate was not observed. The facility also performs regular weekly inspections to maintain proper operations. The facility appeared to be in compliance with this regulation at the time of this inspection.”

Performance Criteria

For Kiln No. 7 (ID No. ES-17) when operating the hydrated lime slurry injection system (ID No. CD-17a) or the sodium hydroxide (NaOH) sorbent packed-bed wet scrubber system (ID No. CD-17c); and for Kiln No. 2 (ID No. ES-2) when operating the lime injection chamber (ID No. CD-2LIC) or the packed bed scrubber (ID No. CD-2QDS) or hydrated lime slurry injection system (ID No. CD-2a), the CEMS shall measure emissions at the emission point in compliance with 40 CFR 60 Appendix B and record the sulfur dioxide emission rate in the stack every 15 minutes so as to have four data points per hour.

For Kiln Nos. 1 through 6 (ID Nos. ES-1 through ES-6), the facility is required to use fuel certifications to verify sulfur content of the coal. The facility is required to analyze the rock on a weekly basis. The feed rate of coal and rock must be determined by a weigh scale. The hydrated lime injection rate must be determined using a continuous flow monitor.

QA/QC Practices

For Kiln No. 7 (ID No. ES-17), when operating the hydrated lime slurry injection system (ID No. CD-17a) or the sodium hydroxide (NaOH) sorbent packed-bed wet scrubber system (ID No. CD-17c), the CEMS shall follow the quality assurance and quality control procedures specified in 40 CFR 60 Appendix F. These include daily CEMS calibrations, quarterly audits, and annual RATA testing.

For Kiln Nos. 1 through 6 (ID Nos. ES-1 through ES-6), the continuous flow monitors on the lime injection hydration system shall be maintained in accordance with manufacturer recommendations. The Permittee shall retain records of the manufacturer recommendations, and all maintenance activities associated with the flow monitors.

Based on the most recent inspection report, “The CEMS is recording data every 15 minutes when in operation. Records of coal supplier certifications and rock analyses were available and appeared to be complete. The lime injection rates are recorded on the daily operation sheets. The facility is performing the daily calibrations, quarterly audits, and annual RATA testing as required. All records were reviewed and appeared to be complete. The most recent RATA test was performed on for June 1, 2023.” Continued compliance is anticipated.

Reporting

The facility is required to submit a semiannual summary report of monitoring and recordkeeping activities, including summary information on the number, duration, and cause of excursions or exceedances and the corrective actions taken, summary information on the number, duration, and cause for monitor downtime incidents. The semiannual reports of CY2023 were received on July 28, 2023 and January 26, 2024, respectively. The most recent reports were

reviewed by SSCB of DAQ on May 13, 2024 and appeared to show compliance. Continued compliance is anticipated.

9. 15A NCAC 02D .0614: “Compliance Assurance Monitoring (CAM)” (for particulate matter emissions)

The kilns (ID Nos. ES-1 through ES-6 and ES-17) are subject to the compliance assurance monitoring (CAM) requirements for particulate matter in accordance with the 15A NCAC 02D .0511 - particulate matter emissions from ES-1 through ES-6 and ES-17 shall be reduced by at least 95% by weight by the bagfilters; the 15A NCAC 02D .0524 - particulate matter emissions from ES-17 shall be less than 0.092 gm/dscf (0.04 gr/dscf), and the 15A NCAC 02D .0530 - particulate matter emissions from ES-1 through ES-6 shall be less than 9.0 pounds of particulate matter per hour per kiln and particulate matter emissions from ES-17 shall be less than 11 pounds of particulate matter per hour.

For kilns (ID Nos. ES-1, ES-3 through ES-6 and ES-17), the Permittee shall perform weekly visible emission observation and retain records of the observations as provided in Section 2.1 A.3.d through f and Section 2.1 A.4.d through f of this permit. The daily observation must be made for each day of the calendar year period for Kiln No. 2 (ID No. ES-2) while operating the control device (ID No. CD-2LIC) or (ID No. CD-2QDS), and the weekly observation must be made for each week of the calendar year period for Kiln No. 2 (ID No. ES-2) while not operating the control device (ID No. CD-2LIC) nor (ID No. CD-2QDS). The Permittee shall be allowed three (3) days of absent observations per semi-annual period applying to the daily observation.

According to the most recent inspection report, “The facility is conducting daily visible observations on the kilns. The records were available and appeared to be complete.” Continued compliance is anticipated.

Reporting

The facility is required to submit a semiannual summary report of monitoring and recordkeeping activities. According to the most recent inspection report, the facility is performing the daily calibrations, quarterly audits, and annual RATA testing as required. All records were reviewed and appeared to be complete. The semiannual reports of CY2023 were received on July 28, 2023 and January 26, 2024, respectively. The reports were reviewed by SSCB of DAQ and appeared to show compliance. Continued compliance is anticipated.

B. Flyash and lime storage silos (ID Nos. ES-7 through ES-10 and ES-16) and bagfilters (ID Nos. CD-7a, CD-7b, CD-8 through CD-10, and CD-16); and, Flyash/dust storage silo (ID No. ES-19) and bagfilter (ID No. CD-19).

1. 15A NCAC 2 D.0515, “Particulates from Miscellaneous Industrial Processes”

Emissions of particulate matter from the flyash, lime, and dust storage silos shall not exceed an allowable emission rate as calculated by the following equation:

$$E = 4.10 \times P^{0.67} \quad \text{Where } E = \text{allowable emission rate in pounds per hour} \\ P = \text{process weight in tons per hour}$$

Liquid and gaseous fuels and combustion air are not considered as part of the process weight.

Monitoring/Recordkeeping/ Reporting

To assure compliance, the sources are controlled with bagfilters. The facility is required to perform monthly inspections of the ductwork and control units for leaks and record the observations in a logbook. The facility is also required to perform annual internal inspections of the control units and record the observations in a logbook. The facility is required to submit a semiannual summary report of the observations.

According to the most recent inspection report dated September 20, 2023, “The records were observed and appeared to be complete. The facility is conducting the required monthly inspections.” The semiannual reports of CY2023 were received on July 28, 2023 and January 26, 2024, respectively. The reports were reviewed by Denise Hayes and appeared to show compliance. Continued compliance is anticipated.

2. 15A NCAC 02D .0521, “Control of Visible Emissions”

Visible emissions from the flyash, lime, and dust storage silos shall not be more than 20 percent opacity when averaged over a six-minute period. However, six-minute averaging periods may exceed 20 percent not more than once in any

hour and not more than four times in any 24-hour period. In no event shall the six-minute average exceed 87 percent opacity.

Monitoring/Recordkeeping/ Reporting

To ensure compliance, once a week the Permittee shall observe the emission points of these source for any visible emissions above normal. The weekly observation must be made for each day of the calendar year period to ensure compliance with this requirement. The Permittee shall be allowed three (3) days of absent observations per semi-annual period. If visible emissions from these sources are observed to be above normal, the Permittee shall either:

- i. Take appropriate action to correct the above-normal emissions within the monitoring period and record the action taken as provided in the recordkeeping requirements below, or
- ii. Demonstrate that the percent opacity from the emission points of the emission source in accordance with 15A NCAC 02D .2610 (Method 9) for 12 minutes is below the limit given in Section 2.1 B.2.a.

The results of the monitoring shall be maintained in a logbook (written or electronic format) on-site and made available to an authorized representative upon request. The Permittee shall submit a summary report of the observations 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.

According to the most recent inspection report dated September 20, 2023, "The flyash/lime/dust silos were in operation with no visible emissions. The records were observed and appeared to be complete. ... The facility appeared to be in compliance with this regulation at the time of this inspection."

The semiannual reports of CY2023 were received on July 28, 2023 and January 26, 2024, respectively. The reports were reviewed by Denise Hayes and appeared to show compliance. Continued compliance is anticipated.

3. 15A NCAC 02D .0530, "Prevention of Significant Deterioration"

The flyash/dust storage silo (ID No. ES-19) is subject to the 0.08 pounds of particulate matter per hour limit and the 7% opacity limit as set by 02D .0530.

Monitoring/Recordkeeping/Reporting

The monitoring, recordkeeping, and reporting requirements for 02D .0515 and 02D .0521 above are sufficient to show compliance with 02D .0530.

According to the most recent inspection report, "The flyash silo was observed in operation with no visible emissions. The records were observed and appeared to be complete as noted above. ... The facility appeared to be in compliance with this regulation at the time of this inspection." The semiannual reports of CY2023 were received on July 28, 2023 and January 26, 2024, respectively. The reports were reviewed by Denise Hayes and appeared to show compliance. Continued compliance is anticipated.

