FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION
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PERMITTEE

Suwannee American Cement, LLC
5117 U.S. Highway 27
Branford, Florida 32008

Authorized Representative:
Mr. Tom Messer, Plant Manager

Air Permit No. 1210465-034-AC
Permit Expires: June 30, 2015
Minor Air Construction Permit

Branford Cement Plant
Sulfur Dioxide (SO_2) Emission Standard

PROJECT

This is the final air construction permit, which revises the kiln SO_2 emission standard including the emission limit and averaging period. The proposed work will be conducted at the existing Branford Cement plant, which is categorized under Standard Industrial Classification Code No. 3241. The existing Branford Cement Plant is located in Suwannee County at 5117 U.S. Highway 27 in Branford, Florida. The Universal Traverse Mercator (UTM) coordinates Zone 17, 321.4 kilometers (km) East and 3315.9 km North.

This final permit is organized into the following sections: Section 1 (General Information); Section 2 (Administrative Requirements); Section 3 (Emissions Unit Specific Conditions); and Section 4 (Appendix).

STATEMENT OF BASIS

This air pollution construction permit is issued under the provisions of: Chapter 403 of the Florida Statutes (F.S.) and Chapters 62-4, 62-204, 62-210, 62-212, 62-296 and 62-297 of the Florida Administrative Code (F.A.C.). The permittee is authorized to conduct the proposed work in accordance with the conditions of this permit. This project is subject to the general preconstruction review requirements in Rule 62-212.300, F.A.C. and is not subject to the preconstruction review requirements for major stationary sources in Rule 62-212.400, F.A.C. for the Prevention of Significant Deterioration (PSD) of Air Quality.

Upon issuance of this final permit, any party to this order has the right to seek judicial review of it under Section 120.68 of the Florida Statutes by filing a notice of appeal under Rule 9.110 of the Florida Rules of Appellate Procedure with the clerk of the Department of Environmental Protection in the Office of General Counsel (Mail Station #35, 3900 Commonwealth Boulevard, Tallahassee, Florida, 32399-3000) and by filing a copy of the notice of appeal accompanied by the applicable filing fees with the appropriate District Court of Appeal. The notice must be filed within 30 days after this order is filed with the clerk of the Department.

Executed in Tallahassee, Florida

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for Jeffery F. Koerner, Program Administrator
Office of Permitting and Compliance
Division of Air Resource Management

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CERTIFICATE OF SERVICE

The undersigned duly designated deputy agency clerk hereby certifies that this Air Permit package was sent by electronic mail, or a link to these documents made available electronically on a publicly accessible server, with received receipt requested before the close of business on the date indicated below to the following persons.

Mr. Tom Messer, Suwannee American Cement, LLC: tomm@vcsmc.com
Mr. Krishna Cole, Suwannee American Cement, LLC: krishnac@suwanneecement.com
Dr. Max Lee, Koogler and Associates: mlee@kooglerassociates.com
Mr. Richard Rachal, DEP Northeast District: richard.rachal@dep.state.fl.us
Ms. Heather Ceron, EPA Region 4: ceron.heather@epa.gov
Ms. Lorinda Shepherd, EPA Region 4: shephard.lorinda@epa.gov
Ms. Lynn Scearce, DEP OPC: lynn.scearce@dep.state.fl.us

Clerk Stamp

FILING AND ACKNOWLEDGMENT FILED, on this date, pursuant to Section 120.52(7), Florida Statutes, with the designated agency clerk, receipt of which is hereby acknowledged.
(Electronic Signature)

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FACILITY DESCRIPTION

The existing facility consists of a Portland cement manufacturing plant, the associated quarry, and raw material and cement handling operations. The plant combines raw materials and utilizes a preheater/calciner kiln system with in-line raw mill to produce cement clinker. The clinker is milled and combined with gypsum and limestone to produce Portland cement. The existing plant has a capacity of 210 tons per hour of dry preheater feed materials, 120 tons per hour of clinker production, and 150 tons per hour of Portland cement production. Annual production is limited to the following 12-month rolling totals: 1,648,578 tons per year of dry preheater feed materials; 965,425 tons per year of clinker production; and 1,191,360 tons per year of Portland cement production.

The main stack is equipped with continuous emission monitoring systems (CEMS) for volatile organic compounds (VOC), total hydrocarbons (THC), nitrogen oxides (NO_X), sulfur dioxide (SO_2), a process monitor for carbon monoxide (CO) and a continuous opacity monitoring system (COMS) for visible emissions.

