

**NORTH CAROLINA DIVISION OF  
AIR QUALITY**

**Air Permit Review**

Permit Issue Date: **ENTER ISSUANCE DATE**

**Region:** Mooresville Regional Office  
**County:** Rowan  
**NC Facility ID:** 8000003  
**Inspector's Name:** Denise Fogleman  
**Date of Last Inspection:** 08/30/2005  
**Compliance Code:** W/In Violation W/regard To Proc Compliance

<b>Facility Data</b>			<b>Permit Applicability (this application only)</b>
<b>Applicant (Facility's Name):</b> Carolina Stalite Company  <b>Facility Address:</b> Carolina Stalite Company 16815 Old Beattys Ford Rd. Gold Hill, NC 28071  <b>SIC:</b> 3281 / Cut Stone And Stone Products <b>NAICS:</b> 327991 / Cut Stone and Stone Product Manufacturing  <b>Facility Classification: Before:</b> Title V <b>After:</b> Title V <b>Fee Classification: Before:</b> Title V <b>After:</b> Title V			<b>SIP:</b> Yes <b>NSPS:</b> Yes <b>NESHAP:</b> No <b>PSD:</b> Yes <b>PSD Avoidance:</b> No <b>NC Toxics:</b> No <b>112(r):</b> No <b>Other:</b> Compliance Assurance Monitoring (CAM)
<b>Contact Data</b>			<b>Application Data</b>
<b>Facility Contact</b>	<b>Authorized Contact</b>	<b>Technical Contact</b>	<b>Application Number:</b> 8000003.05D <b>Date Received:</b> 10/13/2005 <b>Application Type:</b> Modification <b>Application Schedule:</b> TV-Significant <b>Existing Permit Data</b> <b>Existing Permit Number:</b> 03059/T31 <b>Existing Permit Issue Date:</b> 06/16/2005 <b>Existing Permit Expiration Date:</b> 11/30/2006
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<b>Review Engineer:</b> Fern Paterson  <b>Review Engineer's Signature:</b> _____ <b>Date:</b> _____		<b>Comments / Recommendations:</b> Issue 03059/T32 <b>Permit Issue Date:</b> <b>ENTER ISSUANCE DATE</b> <b>Permit Expiration Date:</b> <b>ENTER EXPIRATION DATE</b>	

**I. Purpose of Application**

Currently, Carolina Stalite Company (Stalite) holds Title V Permit No. 03059T31 with an expiration date of November 30, 2006 for a lightweight aggregate plant located in Gold Hill, Rowan County, North Carolina. On October 13, 2005, the Division of Air Quality (DAQ) received an Air Quality Permit Application (Application No. 8000003.05D) to make a significant modification to the existing Title V permit that authorizes the operation of a seventh kiln (**ID No. ES-17**). The Permittee was previously authorized to construct the kiln under Permit No. 03059T30, issued on March 16, 2004, and is submitting this application to authorize operation of the source in accordance with the procedures in 15A NCAC 2Q .0504 [i.e., *this permit application constitutes the second part of a 15A NCAC 2Q .0501(d)(2) significant modification*].<sup>1</sup> In addition, this permit modification will incorporate two

<sup>1</sup> Permit No. 03059T30 authorized the construction (only) of the kiln (**ID No. ES-17**) with an increased throughput capacity of 35 tons rock/hr. The same unit was previously permitted for construction and operation at a maximum capacity of 23 tons rock/hr. The modification also extended to kiln-support equipment, as follows: reduce the required control efficiency of the lime slurry injection system, add four aggregate conveyors, one coal conveyor, and one flyash/dust storage silo, increase the size of the baghouse, and replace one aggregate conveyor. As part of the modification, the Permittee also REMOVED an eighth kiln (**ID No. ES-18**) and associated support equipment.

conveyor belts (**ID Nos. ES-26a and ES-11; Conveyor No. 45a**), which were authorized for construction and operation as a 502(b)(10) change in Permit No. 03059T31.