C. Crushing, screening and handling equipment (ID No. ES-11);

Conveyors (ID Nos. ES-12, ES-23a, ES-23b, ES-25, ES-26a, ES-27, ES-28 and ES-SWC-1) and water sprays (ID Nos. CD-11, CD-12, CD-23a, CD-23b, and CD-26a);

One portable C50 Telsmith jaw crusher (ID No. PJ-C1) with integral feeder and conveyor powered by one Caterpillar C9 350 hp diesel engine with water spray;

One temporary portable trammel screen (ID No. ES-TEMPS-1) powered by one 173 hp diesel engine

One portable trammel screen (ID No. TS-1) powered by one 139 hp diesel engine; and,

One feed hopper (ID No. ES-SWH-1)

One single deck screen (ID No. SD-1)

One Portable Loader with integral hopper and conveyor for loading Super Sac (ID No. ES-PLS-1)

One Stacker Conveyor (ID No. ES-SWC-2)

1. 15A NCAC 02D .0511, "Particulates from Lightweight Aggregate Processes"

In accordance with 02D .0511, the facility shall not cause, allow, or permit any material to be produced, handled, transported or stockpiled without taking measures to reduce to a minimum any particulate matter from becoming airborne to prevent the ambient air quality standards for particulate matter, both PM₁₀ and total suspended particulates, from being exceeded beyond the property line. Crushers must be controlled with wet suppression. Conveyors, screens,

and transfer points must be controlled such that the applicable opacity standards are not exceeded.

Monitoring

- i. Once a week, the Permittee shall observe the wet suppression systems installed on the crushers (**ID Nos. T-1, T-2, N-1, N-2, N-3 and PJ-C1**) for proper operation. If the observations are not performed or the wet suppression systems are not properly operated the Permittee shall be deemed to be in noncompliance with 15A NCAC 02D .0511.
- ii. For remaining affected sources (**ID Nos. ES-11, ES-12, ES-23a, ES-23b, ES-25, ES-26a, ES-27, ES-28, ES-SWH-1 and ES-SWC-1; excluding crushers as provided above**), the monitoring, recordkeeping, and reporting requirements as included in the permit Section 2.1.C.2 shall be sufficient to demonstrate compliance with the emission standard of Section 2.1.C.1.a.

Recordkeeping/Reporting

The results of the monitoring shall be maintained in a logbook (written or electronic format) on-site and made available to an authorized representative upon request. The Permittee shall submit a summary report of the observations 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.

According to the most recent inspection report, “The records were observed and appeared to be complete. ... The facility appeared to be in compliance with this regulation at the time of this inspection.” The semiannual reports of CY2023 were received on July 28, 2023 and January 26, 2024, respectively. The reports were reviewed by Denise Hayes and appeared to show compliance. Continued compliance is anticipated.

2. 15A NCAC 02D .0521, “Control of Visible Emissions”

Visible emissions from each source shall not be more than 20 percent opacity when averaged over a six-minute period. However, six-minute averaging periods may exceed 20 percent not more than once in any hour and not more than four times in any 24-hour period. In no event shall the six-minute average exceed 87 percent opacity.

Monitoring/Recordkeeping/Reporting

The facility is required to observe the visible emissions weekly and record the observations in a logbook. The facility is also required to submit a semiannual summary report of the observations.

According to the most recent inspection report, “There were no visible emissions observed from the sources that were in operation. Only steam was observed in areas where hot rock was being processed. The records were observed and appeared to be complete. ... The facility appeared to be in compliance with this regulation at the time of this inspection.” The semiannual reports of CY2023 were received on July 28, 2023 and January 26, 2024, respectively. The reports were reviewed by Denise Hayes and appeared to show compliance. Continued compliance is anticipated.

D. Two aggregate conveyors (ID Nos. ES-21a and ES-21b) and water sprays (ID No. CD-21a and CD-21b) and Three slate shuttle conveyors (ID Nos. ES-24a, ES-24ba and ES-24bb)

1. 15A NCAC 02D .0511, “Particulates from Lightweight Aggregate Processes”

In accordance with 02D .0511, the facility shall not cause, allow, or permit any material to be produced, handled, transported or stockpiled without taking measures to reduce to a minimum any particulate matter from becoming airborne to prevent the ambient air quality standards for particulate matter, both PM10 and total suspended particulates, from being exceeded beyond the property line. Crushers must be controlled with wet suppression. Conveyors, screens, and transfer points must be controlled such that the applicable opacity standards are not exceeded.

Monitoring/Recordkeeping/Reporting

The monitoring, recordkeeping, and reporting requirements of permit condition 2.1 – D.2. (02D .0521) are sufficient to show compliance with this rule. As required under permit condition 2.1 – D.2. (02D .0521), the facility is required to observe the visible emissions weekly, record the observations in a logbook, and submit a semiannual summary report of the observations.

According to the most recent inspection report, “The sources were not in operation at the time of this inspection. The facility appeared to be in compliance with this regulation at the time of this inspection.”

2. 15A NCAC 02D .0521, “Control of Visible Emissions”

Visible emissions from the conveyors (ID Nos. ES-21a, ES-21b, ES-24a, ES-24ba and ES-24bb) shall not be more than 20 percent opacity when averaged over a six-minute period. However, six-minute averaging periods may exceed 20 percent not more than once in any hour and not more than four times in any 24-hour period. In no event shall the six-minute average exceed 87 percent opacity.

Monitoring/Recordkeeping/Reporting

The facility is required to observe the visible emissions weekly and record the observations in a logbook. The facility is also required to submit a semiannual summary report of the observations.

According to the most recent inspection report, “The sources were not in operation at the time of this inspection. The records were observed and appeared to be complete. ... The facility appeared to be in compliance with this regulation at the time of this inspection.” The semiannual reports of CY2023 were received on July 28, 2023 and January 26, 2024, respectively. The reports were reviewed by Denise Hayes and appeared to show compliance. Continued compliance is anticipated.

3. 15A NCAC 02D .0530, “Prevention of Significant Deterioration”

The visible emissions from the conveyors (ID Nos. ES-21a, ES-21b, ES-24a, ES-24ba and ES-24bb) are limited to 10% opacity as set by 02D .0530.

Monitoring/Recordkeeping/Reporting

The monitoring, recordkeeping, and reporting requirements as included in the permit Section 2.1 D.2.c. through e. (02D .0521) shall be sufficient to comply with the emission limit of Section 2.1 D.2.a. As required under permit condition 2.1 – D.2. (02D .0521), the facility is required to observe the visible emissions weekly, record the observations in a logbook, and submit a semiannual summary report of the observations.

According to the most recent inspection report, “The sources were not in operation at the time of this inspection. The records were observed and appeared to be complete. ... The facility appeared to be in compliance with this regulation at the time of this inspection.” The semiannual reports of CY2023 were received on July 28, 2023 and January 26, 2024, respectively. The reports were reviewed by Denise Hayes and appeared to show compliance. Continued compliance is anticipated.

E. Coal conveyor (ID No. ES-22)

1. 15A NCAC 02D .0511, “Particulates from Lightweight Aggregate Processes”

The Permittee shall not cause, allow, or permit any material to be produced, handled, transported or stockpiled without taking measures to reduce to a minimum any particulate matter from becoming airborne to prevent the ambient air quality standards for particulate matter, both PM₁₀ and total suspended particulates, from being exceeded beyond the property line. The Permittee shall control emissions from crushers with wet suppression. The Permittee shall control emissions from conveyors, screens, and transfer points, such that the applicable opacity standards are not exceeded.

Monitoring/Recordkeeping/Reporting

The monitoring, recordkeeping, and reporting requirements of 2.1 – E.2.c., d., and e. (02D .0521) are sufficient to show compliance with this condition. As required under permit condition 2.1 – E.2. (02D .0521), the facility is required to observe the visible emissions weekly, record the observations in a logbook, and submit a semiannual summary report of the observations.

According to the most recent inspection report, “The conveyor was observed in operation with no visible emissions at the time of this inspection. The records were observed and appeared to be complete. ... The facility appeared to be in compliance with this regulation at the time of this inspection.” The semiannual reports of CY2023 were received on July 28, 2023 and January 26, 2024, respectively. The reports were reviewed by Denise Hayes and appeared to show compliance. Continued compliance is anticipated.

2. 15A NCAC 02D .0521, “Control of Visible Emissions”

Visible emissions from the conveyors (ID No. ES-22) shall not be more than 20 percent opacity when averaged over

a six-minute period. However, six-minute averaging periods may exceed 20 percent not more than once in any hour and not more than four times in any 24-hour period. In no event shall the six-minute average exceed 87 percent opacity.

Monitoring/Recordkeeping/Reporting

The facility is required to observe the visible emissions weekly and record the observations in a logbook. The facility is required to submit a semiannual summary report of the observations.

According to the most recent inspection report, “The conveyor was observed in operation with no visible emissions at the time of this inspection. The records were observed and appeared to be complete. ... The facility appeared to be in compliance with this regulation at the time of this inspection.” The semiannual reports of CY2023 were received on July 28, 2023 and January 26, 2024, respectively. The reports were reviewed by Denise Hayes and appeared to show compliance. Continued compliance is anticipated.

3. 15A NCAC 02D .0530, “Prevention of Significant Deterioration”

The coal conveyor (**ID No. ES-22**) shall not exhibit visible emissions more than 10 percent opacity when averaged over a six-minute period.