The existing facility consists of the following emissions units (EU).

Facility ID No. 1210465

EU No.	Emission Unit Description
001	1,000 TPH primary crusher and associated unenclosed belt conveyors to raw material storage – fugitive emissions
002	Raw material processing operations controlled by baghouses
003	Raw material processing – unenclosed conveyor transfer points – D conveyors
004	In line kiln/raw mill controlled by baghouse – main stack
005	Clinker cooler controlled by Electrostatic Precipitator (ESP)
006	Clinker and cement processing operations controlled by baghouses
007	Clinker and cement processing – unenclosed conveyor transfer points – M conveyors
008	Coal mill and coal transfer system controlled by baghouses
009	Unenclosed coal conveying equipment – S conveyors
010	Natural gas fired emergency generator set

PROPOSED PROJECT

This permit affects EU 004. The proposed project is to reduce the SO_2 emissions limit from 0.20 lb/ton clinker to 0.183 lb/ton clinker and increase the averaging period of the allowable SO_2 emissions from a 3-hr averaging period to a 24-hr averaging period. The original PSD permit established the SO_2 3-hr emissions limit which was reaffirmed as part of Air Permit No. 1210465-011-AC. This permit will be revised as a result of this permitting action.

This project will affect the following emissions units. Conditions applicable to the following.

Facility ID No. 1210465

EU No.	Emission Unit Description
004	In line kiln/raw mill controlled by baghouse – main stack

FACILITY REGULATORY CLASSIFICATION

- The facility is a major source of hazardous air pollutants (HAP).
- The facility is a Title V major source of air pollution in accordance with Chapter 62-213, F.A.C.
- The facility is a major stationary source in accordance with Rule 62-212.400(PSD), F.A.C.

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SECTION 2. ADMINISTRATIVE REQUIREMENTS (DRAFT)

1. Permitting Authority: The permitting authority for this project is the Office of Permitting and Compliance in the Division of Air Resource Management of the Department of Environmental Protection (Department). The Office of Permitting and Compliance mailing address is 2600 Blair Stone Road (MS #5505), Tallahassee, Florida 32399-2400. All documents related to applications for permits to operate an emissions unit shall be submitted to the Air Resource Section of the Department's Northeast District Office at 8800 Baymeadows Way, Suite 100, Jacksonville, Florida 32256-7590.

2. Compliance Authority: All documents related to compliance activities such as reports, tests, and notifications shall be submitted to the Air Resource Section of the Department's Northeast District Office at 8800 Baymeadows Way, Suite 100, Jacksonville, Florida 32256-7590.

3. Appendices: The following Appendices are attached as a part of this permit: Appendix A (Citation Formats and Glossary of Common Terms); Appendix B (General Conditions); Appendix C (Common Conditions); and Appendix D (Common Testing Requirements).

4. Applicable Regulations, Forms and Application Procedures: Unless otherwise specified in this permit, the construction and operation of the subject emissions units shall be in accordance with the capacities and specifications stated in the application. The facility is subject to all applicable provisions of: Chapter 403, F.S.; and Chapters 62-4, 62-204, 62-210, 62-212, 62-213, 62-296 and 62-297, F.A.C. Issuance of this permit does not relieve the permittee from compliance with any applicable federal, state, or local permitting or regulations.

5. New or Additional Conditions: For good cause shown and after notice and an administrative hearing, if requested, the Department may require the permittee to conform to new or additional conditions. The Department shall allow the permittee a reasonable time to conform to the new or additional conditions, and on application of the permittee, the Department may grant additional time. [Rule 62-4.080, F.A.C.]

6. Modifications: The permittee shall notify the Compliance Authority upon commencement of construction. No new emissions unit shall be constructed and no existing emissions unit shall be modified without obtaining an air construction permit from the Department. Such permit shall be obtained prior to beginning construction or modification. [Rules 62-210.300(1) and 62-212.300(1)(a), F.A.C.]

7. Construction and Expiration. The expiration date shown on the first page of this permit provides time to complete the physical construction activities authorized by this permit, complete any necessary compliance testing, and obtain an operation permit. Notwithstanding this expiration date, all specific emissions limitations and operating requirements established by this permit shall remain in effect until the facility or emissions unit is permanently shut down. For good cause, the permittee may request that that a permit be extended. Pursuant to Rule 62-4.080(3), F.A.C., such a request shall be submitted to the Permitting Authority in writing before the permit expires. [Rules 62-4.070(4), 62-4.080 & 62-210.300(1), F.A.C.]

