TECHNICAL EVALUATION
&
PRELIMINARY DETERMINATION

APPLICANT

Florida Rock Industries, Inc.
4000 NW County Road 235
Newberry, FL 32669

Thompson S. Baker Cement Plant - Newberry
ARMS Facility ID No. 0010087

PROJECT

Project No. 0010087-042-AC
Application for Minor Source Air Construction Permit
Proposed Limestone Storage Silo & Kiln ESP dust Transport System Tie-In Project

COUNTY

Alachua, Florida

PERMITTING AUTHORITY

Florida Department of Environmental Protection
Northeast District Office
Air Resources Section
7625 Baymeadows Way, Suite B200
Jacksonville, Florida 32256-7590

March 19, 2012

1. GENERAL PROJECT INFORMATION

Air Pollution Regulations

Projects with the potential to emit air pollution are subject to the applicable environmental laws specified in Section 403 of the Florida Statutes (F.S.). The statutes authorize the Department of Environmental Protection (Department) to establish regulations regarding air quality as part of the Florida Administrative Code (F.A.C.), which includes the following chapters: 62-4 (Permits); 62-204 (Air Pollution Control – General Provisions); 62-210 (Stationary Sources – General Requirements); 62-212 (Stationary Sources – Preconstruction Review); 62-213 (Operation Permits for Major Sources of Air Pollution); 62-296 (Stationary Sources - Emission Standards); and 62-297 (Stationary Sources – Emissions Monitoring). Specifically, air construction permits are required pursuant to Rules 62-4, 62-210 and 62-212, F.A.C.

In addition, the U. S. Environmental Protection Agency (EPA) establishes air quality regulations in Title 40 of the Code of Federal Regulations (CFR). Part 60 specifies New Source Performance Standards (NSPS) for numerous industrial activities. Part 61 specifies National Emission Standards for Hazardous Air Pollutants (NESHAP) based on specific pollutants. Part 63 specifies NESHAP based on the Maximum Achievable Control Technology (MACT) for numerous industrial categories. The Department adopts these federal regulations on a quarterly basis in Rule 62-204.800, F.A.C.

Glossary of Common Terms

Because of the technical nature of the project, the permit contains numerous acronyms and abbreviations, which are defined in Appendix A of this permit.

Facility Process Description and Location

Florida Rock Industries, Inc. operates the Thompson S. Baker Cement Plant which is an existing cement manufacturing facility. The operations are categorized under Standard Industrial Classification Code No. 3241 for hydraulic cement.

The facility consists of limestone mining and processing, raw material handling and storage, a raw mill system, kiln system, clinker handling, finish grinding operations, cement handling, loading and bagging operations.

Facility Regulatory Categories

- The facility is a major source of hazardous air pollutants (HAP).
- The facility does not operate units subject to the acid rain provisions of the Clean Air Act.
- The facility is a Title V major source of air pollution in accordance with Chapter 213, F.A.C.
- The facility is a major stationary source in accordance with Rule 62-212.400, F.A.C. for the Prevention of Significant Deterioration (PSD) of Air Quality.

Project Description

The Department received an air construction permit application from the applicant on February 1, 2012 (additional clarifying information received March 7, 2012 and March 19, 2012) for the construction of a

new 2,000 ton capacity Limestone storage silo. The silo will be located between the existing Nos. 1 and 2 Raw mills. When one of the existing Raw mills is not being operated to process all of the necessary raw materials for cement production, i.e. the kiln is not in operation at the time, it will be used to only grind limestone. This high quality pure limestone will be pneumatically transported to the proposed silo for storage. The limestone will either be sold to third party purchasers and/or used in the cement manufacturing process. Particulate matter (PM) emissions will be controlled by two cartridge dust collectors; EP01 will control PM generated during the transport of the ground limestone to the silo and during its storage, and EP02 will control the PM discharge from the silo during the unloading of the ground limestone into trucks.

Florida Rock Industries also proposes to tie into the existing Kiln ESP dust transport systems so that Kiln dust captured by the Kiln ESPs can be transported to either of the existing Finish Mills in addition to the current system that allows for transportation to either of the existing Kiln Systems.