Monitoring/Recordkeeping/Reporting

The monitoring, recordkeeping, and reporting requirements as included in the permit Section 2.1 E.2.c (02D .0521), through e. shall be sufficient to comply with the emission limit of Section 2.1 E.3.a. As required under permit condition 2.1 – E.2. (02D .0521), the facility is required to observe the visible emissions weekly, record the observations in a logbook, and submit a semiannual summary report of the observations.

According to the most recent inspection report, “The conveyor was observed in operation with no visible emissions at the time of this inspection. The records were observed and appeared to be complete. ... The facility appeared to be in compliance with this regulation at the time of this inspection.” The semiannual reports of CY2023 were received on July 28, 2023 and January 26, 2024, respectively. The reports were reviewed by Denise Hayes and appeared to show compliance. Continued compliance is anticipated.

F. Screening operation consisting of one triple deck screen (ID No ES-13)

1. 15A NCAC 02D .0511, “Particulates from Lightweight Aggregate Processes”

The Permittee shall not cause, allow, or permit any material to be produced, handled, transported or stockpiled without taking measures to reduce to a minimum any particulate matter from becoming airborne to prevent the ambient air quality standards for particulate matter, both PM₁₀ and total suspended particulates, from being exceeded beyond the property line. The Permittee shall control emissions from crushers with wet suppression. The Permittee shall control emissions from conveyors, screens, and transfer points, such that the applicable opacity standards are not exceeded.

Monitoring/Recordkeeping/Reporting

The monitoring, recordkeeping, and reporting requirements as included in the permit Section 2.1 F.2.c through e (02D .0521) shall be sufficient to comply with the emission standard of Section 2.1 F.1.a. As required under permit condition 2.1 – F.2. (02D .0521), the facility is required to observe the visible emissions weekly, record the observations in a logbook, and submit a semiannual summary report of the observations.

According to the most recent inspection report, “The screen was not in operation at the time of this inspection. The records were observed and appeared to be complete. ... The facility appeared to be in compliance with this regulation at the time of this inspection.” The semiannual reports of CY2023 were received on July 28, 2023 and January 26, 2024, respectively. The reports were reviewed by Denise Hayes and appeared to show compliance. Continued compliance is anticipated.

2. 15A NCAC 02D .0521, “Control of Visible Emissions”

Visible emissions from the screen (**ID No. ES-13**) shall not be more than 20 percent opacity when averaged over a six-minute period. However, six-minute averaging periods may exceed 20 percent not more than once in any hour and not more than four times in any 24-hour period. In no event shall the six-minute average exceed 87 percent opacity.

Monitoring/Recordkeeping/Reporting

The facility is required to observe the visible emissions weekly and record the observations in a logbook. The facility is required to submit a semiannual summary report of the observations.

According to the most recent inspection report, “The screen was not in operation at the time of this inspection. The records were observed and appeared to be complete. ... The facility appeared to be in compliance with this regulation at the time of this inspection.” The semiannual reports of CY2023 were received on July 28, 2023 and January 26, 2024, respectively. The reports were reviewed by Denise Hayes and appeared to show compliance. Continued compliance is anticipated.

G. Crushing, screening and handling equipment (ID No. ES-29) including crusher (T-3), screens (DD-4 and TD-4), conveyors (21c, 41a through 44a, and 95 through 107) and water sprays (ID No. CD-29)

1. 15A NCAC 02D .0511, “Particulates from Lightweight Aggregate Processes”

The Permittee shall not cause, allow, or permit any material to be produced, handled, transported or stockpiled without taking measures to reduce to a minimum any particulate matter from becoming airborne to prevent the ambient air quality standards for particulate matter, both PM₁₀ and total suspended particulates, from being exceeded beyond the property line. The Permittee shall control emissions from crushers with wet suppression. The Permittee shall control emissions from conveyors, screens, and transfer points, such that the applicable opacity standards are not exceeded.

Monitoring/Recordkeeping/Reporting

To assure compliance, the facility is required to perform weekly inspections of the wet suppression systems installed on the crushers and record the observations in a logbook. For the screens and conveyors, the monitoring, recordkeeping, and reporting requirements of 2.1 – G.2 (02D .0521) are sufficient to show compliance with this condition. The facility is also required to submit a semiannual summary report of the observations.

According to the most recent inspection report, “This equipment has not been installed. The records were observed and indicated the equipment has not been installed. ... The facility appeared to be in compliance with this regulation at the time of this inspection.” The semiannual reports of CY2023 were received on July 28, 2023 and January 26, 2024, respectively. The reports were reviewed by Denise Hayes and appeared to show compliance. Continued compliance is anticipated.

2. 15A NCAC 02D .0521, “Control of Visible Emissions”

Visible emissions from the crushing, screening and handling equipment (ID No. ES-29) shall not be more than 20 percent opacity when averaged over a six-minute period. However, six-minute averaging periods may exceed 20 percent not more than once in any hour and not more than four times in any 24-hour period. In no event shall the six-minute average exceed 87 percent opacity.

Monitoring/Recordkeeping/Reporting

The facility is required to observe the visible emissions weekly and record the observations in a logbook. The facility is required to submit a semiannual summary report of the observations.

According to the most recent inspection report, “This equipment has not been installed. The records were observed and indicated the equipment has not been installed. ... The facility appeared to be in compliance with this regulation at the time of this inspection.” The semiannual reports of CY2023 were received on July 28, 2023 and January 26, 2024, respectively. The reports were reviewed by Denise Hayes and appeared to show compliance. Continued compliance is anticipated.

H. Facility-Wide

1. 15A NCAC 02D .0540, “Particulates from Fugitive Non-Process Dust Emission Sources”

Any particulate matter emissions that does not pass through a process stack or vent and that are generated within plant property boundaries are called fugitive dust emissions and are subject to this rule. The facility shall not cause or allow fugitive non-process dust emissions to cause or contribute to substantive complaints in accordance with 02D .0540. If fugitive dust emissions cause excessive visible emissions beyond the property boundary or contribute to substantive complaints, the DAQ may require the owner or operator of the facility to develop, implement, and comply with a fugitive dust control plan.

In the facility's current permit 03059T49, the rule 15A NCAC 02D .0540 appears under both Specific Conditions in Section 2.2 A.1 and General Conditions in Section 3.MM. This permit engineer discussed it with Mr. Rahul Thaker, Engineering Supervisor, Division of Air Quality. Per Mr. Thaker's instruction, this permit engineer searched the facility's files in IBEAM and Laserfiche and noticed there were some citizen complaints regarding fugitive dust over the past years and two FYI letters were sent to the facility on 08/17/2011 and 09/05/2019, respectively. This permit engineer emailed Ms. Hayes asking the status of fugitive dust compliance with the facility and she indicated that the facility does have the potential to cause fugitive dust and they are currently in compliance with this rule. The DAQ-MRO recommends keeping the rule as it is for now as there is potential to have fugitive dust beyond the property boundary of this facility. Therefore, the 02D .0540 requirement currently included in Section 2.2 of the permit will be kept in the Specific Conditions in Section 2.2 with a correction that it is enforceable by all, rather than just the state-enforceable only, and the same requirement is included in General condition MM in Section 4 within this Title V permit renewal revision.

According to the most recent inspection report, "The facility uses a water truck to spray water on the haul roads and sprinkler systems to spray water on the stockpiles to reduce fugitive dust emissions. There were some fugitive dust emissions in and around the dropouts for the flyash/lime storage silos, but it was not emanating off of property boundaries. The facility appeared to be in compliance with this regulation at the time of this inspection." Continued compliance is anticipated.

STATE-ENFORCEABLE ONLY

2. 15A NCAC 02D .1100, "Control of Toxic Air Pollutants"

Pursuant to 15A NCAC 02D .1100 and in accordance with the approved application for an air toxic compliance demonstration, the following permit limit in the table shall not be exceeded. The Permittee shall maintain records of any other process operational information as is necessary to determine compliance with 15A NCAC 02D .1100. All records of compliance shall be maintained in a logbook and made available for inspection by personnel of the Division of Air Quality for a period of two years from the date of recording.