## II. Permit Modifications/Changes

The following table describes the modifications to the current permit.

Old Page(s)	New Page(s)	Section	Description of Change(s)
Cover	Cover	-	Amend permit revision numbers and issuance/effective/expiration/renewal dates.
Pages 3-5	Pages 3-5	Sec. 1, Table	Remove asterisks from the following emissions units and control devices: <ul style="list-style-type: none"> <li>- <b>CD-1a, lime slurry injection system for ES-1</b></li> <li>- <b>CD-2a, lime slurry injection system for ES-3</b></li> <li>- <b>CD-3a, lime slurry injection system for ES-3</b></li> <li>- <b>CD-3b, bagfilter for ES-3</b></li> <li>- <b>CD-4a, lime slurry injection system for ES-4</b></li> <li>- <b>CD-4b, bagfilter for ES-4</b></li> <li>- <b>CD-5a, lime slurry injection system for ES-5</b></li> <li>- <b>CD-5b, bagfilter for ES-5</b></li> <li>- <b>CD-6a, lime slurry injection system for ES-6</b></li> <li>- <b>ES-17, kiln no. 7</b></li> <li>- <b>CD-17a, lime slurry injection system for ES-17</b></li> <li>- <b>CD-17b, bagfilter for ES-17</b></li> <li>- <b>ES-11 (Conveyor No. 45a)</b></li> <li>- <b>ES-25, slate conveyor (30")</b></li> <li>- <b>ES-26a, belt conveyor (36")</b></li> <li>- <b>ES-19, flyash/dust silo</b></li> <li>- <b>ES-21a, belt conveyor (24")</b></li> <li>- <b>CD-21a, water spray</b></li> <li>- <b>ES-21b, belt conveyor (24")</b></li> <li>- <b>CD-21b water spray</b></li> <li>- <b>ES-24a, slate shuttle conveyor (30")</b></li> <li>- <b>ES-24b, slate shuttle conveyor (30")</b></li> <li>- <b>ES-22, coal conveyor (24")</b></li> </ul>
Page 3	Page 3	Sec. 1, Table	Add reference to CAM applicability for kiln No. 7 ( <b>ID No. ES-17</b> ).
Page 5	Page 5	Sec. 1, Table Footnotes	Remove table footnotes regarding Title V permit shield applicability.
N/A	Page 6	Sec. 2.1 A., Table	Add reference to CAM applicability for kiln No. 7 ( <b>ID No. ES-17</b> ).
Page 7	Page 7	Sec. 2.1 A.2. c. & d.	Indicate that CEM is required on kiln No. 7 ( <b>ID No. ES-17</b> ).
Pages 36-37	Pages 10-11	Sec. 2.1, A.4. d. <i>Previously in Part II.</i>	Move the performance testing requirement, pursuant to 40 CFR 60, Subpart UUU for the kiln ( <b>ID No. ES-17</b> ) from Part II of the permit to Section 2.1 A.4.
Page 36	Page 12	Sec. 2.1, A.4. h. <i>Previously in Part II.</i>	Move requirement to notify the Regional Office of the date of initial startup of the kiln ( <b>ID No. ES-17</b> ) from Part II of the permit to Section 2.1 A.4.
N/A	Page 12	Sec. 2.1, A.4. i.	Add requirement to submit a semiannual summary report of monitoring and recordkeeping activities.
Page 12 (footnote)	Page 12	Sec. 2.1, A.5. d.	Move requirement to conduct an initial test of the kiln ( <b>ID No. ES-17</b> ) within 60 days of achieving the maximum production rate from the footnote to the body of the permit.