8. Source Obligation:

   (a) At such time that a particular source or modification becomes a major stationary source or major modification (as these terms were defined at the time the source obtained the enforceable limitation) solely by virtue of a relaxation in any enforceable limitation which was established after August 7, 1980, on the capacity of the source or modification otherwise to emit a pollutant, such as a restriction on hours of operation, then the requirements of subsections 62-212.400(4) through (12), F.A.C., shall apply to the source or modification as though construction had not yet commenced on the source or modification.

   (b) At such time that a particular source or modification becomes a major stationary source or major modification (as these terms were defined at the time the source obtained the enforceable limitation) solely by exceeding its projected actual emissions, then the requirements of subsections 62-212.400(4) through (12), F.A.C., shall apply to the source or modification as though construction had not yet commenced on the source or modification.

   [Rule 62-212.400(12), F.A.C.]

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9. Application for Title V Permit: This permit authorizes construction of the permitted emissions units and initial operation to determine compliance with Department rules. A Title V air operation permit is required for regular operation of the permitted emissions unit. The permittee shall apply for a Title V air operation permit at least 90 days prior to expiration of this permit, but no later than 180 days after commencing operation. To apply for a Title V operation permit, the applicant shall submit the appropriate application form, compliance test results, and such additional information as the Department may by law require. The application shall be submitted to the appropriate Permitting Authority with copies to the Compliance Authority. [Rules 62-4.030, 62-4.050, 62-4.220 and Chapter 62-213, F.A.C.]

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EU 004 – Inline Kiln/Raw Mill

This section of the permit addresses the following emissions units.

E.U. ID No.	Emission Unit Description
004	In line kiln/raw mill controlled by baghouse - main stack

COMPLIANCE WITH EXISTING PERMIT CONDITIONS

1. Existing Permits: This permit supplements all existing valid air construction permits. The permittee shall continue to comply with all applicable conditions from valid air construction permits (as incorporated into the current Title V air operation permit No. 1210465-019-AV), except as modified by this permit. [Rule 62-4.070, F.A.C. and Air Construction Permit No. 1210465-001-AC (PSD-FL-259), including all modifications thereof]

PERMIT BEING MODIFIED

Permit No. 1210465-011-AC

2. Section III, Subsection B, Specific Condition 15.

   15. Emissions Unit 004: Emissions unit 004 shall have one emission point, the stack of the in-line kiln/raw mill, designated by the applicant as E-21. Particulate matter emissions from this emissions unit shall be controlled by a baghouse.

   Emissions from emissions unit 004, the in-line kiln/raw mill, shall not exceed the following limits for the following pollutants: [Emissions from the natural gas fired air heater are included in the limits below]

POLLUTANT	EMISSION LIMIT		AVERAGING TIME	BASIS
PM	0.11 lb/ton of dry preheater feed	23.1 lb/hour	3 hours [3]	BACT
PM_{10}	0.093 lb/ton of dry preheater feed	19.6 lb/hour	3 hours [3]	BACT
SO_2	~~0.20~~ 0.183 lb/ton of clinker	~~24.0~~ 22.0 lb/hour	~~3~~ 24 hours [4]	BACT
NO_X	2.9 lb/ton of clinker [1]	304.5 lb/hour [1]	24 hours [4]	BACT
	2.4 lb/ton of clinker [1]	288 lb/hour [1]	30 days [4]	
CO	3.34 lb/ton of clinker	400.3 lb/hour	3 hours [5]	BACT
VOC	0.12 lb/ton of clinker [2]	14.4 lb/hour [2]	30 days [6]	BACT
Visible Emissions (VE)	10% opacity		6 minutes [7]	BACT

1. NOx emissions shall not exceed 3.8 lb/ton of clinker and 399.0 lb/hour during the first 12 months after initial startup. After 12 months after initial plant startup, emissions of NOx shall not exceed the limits shown in the table. Emissions of NOx up to 600 lb/hr for up to one hour in duration shall be allowed for each startup of the pyroprocessing system which occurs when there is no material in the kiln.