EMISSION SOURCE(S)	TOXIC AIR POLLUTANT(S)	EMISSION LIMIT(S)
Facility-wide	Arsenic	6.88 lbs/yr
Facility-wide	Benzo(a)pyrene	100.0 lbs/yr
Facility-wide	Benzene	945.0 lbs/yr
Facility-wide	Beryllium	13.35 lbs/yr
Facility-wide	Bromine	8.55 lbs/hr
Facility-wide	Non-specific Chromium (VI) Compounds, as Chromium (VI) Equivalent	9.29 x 10 ⁻³ lb/yr
ES-1	Soluble Chromate Compounds, as Chromium (VI) Equivalent	0.0921 lb/day
ES-2	Soluble Chromate Compounds, as Chromium (VI) Equivalent	0.0921 lb/day
ES-3	Soluble Chromate Compounds, as Chromium (VI) Equivalent	0.0921 lb/day
ES-4	Soluble Chromate Compounds, as Chromium (VI) Equivalent	0.0921 lb/day
ES-5	Soluble Chromate Compounds, as Chromium (VI) Equivalent	0.0921 lb/day
ES-6	Soluble Chromate Compounds, as Chromium (VI) Equivalent	0.0921 lb/day
ES-17	Soluble Chromate Compounds, as Chromium (VI) Equivalent	0.140 lb/day
Facility-wide	Cadmium	0.521 lbs/yr

EMISSION SOURCE(S)	TOXIC AIR POLLUTANT(S)	EMISSION LIMIT(S)
Facility-wide	Formaldehyde	0.052 lbs/hr
Facility-wide	Hydrogen Chloride	2.01 lbs/hr
Facility-wide	Hydrogen Fluoride	0.86 lb/hr, 20.6 lb/day
Facility-wide	Manganese	8.57 x 10 ⁻¹ lb/day
Facility-wide	Mercury	0.105 lbs/day

According to the most recent inspection report, “The facility modeled at maximum process rates. The facility is maintaining records of the amount of aggregate processed, the amount of coal processed, the coal sulfur content, and various other operational parameters. These records are adequate to ensure compliance with these limits. The facility appeared to be in compliance with this regulation at the time of this inspection.” Continued compliance is anticipated.

3. 15A NCAC 02Q .0711, “Emission Rates Requiring a Permit”

Pursuant to 15A NCAC 02Q .0711 “Emission Rates Requiring a Permit,” for each of the below listed toxic air pollutants (TAPs), the Permittee has made a demonstration that facility-wide actual emissions do not exceed the Toxic Permit Emission Rates (TPERs) listed in 15A NCAC 02Q .0711. The facility shall be operated and maintained in such a manner that emissions of any listed TAPs from the facility, including fugitive emissions, will not exceed TPERs listed in 15A NCAC 02Q .0711.

- i. A permit to emit any of the below listed TAPs shall be required for this facility if actual emissions from all sources will become greater than the corresponding TPERs.
- ii. PRIOR to exceeding any of these listed TPERs, the Permittee shall be responsible for obtaining a permit to emit TAPs and for demonstrating compliance with the requirements of 15A NCAC 02D.1100 "Control of Toxic Air Pollutants".
- iii. In accordance with the approved application, the Permittee shall maintain records of operational information demonstrating that the TAP emissions do not exceed the TPERs as listed below:

TPERs Limitations				
Pollutant (CAS Number)	Carcinogens (lb/yr)	Chronic Toxicants (lb/day)	Acute Systemic Toxicants (lb/hr)	Acute Irritants (lb/hr)
Nickel (7440-02-0)		0.13		

According to the most recent inspection report, “The facility maintains records of the amount of aggregate processed, the amount of coal processed, the coal sulfur content, and various other operational parameters. These records are adequate to ensure compliance with these limits. The facility appeared to be in compliance with this regulation at the time of this inspection.” Continued compliance is anticipated.

VI. NSPS, NESHAPS/MACT, NSR/PSD, 112(r), ATTAINMENT STATUS, CAM

NSPS

The facility’s emission source Kiln No. 7 (ID No. ES-17) is currently subject to New Source Performance Standards (NSPS), 40 CFR 60, Subpart UUU “Standards of Performance for Calciners and Dryers in Mineral Processing Industries”. See Section V A.4. of this review, above, for 02D .0524 applicability.

NESHAP/MACT

The facility is currently not subject to any MACT regulations. Per Mr. Konzelmann’s email received on June 4, 2024, “Regarding the facility’s HAP, based on calculations and Stalite's 2022 Air Emissions Inventory (AEI) Stalite has the potential to emit less than 1 ton per year of any of a single HAP, and or less than 2 tons per year of a combination of HAPs.” According to the email received on June 3, 2024, Mr. Konzelmann stated that “To our knowledge, Stalite does not emit 1-bromopropane. The chemicals that emit 1-bromopropane are not found in the coal or rock.”

In the most recent inspection report, Ms. Hayes indicated that “The facility has a gasoline tank (1,000 gallon) onsite that is used for work vehicles around the site.” This permit engineer contacted the facility on May 9, 2024 and found out there is also a diesel storage tank (15,000 gallon capacity) on site. Per this permit engineer’s request, on May 10, 2024, Mr. Konzelmann emailed the annual VOC emissions estimation calculated using Tanks 5.0 software for the gasoline storage tank and the diesel storage tank. Based on the estimated VOC emissions submitted by the facility, the annual total losses are 320.4 lb/yr for gasoline tank and 5.76 lb/yr for diesel tank, respectively (See Attachment). Therefore, the gasoline storage tank (1000 gal. capacity) and diesel storage tank (15,000 gal. capacity) are considered as insignificant activities per 15A NCAC 02Q .0503(8), and they will be added to the Insignificant Activities with the assigned ID Nos. I-GST for gasoline tank and I-DST for diesel tank, respectively, in the proposed permit.

This permit renewal without modification and the addition of the above mentioned exempt gasoline and diesel storage tanks do not affect the NESHAP/MACT status.

Attainment Status

Rowan County is currently designated as “attainment” or “unclassifiable” with respect to the National Ambient Air Quality Standards (NAAQS) for PM₁₀, PM_{2.5}, sulfur dioxide, ozone, nitrogen dioxide, carbon monoxide and lead.

NSR/PSD

The facility is a PSD major stationary source. The permittee is subject to the PSD in accordance with 15A NCAC 02D .0530, “Prevention of Significant Deterioration.” It is discussed in Section V A.5, B.3, D3, and E3 of this review above.

There is NO actual or potential emissions increase in any NSR regulated pollutants above the major source threshold under this permit renewal without modification.

112(r)

This facility is not subject to Section 112(r) of the Clean Air Act requirements because it does not store any of the regulated substances in quantities above the thresholds in this rule. This permit renewal without modification does not affect this status.

Compliance Assurance Monitoring (CAM)

The CAM rule (40 CFR 64; 15A NCAC 02D .0614) applies to each pollutant specific emissions unit (PSEU) at facilities required to hold Title V permits 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 kilns (ID Nos. ES-1 through ES-6 and ES-17) are subject to the CAM plan for SO₂ emissions and particulate matter emissions. See Section V A.8 and A.9 of this review for 02D .0614 applicability. The facility submitted the Form E6 with this Title V permit renewal application indicating **No** new CAM plans required.

VII. Other Regulatory Considerations

Professional Engineer Seal

As per NCAC 02Q .0112, "Applications Requiring Professional Engineer Seal" - a professional engineer’s seal (PE Seal) is required to seal technical portions of air permit applications for new sources and modifications of existing

sources as defined in Rule .0103 of this Section. A professional engineer's seal (PE Seal) is not required for this renewal application without modification.

Compliance with House Bill 952

As per Section III. 9., of the review, above, there is no expected increase in toxics for this renewal application without modification and will not present an unacceptable risk to human health and thus comply with North Carolina General Statute (NCGS) 143-215.107(a)(5) (House Bill 952).

Consistency Determination

A zoning consistency determination is NOT required for this renewal application without modification.

Application Type

This application will be processed as a Title V permit renewal without modification, i.e., it will be subject to a 30-day public notice and 45-day EPA review. A permit fee is NOT required for this renewal application without modification.

EPA Rule Promulgation

EPA has promulgated a rule (88 FR 47029, July 21, 2023), with an effective date of August 21, 2023, removing the emergency affirmative defense provisions in operating permits programs, codified in both 40 CFR 70.6(g) and 71.6(g). EPA has concluded that these provisions are inconsistent with the EPA's current interpretation of the enforcement structure of the CAA, in light of prior court decisions¹. Moreover, per EPA, the removal of these provisions is also consistent with other recent EPA actions involving affirmative defenses² and will harmonize the EPA's treatment of affirmative defenses across different CAA programs.

As a consequence of this EPA action to remove these provisions from 40 CFR 70.6(g), it will be necessary for states and local agencies that have adopted similar affirmative defense provisions in their Part 70 operating permit programs to revise their Part 70 programs (regulations) to remove these provisions. In addition, individual operating permits that contain Title V affirmative defenses based on 40 CFR 70.6(g) or similar state regulations will need to be revised.

Regarding NCDAQ, it has not adopted these discretionary affirmative defense provisions in its Title V regulations (15A NCAC 02Q .0500). Instead, DAQ has chosen to include them directly in individual Title V permits as General Condition (GC) J.

Per EPA, DAQ is required to promptly remove such impermissible provisions, as stated above, from individual Title V permits, after August 21, 2023, through normal course of permit issuance.

VIII. Facility Emissions Review

The facility-wide potential emissions have not changed because of this TV permit renewal without modification. Actual emissions for criteria pollutants and HAPs for the previous five years reporting periods are provided in the header of this permit review.

¹ NRDC v. EPA, 749 F.3d 1055 (D.C. Cir. 2014).