Old Page(s)	New Page(s)	Section	Description of Change(s)
Pages 11-12	Page 12	Sec. 2.1, A.5. e., f., and g.	Split the testing requirement (Condition 2.1 A.5.d of Permit No. 03059T31) into three distinct testing requirements to improve permit clarity. No substantive changes were made.
N/A	Pages 12-13	Sec. 2.1, A.5. h. and i.	Add requirement to monitor SO <sub>2</sub> emissions from kiln No. 7 ( <b>ID No. ES-17</b> ) using a CEM.
Pages 12-13	Page 13	Sec. 2.1, A.5. g., k., and l.	Indicate that monitoring provisions (i.e., SO <sub>2</sub> correlation procedures) are subject to kilns No. 1 through 6 ( <b>ID Nos. ES-1 through ES-6</b> ).
N/A	Page 14	Sec. 2.1, A.7	Add CAM requirement for kiln No. 7 ( <b>ID No. ES-17</b> ).
Pages 26-34	Pages 28-36	Sec. 3, General Conditions	Update the permit with the most recent NC DAQ General Conditions
Pages 35-39	N/A	Part II	Remove Part II of the permit.

### III. Statement of Compliance

The DAQ has reviewed the compliance status of this facility. Stalite was issued a Notice of Violation (NOV) on April 11, 2005 regarding the failure to submit an air quality permit application for the lime slurry injection systems on Kilns No. 3 and No. 4 in a timely manner. This NOV is unrelated to the construction of the seventh kiln (**ID No. ES-17**) or the operation of the material handling system. On its latest inspection, conducted on August 30, 2005 by Ms. Denise Fogelman of the Mooresville Regional Office (MRO), it was determined that the Permittee was not maintaining required records of visible emissions observations of slate conveyor (**ID No. ES-25**). The Permittee was found to be in compliance with all other applicable requirements.

### IV. Regulatory Review of Kiln Requirements (Previous Permit No. 03059T30):

#### A. 15A NCAC 2D .0511 – Particulates from Lightweight Aggregate Processes

This regulation provides four distinct standards for particulate emissions from lightweight aggregate processes, as provided below:

- (a) *The operator/owner shall not cause, allow or permit any material to be produced, transported, handled, or stockpiled without taking measures to reduce to a minimum particulate emissions to prevent the ambient air quality standards from being exceeded.*

Permit No. 03059T30, which authorized construction/modification of the kiln (**ID No. ES-17**), the Permittee underwent a full PSD review for total suspended particulate (TSP) and PM<sub>10</sub>. As part of this permitting process, the Permittee performed air dispersion modeling to demonstrate compliance with the NAAQS standards.

- (b) *Fugitive non-process dust emissions are subject to 15A NCAC 2D .0540.*

The 2D .0540 regulation requires the Permittee to submit specific work practice plans to control non-process fugitive dust emissions if substantive complaints, or NCDAQ inspections, indicate the plan is necessary. Kiln emissions are not considered fugitive and therefore the kilns themselves are not subject to this requirement.

- (c) *The owner/operator of any lightweight aggregate process shall control process-generated emissions from crushers with wet suppression, and from conveyers, screens, and transfer points, such that the applicable opacity standards in Rule 2D .0521 or .0524 of this Section are not exceeded.*

The conveyors associated with this significant modification (**ID Nos. ES-21a, ES-21b, ES-22, ES-24a, ES-24b, and ES-25**) are subject to this standard. All of the affected conveyors are also subject to the visible emission standards in either 15A NCAC 2D .0521 (**ID Nos. ES-22**) or 40 CFR 60, Subpart OOO (15A NCAC 2D .0524) (**ID Nos. ES-21a, ES-21b, ES-24a, ES-24b, and**

**ES-25).** The monitoring, recordkeeping, and reporting requirements for these regulations (as detailed below) are sufficient to demonstrate compliance with this lightweight aggregate standard.

*(d) Particulate matter from any stack serving any lightweight aggregate kiln or dryer shall be reduced by at least 95 percent by weight. The 95 percent reduction shall be by air pollution control devices.*

The Permittee is using a bagfilter (**ID No. CD-17b**) to control potential particulate emissions from the kiln (**ID No. ES-17**). The removal efficiency of particulate achieved by a properly operated and maintained bagfilter is generally assumed to be 99% or higher. Compliance with this requirement is expected.