Ductwork will initially be installed at the discharge line of each Kiln's ESP that will allow kiln dust to be sent to the Finish Mill #2 fringe surge bin. From the fringe surge bin, the Kiln ESP dust will be added to ground cement that exits Finish Mill #2 as it enters the existing Finish Mill #2 air separator. At a future date, Florida Rock will also construct ductwork so that the Kiln ESP dust from the fringe surge bin can also be added to ground cement that exits Finish Mill #1 as it enters the existing Finish Mill #1 air separator (EU 005, EP-03).

Kiln dust collected by Kiln #1 ESP will continue to be sent to either the Raw-Mill #1 Blend/Homogenizing Silo for storage or to the top of the Pre-heater Tower #1 where it joins incoming kiln-feed material. Similarly, kiln dust collected by the Kiln #2 ESP will continue to be sent to either the Raw-Mill #2 Blend/Homogenizing Silo or the Pre-heater Tower #2.

Particulate Matter emissions at these routing points in the Finish Mills and Kiln Systems will continue to be controlled by the existing baghouses.

Florida Rock Industries states in the submitted application that the Kiln ESP dust transport tie-in will only re-direct the dust and not generate new quantities of dust. The tie-in will meet the 40 CFR 63 Subpart LLL definition of a Totally Enclosed Dust Transport System.

Pursuant to Rule 62-212.400, F.A.C., Florida Rock Industries, Inc. provided information to show that the project will not exceed the significant emissions rates that require preconstruction review for the Prevention of Significant Deterioration (PSD) of Air Quality.

Proposed Work

The permittee is authorized to conduct this project as follows:

- New, two-way diverter valve in existing pipeline for pneumatic transfer to Finish Mill #2 Fringe Surge Bin, Pneumatic transfer pump, compressor, pipeline, etc., as described above

Processing Schedule

02/01/2012	Department received the application for a minor source air pollution construction permit.
03/07/2012	Department received additional information.
03/19/2012	Department received additional information; application complete.

2. PSD APPLICABILITY

General PSD Applicability

The Department regulates major stationary sources of air pollution in accordance with Florida's PSD preconstruction review program as defined in Rule 62-212.400, F.A.C. A PSD applicability review is required in areas currently in attainment with the state and federal AAQS or areas otherwise designated as "unclassifiable". A facility is considered a major stationary source with respect to PSD if it emits or has the potential to emit: 5 tons per year or more of lead; 250 tons per year or more of any regulated air pollutant; or 100 tons per year or more of any regulated air pollutant and the facility belongs to one of the 28 PSD-major facility categories (fossil fuel-fired steam electric plants of more than 250 million British thermal units per hour heat input, coal cleaning plants (with thermal dryers), Kraft pulp mills, portland cement plants, primary zinc smelters, iron and steel mill plants, primary aluminum ore reduction plants, primary copper smelters, municipal incinerators capable of charging more than 250 tons of refuse per day, hydrofluoric, sulfuric, and nitric acid plants, petroleum refineries, lime plants, phosphate rock processing plants, coke oven batteries, sulfur recovery plants, carbon black plants (furnace process), primary lead smelters, fuel conversion plants, sintering plants, secondary metal production plants, chemical process plants, fossil fuel boilers (or combinations thereof) totaling more than 250 million British thermal units per hour heat input, petroleum storage and transfer units with a total storage capacity exceeding 300,000 barrels, taconite ore processing plants, glass fiber processing plants, and charcoal production plants.). Projects at existing or new major stationary sources are subject to PSD preconstruction review. In addition, proposed projects at existing minor sources are subject to PSD preconstruction review if potential emissions *from the proposed project* will exceed the PSD major stationary source thresholds.