² In newly issued and revised New Source Performance Standards (NSPS), emission guidelines for existing sources, and NESHAP regulations, the EPA has either omitted new affirmative defense provisions or removed existing affirmative defense provisions. See, e.g., National Emission Standards for Hazardous Air Pollutants for the Portland Cement Manufacturing Industry and Standards of Performance for Portland Cement Plants; Final Rule, 80 FR 44771 (July 27, 2015); National Emission Standards for Hazardous Air Pollutants for Major Sources: Industrial, Commercial, and Institutional Boilers and Process Heaters; Final Rule, 80 FR 72789 (November 20, 2015); Standards of Performance for New Stationary Sources and Emission Guidelines for Existing Sources: Commercial and Industrial Solid Waste Incineration Units; Final Rule, 81 FR 40956 (June 23, 2016).

IX. Compliance Status

DAQ has reviewed the compliance status of Carolina Stalite Company. During the most recent inspection, conducted on September 14, 2023, by Denise Hayes of the Mooresville Regional Office, the facility appeared to be in compliance with all applicable requirements. The facility's Annual Compliance Certification received February 23, 2024 was reviewed by Denise Hayes on March 22, 2024 indicating compliance with all applicable requirements for CY2023.

The facility's history of air quality violations within the last five years is as below.

On February 26, 2021, the facility was issued an NOD for a failed cylinder gas audit for the CEM system on kiln 7 (ID No. ES-17). The NOD was issued through RCO.

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

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 pursuant 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. DAQ voluntarily provides notice to each bordering State (Virginia, Tennessee, Georgia, and South Carolina).

Public Comments/EPA Comments summary here.

XI. Recommendations

The permit renewal application for Carolina Stalite Company 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. 03059/T50 to Carolina Stalite Company.

XII. Summary of Attachment

Email Correspondence with Messir. Konzelmann and Agner.

XIII. Applicant Comments

DAQ notes in red.

1. We have "cleaned up" multiple weekly monitoring, recordkeeping, and reporting (MRR) requirements throughout the permit. Carolina Stalite once performed daily MRR and the permit conditions were not updated to the correct permit language for weekly monitoring when this change was made.
Change accepted.
2. We have deleted the term "The permittee shall be allowed three (3) days of absent observations per semiannual period." from each weekly MRR condition.
Change accepted.
3. We have added the term "The permittee shall be allowed three (3) days of absent observations per semiannual period." to the PM CAM condition.
**Three (3) days of absent observations per semi-annual period only applies to the daily observation. The following permit terms were added to the PM CAM condition:
"The daily observation must be made for each day of the calendar year period for Kiln No. 2 (ID No. ES-2) while operating the control device (ID No. CD-2LIC) or (ID No. CD-2QDS), and the weekly observation must be made for each week of the calendar year period for Kiln No. 2 (ID No. ES-2) while not operating the control device (ID No. CD-2LIC) nor (ID No. CD-2QDS)."**
4. WE have streamlined the PM and NOx MRR requirements for the PSD condition (see 2.1-A.5.n. and o.)

- (1). PM – The facility has been conducting the required control device monitoring (i.e., the MRR) for the bagfilters since at least the 2001 PSD Permit (Permit No. 03059T24). Nothing has changed at the facility. The facility has been conducting the same testing as implemented in the PSD Permit (Permit No. 03059T24). For this reason, we do not believe that adding the same language into the PSD permit condition that has always been in the lightweight aggregates processes condition (this language has always been 2.1-A.1) is prudent or necessary. We modified condition n. to cross reference the MRR back to condition No. 2.1-A.1 and indicated that no additional MRR is needed which is concluded from the following.
 - i. It is clear after a review Permit No. 03059T24 from 12/20/2001 that the DAQ felt the testing was sufficient for the kilns. It is further found in the Final PSD Determination that no additional MRR was deemed necessary other than the MRR in condition 2.1-A.1, which was deemed to be sufficient for the 2001 PSD action.

The requirements of Monitoring/Recordkeeping/Reporting as included under 02D .0511 shall be sufficient to ensure compliance with PM Monitoring/Recordkeeping/Reporting requirements added under 15A NCAC 02D .0530, per the Part 70 monitoring provision (40 CFR 70.6(a)(3)).

- (2). NOx – As stated in previous discussions with DAQ, the burner is merely a pipe that utilizes a blower to blow the fuel into the kiln. As such there is nothing to tune up. We have removed all references to tune ups from this condition.

DAQ accepted the following comments provided by the facility as NOx Monitoring/Recordkeeping requirements have been added under 15A NCAC 02D .0530, per the Part 70 monitoring provision (40 CFR 70.6(a)(3)):

- i. The Permittee shall perform a visual inspection of the combustion system including the fuel delivery system and the combustion air fan. A visual review shall be conducted on the fuel delivery system for material build up, structural integrity of the tube, the fan wheel, and fan drive system.
 - ii. The Permittee shall perform a visual inspection of the combustion system for each kiln no later than 180 days from the issuance of air quality permit 03059T50, and thereafter annually (for each 12 month period following the initial inspection)
 - iii. The Permittee shall maintain records of the combustion system inspections for each kiln.
 - iv. The Permittee shall submit a report of the most recent inspection for each kiln conducted upon request by DAQ.
- (3). We have removed all references to non-compliance with PSD (2D .0530) from conditions n. and o. Once again, the DAQ determined in 2001 as part of the PSD permit review that testing was the basis for determining compliance with the PSD emission limits for PM and NOx. Testing still remains the basis for determining compliance with the PSD BACT limits. Nothing has changed since 2001 and there has been no other PSD application filed, no other PSD activity, and no changes to the BACT or the PSD compliance determination. For this reason, we do not believe that referencing non-compliance with PSD is warranted for this situation. In general, Title V permits are compliance documents. Each Title V permit needs to define compliance for each requirement that applies to an emission source (“applicable requirement”). Thus, non-compliance statements for testing/monitoring/recordkeeping requirements for PM and NOx (just like SO₂ testing/monitoring/recordkeeping requirements in Section 2.1 A.5) need to be included for the applicable requirement in 02D .0530 (Section 2.1 A.5). Finally, it is noted that all NCDAQ issued Title permits (approximately 300 Title V permit holders) contain non-compliance statements for each applicable requirement with respect to testing, monitoring, and recordkeeping requirements.

Attachment

Xiao, Chengqing

From: Joe Konzelmann <jkonzelmann@stalite.com>
Sent: Wednesday, August 21, 2024 8:50 AM
To: Xiao, Chengqing
Cc: Mark Hawes; Tim Agner
Subject: [External] Response to Comments to Carolina Stalite Draft Permit 03059T50
Attachments: Response to DAQ comments 03059T50 Draft.pdf

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Good Morning Chengqing,

Please find attached STALITE's response to DAQ's questions/comments to Draft Permit 03059T50.

Let me know if you have any questions or concerns.

Thank You,



Joseph Konzelman Environmental Compliance Supervisor
Stalite Lightweight Aggregate

m: 704.438.2109 | o: 704.279.2166 x138
a: P.O.Box 186 Gold Hill, North Carolina 28071
w: Stalite.com

August 21, 2024

Mr. Chengqing Xiao
Environmental Engineer
North Carolina Division of Air Quality

Subject: Comments to Draft Permit 03059T50
Air Quality Permit No. 03059T49
Carolina Stalite Company
Gold Hill, North Carolina

Good Morning Chengqing,

Please find below, STALITE's responses to the Division of Air Quality questions/comments for Draft Permit 03059T50.

We look forward to your response and draft permit to review. If you have any question or comments please let me know.

Thank You,

Joseph Konzelmann
Environmental Compliance Supervisor
STALITE Lightweight Aggregate

DAQ provided the following comments:

As you stated previously, the burner is merely a pipe that utilizes a blower to blow the fuel into the kiln. Please advise DAQ that instead of "burner", what the appropriate term should be used here in permit. What does the visual inspection contain: Which components are covered for each kiln and what does the visual inspection look like?

The Permittee shall inspect the combustion system to include the fuel delivery system and the combustion air fan with the inspection to include visual review of the fuel delivery system for material build up, structural integrity of the tube, the fan wheel, and fan drive system.

The "60 calendar months from the previous inspection" frequency along with the "tune-up" requirement were proposed earlier with the understanding that the kilns are installed with burners. But that is not the case. Per your comments, visual inspection can be considered as the monitoring requirements for NOx. DAQ accepts your proposal and

recommends to conduct the visual inspection on a more frequent basis such as annual as that is more reasonable and “periodic” as compared to a five-year cycle for this relatively simple visual inspection (monitoring) requirement. Thus, the term “... thereafter 12 calendar months from the previous inspection” will be added (instead of “60 calendar months from the previous inspection”) in the permit.

- o. The Permittee shall perform the following monitoring including recordkeeping requirements:
 - i. The Permittee shall perform a visual inspection of the fuel delivery system and associated combustion controls for each kiln no later than 180 days from the issuance of air quality permit 03059T50, and thereafter annually (for each 12 month period following the initial inspection)
 - ii. The Permittee shall maintain records of the fuel delivery systems inspections for each kiln.
 - iii. The Permittee shall submit a report of the most recent inspection for each kiln conducted upon request by DAQ.