**B. 15A NCAC 2D .0516 – Sulfur Dioxide Emissions From Combustion Sources**

This regulation limits SO<sub>2</sub> emissions from combustion sources to no greater than 2.3 lb SO<sub>2</sub>/mmBtu of heat input. The applicant has estimated the uncontrolled SO<sub>2</sub> emission rate of 532.3 lbs/hr by adding the sulfur contribution from coal combustion (1.2 lb SO<sub>2</sub>/mmBtu) and feed rock (0.475% sulfur by weight). This is equivalent to 6.73 lb SO<sub>2</sub>/mmBtu. To achieve compliance with the 2.3 lb SO<sub>2</sub>/mmBtu emission limitation, the Permittee must control SO<sub>2</sub> emissions from the kiln by at least 66% by weight. Stalite will control SO<sub>2</sub> emissions using a lime slurry injection system, which was determined to be the Best Available Control Technology (BACT) in the PSD permitting process. The lime slurry injection system is required to achieve an 80% emission reduction. Compliance with 15A NCAC 2D .0516 is expected.

**C. 15A NCAC 2D .0521 – Control of Visible Emissions**

Visible emission from the coal conveyor (**ID No. ES-22**) are not subject to any other state or Federal standard, and are thereby affected by 15A NCAC 2D .0521. Pursuant to this requirement, visible emissions shall not be more than 20% opacity when averaged over a six-minute period. However, six-minute averaging periods may exceed 20% 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% opacity. The permit requires Stalite to observe the emission point once a week for visible emissions above “normal” operating conditions or demonstrate that the percent opacity is less than the limit.

**D. 15A NCAC 2D .0524 – 40 CFR 60, Subpart UUU; Standards for Calciners and Dryers in Mineral Industries.**

The kiln (**ID No. ES-17**) is affected by this standard, which limits emissions of particulate matter from the affected unit to no greater than 0.04 grain per dry standard cubic foot (gr/dscf) and limits visible emissions to no greater than 10% opacity. Stalite will use a baghouse (**ID No. CD-17a**) to comply with the PM and visible emissions limitations.

Pursuant to 40 CFR 60.734, the permit requires that Stalite install, calibrate, maintain, and operate a continuous opacity monitoring system (COMS) downstream from the baghouse (**ID No. CD-17a**) that is being used to comply with the standard. The Permittee is required to maintain records of opacity readings from the COMS for a minimum of two years and to submit semiannual reports of all exceedances that are specifically defined as any 60-minute period during which the average opacity is greater than 10 percent.

In addition, the Permittee is required to conduct a stack test of the kiln (and associated control device and monitoring equipment) pursuant to 40 CFR 60.8, 40 CFR 60.736, and Condition JJ of the General Conditions of the Title V permit.<sup>2</sup>

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<sup>2</sup> Note: The particulate matter emission test does require Method 5 but also states that the time and volume for each test run shall be at least 2 hours and 1.70 dscm.

E. 15A NCAC 2D .0524 – 40 CFR 60, Subpart OOO; Standards for Performance of Nonmetallic Mineral Processing Plants

The conveyors (**ID Nos. ES-21a, ES-21b, ES-24a, ES-24b, and ES-25**) were constructed after August 31, 1983 and are therefore subject to 15A NCAC .0524 (40 CFR 60, Subpart OOO). Pursuant to 40 CFR 60.672(b) no owner/operator shall cause to be discharged into the atmosphere from any transfer point on a belt conveyor any fugitive emissions which exhibit greater than 10 percent opacity.

In addition to the initial testing requirements, the permit requires that Stalite observe the emission point once a week for visible emissions above “normal” operating conditions or demonstrate that the percent opacity is less than the limit. If the observer notes non-normal emissions the emission source will be deemed out of compliance unless a Method 9 visible emissions is performed within 24 hours and the emissions are found to be below the applicable standard.