Once a project becomes subject to PSD preconstruction review, each PSD pollutant is reviewed for PSD applicability based on emissions thresholds known as the "significant emission rates" defined in Rule 62-210.200, F.A.C. for the following pollutants: carbon monoxide (CO); nitrogen oxides (NO_X); sulfur dioxide (SO_2); particulate matter (PM); particulate matter with a mean particle diameter of 10 microns or less (PM_{10}); volatile organic compounds (VOC); lead (Pb); Fluorides (F); sulfuric acid mist (SAM); hydrogen sulfide (H_2S); total reduced sulfur (TRS), including H_2S; reduced sulfur compounds, including H_2S; municipal waste combustor organics measured as total tetra- through octa-chlorinated dibenzo-p-dioxins and dibenzofurans; municipal waste combustor metals measured as particulate matter; municipal waste combustor acid gases measured as SO_2 and hydrogen chloride (HCl); municipal solid waste landfills emissions measured as nonmethane organic compounds (NMOC); and mercury (Hg). Pollutant emissions from the project exceeding these rates are considered "significant" and the applicant must employ the Best Available Control Technology (BACT) to minimize emissions of each such pollutant and evaluate the air quality impacts. Although a facility or project may be *major* with respect to PSD for only one regulated pollutant, it may be required to install BACT controls for several "significant" regulated pollutants.

PSD Applicability for Project

Because the proposed limestone silo is a new unit, pursuant to Rule 62-212.400(2)(a), F.A.C., the review procedure used to determine whether a significant emission increase would occur as a result of this

project was the Baseline Actual-to-Potential Applicability Test for Construction of New Emissions Units. Since the Kiln ESP dust transport system is tying into an existing system, the facility could have used the Baseline Actual-to-Projected Actual Applicability Test for Modifications at Existing Emissions Units, but instead used the more conservative method of the Baseline Actual-to-Potential Applicability Test.

The following table summarizes the applicant's potential calculated changes (increases) in potential emissions attributable to the proposed installation of the new limestone silo and ESP kiln dust transport system tie-in based on the application and the applicant's additional information.

Table A. Applicant's Projected Emission Increases (Tons per Year) and PSD Applicability

Pollutant	Emission Unit	Baseline Potential Emissions	Potential Emissions	Projected Increases	PSD Significant Emissions Rate	Subject to PSD?
PM	Limestone Silo[1]	0	1.54	1.54	25	No
	Kiln ESP dust Transport System Tie-In[1]	0	0			
PM_{10}	Limestone Silo	0	1.54	1.54	15	No
	Kiln ESP dust Transport System Tie-In	0	0			
$PM_{2.5}$	Limestone Silo	0	1.54	1.54	10	No
	Kiln ESP dust Transport System Tie-In	0	0			

[1]Emissions Units are not combustion sources, therefore only pollutant is particulate matter emissions

3. FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION (FDEP) REVIEW

Brief Discussion of Emissions and PSD Applicability

The Department concurs with the above conclusion and summary of the project.

Based on the potential emissions summary, supporting information provided by the applicant, conclusions presented by the applicant, and the emissions summary presented above, the Department concludes that the project does not trigger PSD preconstruction review.

Therefore, the project requires a minor air construction permit to authorize the construction of the new limestone silo and ESP Kiln Dust Transport System Tie-In. In accordance with Rule 62-212.300(1)(e), F.A.C since projected actual emissions calculations were not used in the PSD applicability determination, the permittee is not required to submit annual emission estimates of actual emissions after implementation of the project.

NSPS and NESHAP Applicability – Limestone Silo

40 CFR 60 Subpart OOO– Standards of Performance for Nonmetallic Mineral Processing Plants

In accordance with 40 CFR 60.670(b), an affected facility that is subject to the provision of 40 CFR 60 Subparts F or I or that follows in the plant process any facility subject to the provisions of 40 CFR 60 Subparts F or I is not subject to the provisions of this subpart. The new limestone silo will store limestone ground in the Raw Mills, which are facilities subject to the provisions of 40 CFR 60 Subpart F. As such, the new limestone silo is not subject to the provisions of 40 CFR 60 Subpart OOO – Nonmetallic Mineral Processing Plants.

40 CFR 60 Subpart F – Portland Cement Plants

This federal regulation applies to all Portland cement plants constructed, reconstructed or modified after August 17, 1971. This proposed silo is considered to be raw material storage and therefore is an affected facility pursuant to 40 CFR 60.60(a).