In general, Title V permits are compliance documents. Each Title V permit needs to define compliance for each requirement that applies to an emission source (“applicable requirement”). Thus, non-compliance statements for monitoring/recordkeeping requirements for PM and NOx (just like SO2 monitoring/record keeping requirements in Section 2.1 A.5) need to be included for the applicable requirement in 02D .0530 (Section 2.1 A.5). Finally, it is noted that all NCDAQ-issued Title permits (approximately 300 Title V permit holders) contain non-compliance statements for each applicable requirement with respect to testing, monitoring, and record keeping requirements.

The DAQ did not add the new PM and NOx conditions as a component of a PSD permit. As such, Stalite will agree to these new conditions but should not be deemed in noncompliance with the PSD regulations (2D .0530) if any component is missed. PM is tied to the lightweight aggregate SIP rule. As there is no other NOx rule, there is no other rule to tie this to.

- n. Particulate matter emissions from the Kiln Nos. 1 through 7 (**ID Nos. ES-1 through ES-6, and ES-17**) shall be controlled by the bagfilters (**ID Nos. CD-1b through CD-6b, and CD-17b**). To ensure compliance, the Permittee shall conduct the monitoring, recordkeeping, and reporting as required in Permit Condition No. 2.1-A.1.d. through f. No additional monitoring, recordkeeping, and reporting is required for the kilns and their respective control devices.
The Permittee shall be deemed in noncompliance with 15A NCAC 02D .0511 if the required records are not created and maintained.

Xiao, Chengqing

From: Xiao, Chengqing
Sent: Monday, July 29, 2024 9:56 AM
To: Joe Konzelmann
Cc: Tim Agner; Thaker, Rahul
Subject: FW: [External] Carolina Stalite - Comments and Suggestions on Draft Title V Permit 03059T50
Attachments: 03059T50 permit dft - Carolina Stalite Comments - 20240715 (2).docx

Good morning Joe,

Rahul and I discussed your comments, and we have some questions regarding your comments for NOx monitoring/Recordkeeping.

Attached is the permit draft with your comments emailed me on July 18, 2024. On the page 16 under Section 2.1 A.5.o - **Monitoring/Recordkeeping for NOx – Kiln Nos. 1 through 7 (ID Nos. ES-1 through ES-6, and ES-17)** [15A NCAC 02Q .0508(f)], you edited the permit terms as follows:

“The Permittee shall perform the following monitoring including recordkeeping requirements:

- i. The Permittee shall perform a visual inspection of the burners and associated combustion controls for each kiln no later than 180 days from the issuance of air quality permit 03059T50, and thereafter 60 calendar months from the previous inspection.*
- ii. The Permittee shall maintain records of the burner inspections for each kiln.*
- iii. The Permittee shall submit a report of the most recent inspection for each kiln conducted upon request by DAQ.”*

DAQ provides the following comments:

1. As you stated previously, the burner is merely a pipe that utilizes a blower to blow the fuel into the kiln. Please advise DAQ that instead of “burner”, what the appropriate term should be used here in permit. What does the visual inspection contain: Which components are covered for each kiln and what does the visual inspection look like?
2. The “60 calendar months from the previous inspection” frequency along with the “tune-up” requirement were proposed earlier with the understanding that the kilns are installed with burners. But that is not the case. Per your comments, visual inspection can be considered as the monitoring requirements for NOx. DAQ accepts your proposal and recommends to conduct the visual inspection on a more frequent basis such as annual as that is more reasonable and “periodic” as compared to a five-year cycle for this relatively simple visual inspection (monitoring) requirement. Thus, the term “... thereafter 12 calendar months from the previous inspection” will be added (instead of “60 calendar months from the previous inspection”) in the permit.
3. In general, Title V permits are compliance documents. Each Title V permit needs to define compliance for each requirement that applies to an emission source (“applicable requirement”). Thus, non-compliance statements for monitoring/recordkeeping requirements for PM and NOx (just like SO2 monitoring/record keeping requirements in Section 2.1 A.5) need to be included for the applicable requirement in 02D .0530 (Section 2.1 A.5). Finally, it is noted that all NCDQAQ-issued Title permits (approximately 300 Title V permit holders) contain non-compliance statements for each applicable requirement with respect to testing, monitoring, and record keeping requirements.

Please let us know your thoughts as early as you can and feel free to contact me if you have any questions.

Thank you for the help.

Chengqing

Chengqing Xiao (he/him/his)
Environmental Engineer, Division of Air Quality
North Carolina Department of Environmental Quality
Office: (919) 707-8476
Chengqing.xiao@deq.nc.gov



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From: Joe Konzelmann <jkonzelmann@stalite.com>

Sent: Thursday, July 18, 2024 8:23 AM

To: Xiao, Chengqing <chengqing.xiao@deq.nc.gov>

Cc: Dale Overcash <DOvercash@trinityconsultants.com>; Mark Hawes <mark.hawes@trinityconsultants.com>; Tim Agner <tagner@stalite.com>

Subject: [External] Carolina Stalite - Comments and Suggestions on Draft Title V Permit 03059T50

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DAQ Permttting Staff,

Thank you for the call on July 2nd to discuss the referenced draft permit. In accordance with DAQ instructions at the end of the call, please find attached a draft permit with Track Changes with our suggested modifications to the Draft Permit. We did not comment on the DAQ Application Review Document as the requested changes to the Draft Permit should be clear enough for DAQ to update the review document.

We have summarized below our Draft Permit comments with addional documentation to support our suggested changes to the Draft Permit:

1. We have “cleaned up” multiple weekly monitoring, recordkeeping, and reporting (MRR) requirements throughout the permit. Carolina Stalite once performed daily MRR and the permit conditions were not updated to the correct permit language for weekly monitoring when this change was made.
2. We have deleted the term “The permittee shall be allowed three (3) days of absent observations per semiannual period.” from each weekly MRR condition.
3. We have added the term “The permittee shall be allowed three (3) days of absent observations per semiannual period.” to the PM CAM condition.

4. WE have streamlined the PM and NOx MRR requirements for the PSD condition (see 2.1-A.5.n. and o.)
 1. PM – The facility has been conducting the required control device monitoring (i.e., the MRR) for the bagfilters since at least the 2001 PSD Permit (Permit No. 03059T24). Nothing has changed at the facility. The facility has been conducting the same testing as implemented in the PSD Permit (Permit No. 03059T24). For this reason, we do not believe that adding the same language into the PSD permit condition that has always been in the lightweight aggregates processes condition (this language has always been 2.1-A.1) is prudent or necessary. We modified condition n. to cross reference the MRR back to condition No. 2.1-A.1 and indicated that no additional MRR is needed which is concluded from the following.
 - i. It is clear after a review Permit No. 03059T24 from 12/20/2001 that the DAQ felt the testing was sufficient for the kilns. It is further found in the Final PSD Determination that no additional MRR was deemed necessary other than the MRR in condition 2.1-A.1, which was deemed to be sufficient for the 2001 PSD action.
 1. NOx – As stated in previous discussions with DAQ, the burner is merely a pipe that utilizes a blower to blow the fuel into the kiln. As such there is nothing to tune up. We have removed all references to tune ups from this condition.
 2. We have removed all references to non-compliance with PSD (2D .0530) from conditions n. and o. Once again, the DAQ determined in 2001 as part of the PSD permit review that testing was the basis for determining compliance with the PSD emission limits for PM and NOx. Testing still remains the basis for determining compliance with the PSD BACT limits. Nothing has changed since 2001 and there has been no other PSD application filed, no other PSD activity, and no changes to the BACT or the PSD compliance determination. For this reason, we do not believe that referencing non-compliance with PSD is warranted for this situation.

We look forward to DEQ comments on our comments and suggestions, if DEQ has any other comments or concerns please let me know.

Thank You,



Joseph Konzelman Environmental Compliance Supervisor
Stalite Lightweight Aggregate

m: 704.438.2109 | o: 704.279.2166 x138
a: P.O.Box 186 Gold Hill, North Carolina 28071
w: Stalite.com

Xiao, Chengqing

From: Joe Konzelmann <jkonzelmann@stalite.com>
Sent: Tuesday, June 4, 2024 8:56 AM
To: Xiao, Chengqing
Subject: Re: [External] Re: Title V air permit renewal application for Carolina Stalite Company (8000003.21A)

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Chengqing,

Regarding the facility's HAP, based on calculations and Stalite's 2022 Air Emissions Inventory (AEI) Stalite has the potential to emit less than 1 ton per year of any of a single HAP, and or less than 2 tons per year of a combination of HAPs.

Please let me know if you have any other questions or require any additional information.