F. 15A NCAC 2D .0530 – Prevention of Significant Deterioration (PSD) Construction Permit Program  
 Stalite has the potential to emit greater than 250 tpy of more than one regulated criteria pollutant, and is therefore classified as a PSD major stationary source. Because the facility is major, each pollutant with an emission increase greater than the "significance" levels is subject to PSD construction permitting program as it is provided in 15A NCAC 2D .0530. The emission increases associated with the significant modification to the kiln (**ID No. ES-17**) and associated process and control equipment are presented below:

<b>Potential Criteria Pollutant Emissions (tons/year)</b>							
	<b>TSP (PM)</b>	<b>PM<sub>10</sub></b>	<b>SO<sub>2</sub></b>	<b>NO<sub>x</sub></b>	<b>CO</b>	<b>VOC</b>	<b>Pb</b>
One kiln (ID No. ES-17)	48.18	48.18	466.29	291.27	90.66		1.57e-3
Five conveyers (ID Nos. ES-21a, ES-21b, ES-22, ES-24a, and ES-24b)	0.37	0.35	-	-	-	-	3.4e-6
One flyash storage silo (ID No. ES-19)	0.049	0.016	-	-	-	-	4.9e-7
<b>TOTAL</b>	<b>48.6</b>	<b>48.5</b>	<b>466.3</b>	<b>291.3</b>	<b>90.7</b>	<b>-</b>	<b>1.57e-3</b>
<b>PSD Significant Emission Rate</b>	<b>25</b>	<b>15</b>	<b>40</b>	<b>40</b>	<b>100</b>	<b>40</b>	<b>0.6</b>
PSD Review Required?	<b>YES</b>	<b>YES</b>	<b>YES</b>	<b>YES</b>	<b>NO</b>	<b>NO</b>	<b>NO</b>
PSD Review Completed in Permit No. 03059T30?	<b>YES</b>	<b>YES</b>	<b>YES</b>	<b>YES</b>	<b>n/a</b>	<b>n/a</b>	<b>n/a</b>

The Permit Review for the PSD permit (Permit No. 03059T30), which was available for a 30-day public comment period, provides a detailed analysis of the full PSD review. The following paragraphs provide an abbreviated summary of the PSD review.

Stalite submitted the following reviews and analyses required for PSD review for each subject pollutant i.e., PM, PM<sub>10</sub>, SO<sub>2</sub>, and NO<sub>x</sub>):

- A Best Available Control Technology (BACT) Determination as determined by the permitting agency on a case-by-case basis in accordance with 40 CFR 51.166(j),
- An Air Quality Impacts Analysis including monitoring and air modeling to determine impacts on air quality in accordance with 40 CFR 51.166(k),
- An Additional Impacts Analysis including effects on soils and vegetation, and impacts on visibility in accordance with 40 CFR 51.166(o).

- Class I impacts analysis in accordance with 40 CFR 51.166(p).

#### **BACT for PM/PM<sub>10</sub>**

Stalite proposed bagfilter control for the removal of particulate from the exhaust gas from kiln (**ID No. ES-17**). Fabric filtration is generally considered the most effective particulate removal technology and therefore the DAQ approves the use of bagfilter as BACT for particulate emission control from this kiln.

#### **BACT for SO<sub>2</sub>**

Stalite reviewed three different technologies for the control of SO<sub>2</sub>: a Venturi wet scrubber, dry lime injection in the baghouse ductwork, and a wet lime slurry injection in the baghouse.

Stalite found that the Venturi wet scrubber would result in the production of approximately 9,850 tons/year of waste sludge that would require disposal. In addition, the wet scrubber would require a pressure drop of up to 25 inches of water to adequately control SO<sub>2</sub> emissions from the kiln. Sustaining the pressure drop would require approximately three times as much energy to operate than would be required for the lime slurry injection system.

The dry lime injection system and wet lime injection systems are comparable in control efficiency. However, the wet lime injection system has the advantage of (1) being more cost effective than the dry lime injection system and (2) having demonstrated success of controlling SO<sub>2</sub> emissions at 80% by weight or greater at the existing kilns operated at the Stalite facility.