   Malfunction of the SNCR system is defined as any unavoidable mechanical and/or electrical failure that prevents introduction of ammonia-based solutions into the kiln system. In accordance with the following limits, the exclusion of NOx data collected during periods of malfunction and/or repair of the SNCR system is allowed when demonstrating compliance with the 24-hour NOx standard: no

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more than 6 hours per calendar day and no more than 30 hours in any 30 operating-day block. Within one working day of occurrence, the permittee shall notify the Department's Northeast District office of any malfunction of the SNCR system.

If SNCR is added, a permanent tank for the storage of ammonia-based solutions shall be installed. During construction of the permanent tank, temporary storage tanks may be used. An additional 4 hours of NOx data exclusion is allowed for each switch between temporary storage tanks. This 4-hour data exclusion is in addition to the data exclusion allowed above for each calendar day and for each 30 operating-day block. No more than 12 hours of NOx data in any 30 operating-day block shall be excluded due to switching between temporary tanks. Within one working day of occurrence, the permittee shall notify the Department's Northeast District office of each switch between temporary storage tanks. Once the permanent ammonia storage is complete, no NOx data shall be excluded due to switching between temporary tanks. All valid NOx hourly averages shall be included into the 30 operating-day block average.

2. VOC emissions shall be expressed as propane.
3. The averaging times for PM and PM10 correspond to the required length of sampling for the initial and subsequent emission tests.
4. The averaging time for the short-term NOx limit shall be a 24-hour rolling average computed in accordance with specific condition 18 of this subsection. The averaging time for the long-term NOx limit shall be a 30 operating-day block average computed in accordance with specific condition 18 of this subsection. The averaging time for SO_2 shall be a ~~3~~24-hour rolling average computed in accordance with specific condition 18 of this subsection.
5. The averaging time for CO corresponds to the required length of sampling for the initial and subsequent emission tests.
6. The averaging time for VOC shall be a 30 operating-day block average computed in accordance with specific condition 18 of this subsection.
7. The averaging time for visible emissions shall be a 6-minute block average that shall be computed from a minimum of one measurement every 15 seconds. The 6 minute block averages shall start at the beginning of each hour.

[Note: These emission limits, along with annual production limits, effectively limit annual emissions to: PM, 92.8; PM_{10}, 78.4; SO_2, ~~96.5~~88.3; NOx, 1158.5; CO, 1610.1; and VOC, 58.0 tons per year. First year NOx emissions are effectively limited to 1595.4 tons per year. NOx emissions are estimated assuming that two startups as specified occur per year, each resulting in maximum allowable excess emissions. Mercury introduced into the pyroprocessing system is limited pursuant to specific condition 13 of this subsection of this permit; annual emissions of mercury are effectively limited by this condition to 97 pounds per year.]

No owner or operator of a Portland Cement kiln shall cause, permit, or allow the emission of particulate matter in excess of 0.50 pounds per ton to the kiln (dry basis, excluding fuel), or visible emissions the density of which is greater than 20 percent opacity. [Rule 62-296.701(2)(a), F.A.C]

[Note: The BACT emission limits of this permit (table above) are more stringent than the limits imposed by this rule.]

[Application Number 1210465-034-AC and Permit Nos. 1210465-011-AC, 1210465-008-AC, 1210465-004-AC, and 1210465-001-AC; and Rules 62-4.070(3) and 62-212.400(BACT), F.A.C.]

3. Section III, Subsection B, Specific Condition 18.

18. Continuous Emission Monitoring Systems: The owner or operator shall install, calibrate, maintain, and operate a continuous emission monitoring (CEM) system in the in-line kiln/raw mill stack to measure and record the emissions of NO_X, SO_2, and VOC from the in-line kiln/raw mill, in a manner sufficient to

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demonstrate compliance with the emission limits of this permit. The CEM system shall express the results in units of pounds per ton of clinker produced, and pounds per hour.

a. *Compliance Demonstration*: Compliance with the short-term emission limit for NO_X shall be based on a 24-hour rolling average that shall be recomputed after every valid hour as the arithmetic average of that hourly average and the preceding 23 valid hourly averages. Compliance with the emission limit for SO_2 shall be based on a rolling ~~3~~ 24-hour average that shall be recomputed after every valid hour as the arithmetic average of that hourly average and the preceding ~~two~~ 23 valid hourly averages. Compliance with the emission limits for VOC and long-term NOx shall be based on a 30 operating-day block average that shall be computed as the arithmetic average of all valid hourly averages occurring within each 30 operating-day block. For purposes of the VOC and long-term NOx limits, an operating day is any day that the kiln produces clinker and/or fires fuel.