Thank You,



Joseph Konzelman Environmental Compliance Supervisor
Stalite Lightweight Aggregate

m: 704.438.2109 | o: 704.279.2166 x138
a: P.O.Box 186 Gold Hill, North Carolina 28071
w: Stalite.com

From: Xiao, Chengqing <chengqing.xiao@deq.nc.gov>
Sent: Monday, June 3, 2024 3:13 PM
To: Joe Konzelmann <jkonzelmann@stalite.com>
Cc: Thaker, Rahul <rahul.thaker@deq.nc.gov>
Subject: RE: [External] Re: Title V air permit renewal application for Carolina Stalite Company (8000003.21A)

Caution: The sender is from outside your organization and may be malicious.

Good afternoon Mr. Konzelmann,

Thank you for your time and the information!

Regarding the facility's HAP status, please specify for the "item 3" whether or not the facility has the potential to emit 10 tons per year of any of a single HAP, or 25 tons per year of a combination of HAPs.

Best regards,

Chengqing

Chengqing Xiao (he/him/his)
Environmental Engineer, Division of Air Quality
North Carolina Department of Environmental Quality
Office: (919) 707-8476
Chengqing.xiao@deq.nc.gov



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From: Joe Konzelmann <jkonzelmann@stalite.com>
Sent: Monday, June 3, 2024 1:38 PM
To: Xiao, Chengqing <chengqing.xiao@deq.nc.gov>
Subject: Re: [External] Re: Title V air permit renewal application for Carolina Stalite Company (8000003.21A)

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Chengqing,

1. Stalite establishes "normal" for the source following the operation of the sodium hydroxide (NaOH) sorbent packed-bed wet scrubber system (ID No. CD-17c), compliance date was around the beginning of January 2020.
2. To our knowledge, Stalite does not emit 1-bromopropane. The chemicals that emit 1-bromopropane are not found in the coal or rock.
3. There has been no change in the facilities' HAP status.
4. The facility has no emergency generators at site for backup power.

Please let me know if you have any more questions.

Thank You,



Joseph Konzelman Environmental Compliance Supervisor
Stalite Lightweight Aggregate

m: 704.438.2109 | o: 704.279.2166 x138
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w: Stalite.com

From: Xiao, Chengqing <chengqing.xiao@deq.nc.gov>

Sent: Thursday, May 30, 2024 4:22 PM

To: Joe Konzelmann <jkonzelmann@stalite.com>

Cc: Tim Agner <tagner@stalite.com>; Jody Wall <jwall@stalite.com>; Hayes, Denise <denise.hayes@deq.nc.gov>; Thaker, Rahul <rahul.thaker@deq.nc.gov>

Subject: RE: [External] Re: Title V air permit renewal application for Carolina Stalite Company (8000003.21A)

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Good afternoon Mr. Konzelmann,

My supervisor, Mr. Rahul Thaker reviewed my permit technical review and the permit draft. We have some additional questions below.

1. Please see the attached current permit 03059T49. On page 12 under Monitoring/Recordkeeping highlighted in yellow in Section 2.1 A.4.d "... The Permittee shall establish "normal" for the source in the first 30 days following the operation of the sodium hydroxide (NaOH) sorbent packed-bed wet scrubber system (ID No. CD-17c)." If the facility has completed this requirement, please confirm and provide the compliance date. Then, this language can be removed with this permit renewal revision.
2. EPA has added 1-bromopropane (CAS 106-94-5) to the HAP list on January 5, 2022. Please provide the information whether Carolina Stalite Company emits the HAP 1-bromopropane. If it does, please provide the emissions rates including both on actual and PTE basis.
3. What is the facility's status for HAPs (Major or Area)? Please let us know.
As a reference - Major Sources of HAPs (Maximum Achievable Control Technology (MACT) -, major sources are medium to large industrial facilities that emit 10 tons per year of any of a single HAP, or 25 tons per year of a combination of HAPs.
4. Does the facility have any emergency generators at site as a backup if a power outage occurs?

Please feel free to contact me if you have any questions. Thank you for your time and the help.

Chengqing

Chengqing Xiao (he/him/his)

Environmental Engineer, Division of Air Quality

North Carolina Department of Environmental Quality

Office: (919) 707-8476

Chengqing.xiao@deq.nc.gov



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From: Xiao, Chengqing

Sent: Friday, May 17, 2024 10:49 AM

To: Joe Konzelmann <jkonzelmann@stalite.com>

Cc: Tim Agner <TAgner@stalite.com>; JWall@stalite.com; Hayes, Denise <denise.hayes@deq.nc.gov>; Thaker, Rahul

<rahul.thaker@deq.nc.gov>

Subject: RE: [External] Re: Title V air permit renewal application for Carolina Stalite Company (8000003.21A)

Thank you Joe for the verification! The footnote 1 under the table of "... all permitted emission sources and associated air pollution control devices and appurtenances" in Section 1 will be kept in the permit.

Chengqing

Chengqing Xiao (he/him/his)
Environmental Engineer, Division of Air Quality
North Carolina Department of Environmental Quality
Office: (919) 707-8476
Chengqing.xiao@deq.nc.gov



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From: Joe Konzelmann <jkonzelmann@stalite.com>
Sent: Friday, May 17, 2024 10:42 AM
To: Xiao, Chengqing <chengqing.xiao@deq.nc.gov>
Subject: Re: [External] Re: Title V air permit renewal application for Carolina Stalite Company (8000003.21A)

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Goodmorning, Chengqing

Per our phone conversation, I have spoken with Tim, and the bagfilters on Kilns 3 and 4 have not been changed. At this time, Stalite would like to retains authorization to replace the existing bagfilters, and leave the footnote in the permit.

If you have any other questions or concerns please let me know.

Thank You,



Joseph Konzelman Environmental Compliance Supervisor
Stalite Lightweight Aggregate

m: 704.438.2109 | o: 704.279.2166 x138
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w: Stalite.com

From: Xiao, Chengqing <chengqing.xiao@deq.nc.gov>
Sent: Wednesday, May 15, 2024 5:16 PM
To: Joe Konzelmann <jkonzelmann@stalite.com>
Cc: Tim Agner <tagner@stalite.com>; Hayes, Denise <denise.hayes@deq.nc.gov>; Thaker, Rahul <rahul.thaker@deq.nc.gov>
Subject: RE: [External] Re: Title V air permit renewal application for Carolina Stalite Company (8000003.21A)

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Good afternoon Mr. Konzelmann,

Attached is the facility's current permit 03059T49. Please see the table notes highlighted in yellow on page 6 under the table of "... all permitted emission sources and associated air pollution control devices and appurtenances" in Section 1.

The Note 1. indicated that *"Permit No. 03059T24 on December 20, 2001 authorized Carolina Stalite to replace existing bagfilters (5,688 square feet, each) with new, larger bagfilters (7,313 square feet, each). As of the date of permit issuance, the bagfilters have not yet been replaced. However, Carolina Stalite retains authorization to replace the existing bagfilters."*

Please give us an update whether the bagfilters (5,688 square feet, each) mentioned above have been replaced and the Note 1. can be removed from the permit with this permit renewal revision.

Thanks,

Chengqing

Chengqing Xiao (he/him/his)
Environmental Engineer, Division of Air Quality
North Carolina Department of Environmental Quality
Office: (919) 707-8476
Chengqing.xiao@deq.nc.gov



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From: Xiao, Chengqing
Sent: Tuesday, May 14, 2024 3:54 PM
To: Joe Konzelmann <jkonzelmann@stalite.com>
Cc: Tim Agner <tagner@stalite.com>; Hayes, Denise <denise.hayes@deq.nc.gov>; Thaker, Rahul <rahul.thaker@deq.nc.gov>
Subject: RE: [External] Re: Title V air permit renewal application for Carolina Stalite Company (8000003.21A)

Good afternoon Mr. Konzelmann,

I discussed your request with my supervisor, Mr. Rahul Thaker. Mr. Thaker agrees to have the language – “testing of Kiln ES-2 within 90 days of start-up” under the stack testing requirements for the injection chamber (ID No. CD-2LIC) and the packed bed scrubber (ID No. CD-2QDS) in the proposed permit. Once I complete the technical review, I will email the draft of proposed permit to the facility for your review.

Thank you and Tim for the prompt response.

Chengqing

Chengqing Xiao (he/him/his)
Environmental Engineer, Division of Air Quality
North Carolina Department of Environmental Quality
Office: (919) 707-8476
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From: Joe Konzelmann <jkonzelmann@stalite.com>
Sent: Tuesday, May 14, 2024 12:40 PM
To: Xiao, Chengqing <chengqing.xiao@deq.nc.gov>
Cc: Tim Agner <tagner@stalite.com>
Subject: Re: [External] Re: Title V air permit renewal application for Carolina Stalite Company (8000003.21A)

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Good Afternoon Chengqing,

Tim Agner and I have looked review the items and have a few comments.

As far as, Kiln 2 (ID No. ES-2) alternative control device - packed bed scrubber (ID No. CD-2QDS) this control device was experimental, and did not perform as the manufacture had said. No stack test was performed. If control device CD-2QDS or similar control device is installed Stalite will contact the Division of Air Quality prior to installation. Stalite would request testing of Kiln ES-2 within 90 days of start-up. 90 days would give Stalite enough time to submit a Protocol Submittal Form PSF, hire a Stack Test firm, and work the test into the testing firm's schedule.