The DAQ also considered the option of combusting natural gas instead of coal at the kiln to reduce SO<sub>2</sub> emissions. However, it was determined that this option is economically infeasible, with an estimated cost of control of \$3,024/ton of SO<sub>2</sub> removed.

BACT for the control of SO<sub>2</sub> emissions at the kiln was determined to be the lime slurry injection system.

#### **BACT for NO<sub>x</sub>**

Stalite reviewed three different technologies for the control of NO<sub>x</sub>: a selective catalytic reduction system (SCR), a selective non-catalytic reduction system (SNCR), and a low-temperature oxidation system (LoTOx).

Both the SCR and SNCR systems were found to have potentially negative environmental impacts associated with the use of ammonia, which is a regulated toxic air pollutant in North Carolina and also a chemical with significant health and safety hazards. In addition, the control methods were found to be prohibitively expensive at \$10,592/ton NO<sub>x</sub> removed for the SCR and \$8,760/ton NO<sub>x</sub> removed for the SNCR.

The LoTOx system, which is a relatively new control technology, was also found to be prohibitively expensive at \$8,991/ton NO<sub>x</sub> removed.

Reviewing the BACT analysis, the DAQ concluded that good combustion techniques would be considered BACT and that no add-on control device would be required.

#### **Impact Analyses (Air Quality, Additional Impacts, and Class I)**

All air quality impact analyses, including air dispersion modeling, were performed by the Permittee as part of the PSD permitting process for Permit No. 03059T30 (Application No. 800003.03C). The impact analyses were reviewed and approved by Mr. Charles Buckler in the Air Quality Analysis Branch of the DAQ. The air dispersion modeling analyses is provided in an attachment to the Permit Review Document for Permit No. 03059T30.

V. **Regulatory Review of Conveyor (Previous Permit No. 03059T31):**

A. 15A NCAC 2D .0511 – Particulates from Lightweight Aggregate Processes

Pursuant to this rule, the owner/operator of a lightweight aggregate process 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 from being exceeded beyond the property line. The rule requires controls for conveyors “such that the applicable opacity standards in Rule .0521 or .0524 of this Section are not exceeded.”

The Kiln No. 1 & Kiln No. 2 clinker conveyor (**ID No. ES-26a**) is a new unit and is subject to 15A NCAC .0524 (40 CFR 60, Subpart OOO). Demonstration of compliance with 15A NCAC .0524 shall be sufficient to demonstrate compliance with 15A NCAC 2D .0511.

The ¾-inch stockpile conveyor (**ID No. ES-11, Conveyor No. 45a**) replacement unit was previously operated at Stalite as the Kiln No. 1 & Kiln No. 2 clinker conveyor. The unit was not constructed, reconstructed, or modified after August 31, 1983, and therefore was not affected by the NSPS. The unit *is* affected by 15A NCAC .0521 (Visible Emissions). Demonstration of compliance with 15A NCAC .0521 shall be sufficient to demonstrate compliance with 15A NCAC 2D .0511.

B. 15A NCAC 2D .0524 – 40 CFR 60, Subpart OOO, NSPS for Nonmetallic Mineral Processing Plants

The Kiln No. 1 & Kiln No. 2 clinker conveyor (**ID No. ES-26a**) was constructed after August 31, 1983 and is subject to 15A NCAC .0524 (40 CFR 60, Subpart OOO). Pursuant to 40 CFR 60.672, visible emissions from the conveyor belt may not exceed 10% opacity. The Permittee uses a water spray to control potential dust/opacity emissions.

The permit requires that Stalite observe the emission point once a week for visible emissions above “normal” operating conditions or demonstrate that the percent opacity is less than the limit.