b. *Valid Hourly Averages*: Each hourly average shall be computed as the arithmetic average of the data points generated by the CEM system. Data points must be generated at least once per minute. For an hourly average to be considered valid, at least two data points separated by a period of 15 minutes or more must be used to compute the hourly average.

   i. Hours during which there is no preheater feed and no fuel fired to the kiln systems are not valid.

   ii. II. Hours during which the plant is firing fuel but producing no clinker are valid, but these hours are excluded from the production-normalized emission rate computation (pounds per ton of dry preheater feed or pounds per ton of clinker). These hours are included in any pollutant mass emission rate computation (pounds per hour).

c. *Data Availability*: During each semiannual (six-month) period, CEM system valid hourly averages shall be obtained for at least 90 percent of the operating hours for which the plant is producing clinker. If the CEM system does not obtain valid hourly averages for 90 percent or more of the operating hours per semiannual period for which the plant is producing clinker, the permittee shall submit a semiannual excess emissions and continuous monitoring system performance report. This report must include corrective actions, and it shall be submitted within 30 days following the end of each semiannual reporting period.

d. *Compliance Assurance:* CEM system breakdowns, malfunctions, repairs, calibration checks, zero adjustments, and span adjustments all result in periods during which CEM system data are not obtained. During such periods in excess of 120 hours per calendar quarter, the permittee shall assure compliance with the emissions standards of this permit through stack tests, alternative monitoring systems, or other methods as approved by the Department.

e. *THC Monitor:* At the option of the permittee, a total hydrocarbon (THC) monitor can be installed in place of the required VOC monitor provided that the monitor results ("THC as propane") are considered to be VOC ("VOC as propane") for purposes of compliance. If methane is measured concurrently with THC, then, "THC as propane, minus methane" can be considered to be VOC ("VOC as propane") for purposes of compliance. The VOC (or THC) CEM system shall be installed, operated and maintained in accordance with Performance Specification 8A of Appendix B in 40 CFR 60. The system shall comply with all of the requirements for continuous monitoring systems found in the general provisions of Subpart A in 40 CFR 63. It is not a requirement to calculate hourly rolling averages in accordance with Section 4.9 of Performance Specification 8A. Compliance with the emission limit for VOC (or THC) shall be computed as the arithmetic average of all valid emissions data collected for a block of 30 operating days. For purposes of the VOC (or THC) limit, an operating day is any day that the kiln produces clinker and/or fires fuel. Emissions data are only used for the determination of a single 30 operating-day block average. Emissions shall be reported in units of the standards (lb/hour, lb/ton clinker, and ppmvd as propane corrected to 7% oxygen). These requirements shall be interpreted to be consistent with the monitoring requirements specified in 40 CFR 63.1350.

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f. *Monitor Type and Span*: The span values for the NOx, SO_2, and VOC (or THC) CEM systems shall be no less than 150 percent and no greater than 300 percent of the maximum permitted emissions of the inline kiln/raw mill. For purposes of setting CEM system span values, the mass emission rate (pounds per hour) for SO_2, NOx, and VOC (or THC) shall be converted to an approximate stack gas concentration (ppm) based on the minimum expected stack gas flow rate (cubic feet per minute) and the permitted mass emission rate limit (pounds per hour). All CEM systems shall be capable of automatically switching to a higher span to accurately measure spikes of stack gas concentrations. The span value for the oxygen CEM system shall be 25 percent oxygen.

g. *Calculation Algorithm*: Rolling and block averages shall be calculated through the integrated and automated data acquisition and handling system of the CEM system or through some other method as approved by the Department. The calculation algorithm shall be documented and available on-site for inspection and verification.

[Note: Continuous opacity monitor (COM) systems shall be installed, operated, and maintained at the kiln/raw mill baghouse stack and the outlet of the clinker cooler ESP pursuant to 40 CFR 63.1350. A continuous emission monitor for emissions of total hydrocarbon is required pursuant to 40 CFR 63.1349 and 63.1350. A continuous monitor for the temperature at the inlet to the in-line kiln/raw mill baghouse is required pursuant to 40 CFR 63.1349 and 63.1350.]

[Application Number 1210465-034-AC and Permit Nos. 1210465-011-AC, 1210465-008-AC, 1210465-004-AC, and 1210465-001-AC; and Rule 62-4.070(3), and 62-212.400(BACT) F.A.C.]

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