For the lime injection chamber (ID No. CD-2LIC) on Kiln No. 2 (ID No. ES-2) if installed again, Stalite will contact the Division of Air Quality prior to installation. Stalite would request testing of Kiln ES-2 within 90 days of start-up. 90 days would give Stalite enough time to submit a Protocol Submittal Form PSF, hire a Stack Test firm, and work the test into the testing firm's schedule.

Please let us know of your thoughts.

Thank You,



Joseph Konzelman Environmental Compliance Supervisor
Stalite Lightweight Aggregate

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w: Stalite.com

From: Xiao, Chengqing <chengqing.xiao@deq.nc.gov>
Sent: Monday, May 13, 2024 5:20 PM
To: Joe Konzelmann <jkonzelmann@stalite.com>; Tim Agner <tagner@stalite.com>
Cc: Jody Wall <jwall@stalite.com>; Hayes, Denise <denise.hayes@deq.nc.gov>; Thaker, Rahul <rahul.thaker@deq.nc.gov>
Subject: RE: [External] Re: Title V air permit renewal application for Carolina Stalite Company (8000003.21A)

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Good afternoon Mr. Konzelmann and Mr. Agner;

Thanks for sending me the spreadsheets of the VOC emissions calculations for the two storage tanks. Please review the following items and let me know whether you agree via email.

1. Based on the estimated VOC emissions (annual total losses 320.4 lb/yr for gasoline tank and 5.76 lb/yr for diesel tank), the gasoline storage tank (1000 gal. capacity) and diesel storage tank (15,000 gal. capacity) are considered as insignificant activities per 15A NCAC 02Q .0503(8) *“Insignificant activities because of size or production rate” means any activity whose emissions would not violate any applicable emissions standard and whose potential emission of particulate, sulfur dioxide, nitrogen oxides, volatile organic compounds, and carbon monoxide before air pollution control devices, are each no more than five tons per year and whose potential emissions of hazardous air pollutants before air pollution control devices, are each below 1000 pounds per year.* These two storage tanks will be listed onto the Insignificant Activities. If you agree, the assigned ID Nos. are I-GST for gasoline tank and I-DST for diesel tank, respectively, in the proposed permit.
2. Per the phone discussions with Mr. Agner on May 7 & 10, 2024, he requested to keep the Kiln 2 (ID No. ES-2) alternate control device - packed bed scrubber (ID No. CD-2QDS) in the proposed permit. I searched DAQ file system but could not find any stack test for this scrubber (ID No. CD-2QDS) to demonstrate compliance for SO₂ emissions. If the facility conducted the stack test for this scrubber before and keeps the stack test documents, please send them to me and I will forward them to Stationary Source Compliance Branch (SSCB) of DAQ for their review. Otherwise, the test requirements of Kiln No. 2 (ID No. ES-2) within 60 days of initial start up of the packed bed scrubber (ID No. CD-2QDS) will be added to the permit.

3. The lime injection chamber (ID No. CD-2LIC) associated to the Kiln No. 2 (ID No. ES-2) was installed and tested. Because it could not meet the facility's requirements, it has been removed. Mr. Agner requested to keep this alternate lime injection chamber (ID No. CD-2LIC) in the permit. Therefore, the test requirements of Kiln No. 2 (ID No. ES-2) within 60 days of initial start up of the lime injection chamber (ID No. CD-2LIC) will be added back to the permit.

Please feel free to contact me if you have any questions. I highly appreciate your time and effort in helping with this.

Chengqing

Chengqing Xiao (he/him/his)
Environmental Engineer, Division of Air Quality
North Carolina Department of Environmental Quality
Office: (919) 707-8476
Chengqing.xiao@deq.nc.gov



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From: Joe Konzelmann <jkonzelmann@stalite.com>
Sent: Friday, May 10, 2024 12:09 PM
To: Xiao, Chengqing <chengqing.xiao@deq.nc.gov>
Subject: [External] Re: Title V air permit renewal application for Carolina Stalite Company (8000003.21A)

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Please see attached reports from Tanks 5.0, Gasoline and Diesel.

Gasoline monthly average of 1144 gallons, with an annually throughput of 13725 gallons.

Diesel monthly average of 8032 gallons, with an annually throughput of 96385 gallons.

Calculations performed using Tanks 5.0 software.

If you have any other questions or need any other information please let me know.

Thank You,

Joseph Konzelman Environmental Compliance Supervisor
Stalite Lightweight Aggregate



m: 704.438.2109 | o: 704.279.2166 x138
a: P.O.Box 186 Gold Hill, North Carolina 28071
w: Stalite.com

From: Xiao, Chengqing <chengqing.xiao@deq.nc.gov>
Sent: Thursday, May 9, 2024 5:15 PM
To: Tim Agner <tagner@stalite.com>
Cc: Joe Konzelmann <jkonzelmann@stalite.com>; Jody Wall <jwall@stalite.com>; Hayes, Denise <denise.hayes@deq.nc.gov>; Thaker, Rahul <rahul.thaker@deq.nc.gov>
Subject: RE: Title V air permit renewal application for Carolina Stalite Company (8000003.21A)

Caution: The sender is from outside your organization and may be malicious.

Good afternoon Mr. Agner,

I got one more question. According to the most recent compliance inspection (conducted September 14, 2023) report, the facility has a gasoline tank (1,000 gallon capacity) onsite that is used for work vehicles around the site. Please provide the following information for this gasoline tank via email.

- The monthly and annual gasoline throughput
- The annual VOC emissions rates for this gasoline storage tank including the calculations. For your reference, you may use this link: [TANKS Emissions Estimation Software, Version 4.09D | US EPA](#) to calculate the tank VOC emissions.

Please feel free to contact me if you have any questions.

Thank,

Chengqing

Chengqing Xiao (he/him/his)
Environmental Engineer, Division of Air Quality
North Carolina Department of Environmental Quality
Office: (919) 707-8476
Chengqing.xiao@deq.nc.gov



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From: Xiao, Chengqing
Sent: Tuesday, May 7, 2024 4:31 PM

To: TAgner@stalite.com

Cc: jkonzelmann@stalite.com; JWall@stalite.com; Thaker, Rahul <rahul.thaker@deq.nc.gov>

Subject: RE: Title V air permit renewal application for Carolina Stalite Company (8000003.21A)

Good afternoon Mr. Agner,

Per our phone conversation early this afternoon, you and I discussed the following changes.

- The lime injection chamber (ID No. CD-2LIC) associated to the Kiln No. 2 (ID No. ES-2) was installed and tested. Because it could not meet the facility's requirements, it has been removed. You request to keep this alternate lime injection chamber (ID No. CD-2LIC) in the permit. Therefore, the test requirements of Kiln No. 2 (ID No. ES-2) within 60 days of initial start up of the lime injection chamber (ID No. CD-2LIC) will be added back to the permit.
- The alternated packed bed scrubber (ID No. CD-2QDS) associated to Kiln No. 2 (ID No. ES-2) has not been installed and you request to keep it in the permit as well.
- The storage silo (ID No. ES-16) as baghouse catch stores mix of flyash and lime. The storage silos (ID Nos. ES-7 through ES-10) are also used to store mix of flyash and lime. The source descriptions for these storage silos in the permit will be changed to flyash/lime storage silos.

Please feel free to contact me if you have any questions.

Thank you for your time and the information.

Chengqing

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From: Xiao, Chengqing

Sent: Friday, May 3, 2024 12:07 PM

To: JWall@stalite.com

Cc: jkonzelmann@stalite.com; TAgner@stalite.com

Subject: Title V air permit renewal application for Carolina Stalite Company (8000003.21A)

Good afternoon Mr. Wall,

My name is Chengqing Xiao from Division of Air Quality (DAQ). I just joined the DAQ Title V permitting group in Raleigh Central Office (RCO). The Title V permit renewal application for Carolina Stalite Company (8000003.21A) has been reassigned to me. I am currently working on the technical review for this application and have couple questions.

Please see the attached electronic copy of the current Air Quality Permit No. 03059T49 with red mark circled places on page 4 & 13 regarding my questions below.

- On page 13, Section 2.1 A.5.d. has word "RESERVED". Please let me know whether you want to remove this "RESERVED" and rearrange the following sequence numbers in the next permit.
- On page 4, the source description for the permitted source (ID No. ES-16) is "lime storage silo". The most recent compliance inspection was conducted on September 14, 2023 by Denise Hayes of DAQ-MRO. In the inspection report, Ms. Hayes indicated "That the lime storage silo (ID No. ES-16) with associated bagfilter (ID No. CD-16) has been repurposed and is used as a flyash silo to load tanker trucks." Please verify whether it is correct and let me know whether you want to update the source description to "flyash storage silo" or remain as "lime storage silo" for this source (ID No. ES-16).

Please provide the above information via email as early as you can, and feel free to contact me if you have any questions.

Thank you for your time in helping with this.

Chengqing

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