C. 15A NCAC 2D .0521 – Control of Visible Emissions

The ¾-inch stockpile conveyor (**ID No. ES-11, Conveyor No. 45a**) was previously being operated at Stalite as the Kiln No. 1 & Kiln No. 2 clinker conveyor. The unit not affected under 40 CFR 60, Subpart OOO because it has not been constructed, reconstructed, or modified after August 31, 1983. No physical modification will be made to the 30-inch wide belt that will result in actual or potential emission increases from the conveyor.

The original belt conveyor *was* constructed after July 1, 1971 and is therefore subject to the visible emissions limitations provided in 15A NCAC 2D .521(d). Pursuant to this requirement, visible emissions shall not be more than 20% opacity when averaged over a six-minute period. However, six-minute averaging periods may exceed 20% 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% opacity. Stalite is utilizing a water sprays as dust suppressant to comply with the opacity limitation. The permit requires Stalite to observe the emission point once a week for visible emissions above “normal” operating conditions or demonstrate that the percent opacity is less than the limit.

D. 15 NCAC 2D .0540 – Particulates from Fugitive Non-Process Dust Emission Sources

This rule requires the Permittee to submit specific work practice plans to control non-process fugitive dust emissions if substantive complaints or DAQ inspections indicate the plan is necessary. Currently, no site-specific fugitive dust plan is required of this facility.

VI. **15A NCAC 2D .1100 and 15A NCAC 2Q .0700: Toxic Air Pollutants**

The DAQ administers a state-specific, health-based air toxics program. The permitting procedures for the program are contained in 15A NCAC 2Q .0700 and the actual ambient guidelines are contained in 2D .1100. The program is a two-tiered system such that for each triggered toxic air pollutant (TAP) the facility wide emissions are first compared to the Toxic Permit Exemption Rates (TPERs) in 2Q .0700. If the facility wide emission rate is less than the TPER no further analysis is required. If however the emission rate exceeds the TPER levels, the Permittee must

perform an air dispersion analysis and demonstrate that the ambient concentration at the property line for any triggered TAP is less than the Acceptable Ambient Level (AAL) as listed in 2D .1100.

Stalite previously provided an air dispersion analysis to demonstrate that the ambient concentration at the property line for any triggered TAP is less than the AAL as listed in 2D .1100, which resulted in the emissions limitations provided in the following table. The significant modification to the kiln (**ID No. ES-17**) in Permit No. 03059T30 and the addition of the conveyors in Permit No. 03059T31 did not result in a potential increase in toxic air pollutants (any emission rate increase at the larger seventh kiln is offset by the removal of the eighth kiln, ES-18, from the permit). Therefore not changes have been made to the existing TAP emission limitations.

<b>Emission Source(s)</b>	<b>Toxic Air Pollutant(s)</b>	<b>Emission Limit(s)</b>
Facilitywide	Arsenic	6.88 lbs/yr
Facilitywide	Benzo(a)pyrene	100.0 lbs/yr
Facilitywide	Benzene	945 lbs/yr
Facilitywide	Beryllium	13.35 lbs/yr
Facilitywide	Bromine	8.55 lbs/hr
Facilitywide	Chromium VI	9.29 x 10 <sup>-3</sup> lb/yr
Facilitywide	Cadmium	0.521 lbs/yr
Facilitywide	Formaldehyde	0.052 lbs/hr
Facilitywide	Hydrogen Chloride	2.01 lbs/hr
Facilitywide	Hydrogen Fluoride	0.86 lb/hr, 20.6 lb/day
Facilitywide	Manganese	8.57 x 10 <sup>-1</sup> lb/day
Facilitywide	Mercury	0.105 lbs/day

## **VII. Continuous Assurance Monitoring**

Pursuant to the Continuous Assurance Monitoring (CAM) requirements provided in 40 CFR Part 64, a Permittee must evaluate CAM applicability for any emission source undergoing a significant permit modification. In such cases, CAM applies to any source that has potential post-control emissions of any regulated criteria pollutant greater than major source thresholds AND which is using an emissions control device to comply with an emission limit or standard.

The emission unit for which this permit is being modified is kiln No. 7 (**ID No. ES-17**), which has potential post-control emissions of SO<sub>2</sub> greater than 100 tons/year. Therefore, the CAM requirements apply to this emissions unit. The DAQ has found that the existing SO<sub>2</sub> monitoring provisions for kilns No. 7 in Section 2.1 A. 3. (i.e., 15A NCAC 2D .0516) and Section 2.1 A. 5. (i.e., 15A NCAC 2D .0530, PSD), which include the use of a continuous emission monitoring (CEM) device to demonstrate compliance with the applicable SO<sub>2</sub> emissions limitations, are sufficient to meet the requirements of CAM. The DAQ has added a provision to the permit to conduct an inspection of the control device, a lime slurry injection system (**ID No. CD-17a**) each time that the monitored SO<sub>2</sub> emissions are within 5% of the PSD emission limit, which is significantly more stringent than the SIP limit provided in 15A NCAC 2D .0516.

Note that kiln No. 7 (**ID No. ES-17**) also has potential post-control emissions of greater than 100 tons/year of nitrogen dioxide, but no control device is being used. Therefore CAM does not apply.

Additional CAM applicability determinations for other emission units at Stalite must be conducted when a significant modification to the Title V permit is made and/or the Permittee applies for a Title V permit renewal.

### **VIII. Permit History:**

The following list provides a very brief summary of Title V permit revisions for this facility:

<u>UUPermit No.</u>	<u>Issuance Date</u>	<u>Description of Revision</u>
03059T24	December 2001	Initial Title V permit, including a PSD review. (Note 03059T22 was issued in March 2001 and, following a petition filed by the Permittee, was replaced by 03059R23 in August 2001.)
03059T25	February 2002	Administrative amendment to permit to revise language pursuant to request from Counsel.
03059T26	July 2002	Extend deadline to install and operate hydrated lime slurry injection systems on kilns ( <b>ID Nos. ES-3 &amp; ES-4</b> ) for one year.
03059T27	April 2003	Permit to install a stone crusher, screen and five conveyors.
03059T28	August 2003	Permit to replace an existing screen with a new screen with a larger top surface area.
03059T29	December 2003	Permit to install two new conveyers ( <b>ID Nos. ES-23a &amp; ES-23b</b> ).
03059T30	March 2004	<i>PSD Permit.</i> Permit to install an aggregate kiln ( <b>ID No. ES-17</b> ), hydrated lime slurry injection system ( <b>ID No. CD-17a</b> ), two aggregate conveyors ( <b>ID No. ES-21a and ES-21b</b> ), two water sprays ( <b>ID Nos. CD-21a &amp; CD-21b</b> ), one coal conveyor ( <b>ID No. ES-22</b> ), one flyash/dust silo ( <b>ID No. ES-19</b> ), two baghouses ( <b>ID Nos. CD-17b &amp; CD-19</b> ), one slate conveyor ( <b>ID No. ES-25</b> ), and two slate shuttle conveyors ( <b>ID Nos. ES-24a &amp; ES-24b</b> ). Several pieces of equipment were also removed from the permit as part of the modification.
03059T31	June 2005	Authorize the construction and operation of two new conveyor belts ( <b>ID Nos. ES-26a and ES-45a</b> ).

### **VII. Other Regulatory Considerations**

- The Reduction and Recycling Form is not required for this application.
- A Professional Engineers Seal is required not required for this application.
- A zoning consistency determination is not required for this application.
- A 30-day public notice period is required for this application.
- The application and proposed permit must be provided to U.S. EPA, Region 4 for review.

### **VIII. Recommendations**

This permit modification application for the Carolina Stalite Company of Gold Hill, Rowan County, North Carolina has been reviewed by NC DAQ to determine compliance with all procedures and requirements. The DAQ has determined that this facility is complying or will achieve compliance, as specified in the permit, with all requirements that are applicable to the affected kiln and conveyors.

**Issue Permit No. 03059T32.**