Pursuant to the provisions of 40 CFR 60.62(c), the limestone silo may not discharge any gases that exhibit 10 percent opacity or greater.

40 CFR 60.62(d) states that if an affected source subject to 40 CFR 60 Subpart F is subject to a different emission limit or requirement for the same pollutant under another regulation in title 40 of this chapter, the source must comply with the most stringent emission limit or requirement and is not subject to the less stringent requirement.

The limestone silo will also be an affected source under 40 CFR 63 Subpart LLL – National Emission Standards for Hazardous Air Pollutants From the Portland Cement Manufacturing Industry. This silo meets the definition of a bin under §63.1341, and therefore is an affected source per §63.1340(b)(6) .

Pursuant to the provisions of 40 CFR 63.1345, the limestone silo may not discharge any gases that exhibit opacity in excess of 10 percent.

The 40 CFR 60 Subpart F, 60.62(c) standard is more stringent therefore, pursuant to 40 CFR 60.62(d) and also 40 CFR 63. 1356, the 40 CFR 63 Subpart LLL 63.1345 standard does not apply. It is noted that the other applicable Subpart F and Subpart LLL requirements do apply (testing, monitoring, recordkeeping, reporting, etc.).

In accordance with 40 CFR 60.64(b)(3), an initial Method 9 test is required to demonstrate compliance with the opacity standard. In accordance with 40 CFR 60.11(b), this initial visible emissions test will be a three hour test (thirty 6-minute averages).

State Rule 62-2197.310(7)(a), F.A.C. specifies the frequency of subsequent opacity testing since the NSPS subpart does not specify a subsequent demonstrations of compliance.

State Rule 62-297.310(7)(a)1., F.A.C., requires that a compliance test be conducted that demonstrates compliance with the applicable emissions limiting standard prior to obtaining an operation permit. Therefore, a compliance test shall be conducted at least prior to obtaining an operation permit, i.e. at least on a 5-year basis prior to operation permit renewal.

State Rule 62-297.310 (7)(a)4.a., F.A.C., states that if there is an applicable standard, a formal compliance test shall be conducted for visible emissions during each federal fiscal year (October 1 – September 30), unless otherwise specified by rule, order, or permit. This rule does allow for exceptions to the annual visible emissions compliance test if they are established by rule, order, or permit.

The Department has determined that a subsequent testing frequency in accordance with State Rule 62-297.310(7)(a)1., F.A.C. is reasonable since the this would be the frequency had the limestone silo been subject to the 40 CFR 63 Subpart LLL 63.1345 opacity standard.

In accordance with Rule 62-297.310(4)(a)2., F.A.C., the required minimum period of observation for each subsequent compliance test shall be thirty (30) minutes.

In accordance with 40 CFR 60.64(b)(4), the continuous monitoring procedures in 40 CFR 63.1350(f), must be followed for the silo, which is monthly Method 22 visible emissions testing.

In accordance with 40 CFR 63 Subpart LLL 63.1347, a written operation and maintenance (O&M) plan must be prepared and followed for the limestone silo.

NSPS and NESHAP Applicability – Kiln ESP Dust Transport System Tie-In

40 CFR 60 Subpart F – Portland Cement Plants

This federal regulation applies to all Portland cement plants constructed, reconstructed or modified after August 17, 1971. Affected sources include conveyor system transfer points. This proposed Kiln ESP dust Transport system tie-in is considered to be an affected facility pursuant to 40 CFR 60.60(a).

Pursuant to the provisions of 40 CFR 60.62(c), conveying system transfer points in the Kiln ESP dust Transport System Tie-in may not discharge any gases that exhibit 10 percent opacity or greater.

40 CFR 60.62(d) states that if an affected source subject to 40 CFR 60 Subpart F is subject to a different emission limit or requirement for the same pollutant under another regulation in title 40 of this chapter, the source must comply with the most stringent emission limit or requirement and is not subject to the less stringent requirement.

The Kiln ESP dust Transport System Tie-In will also be an affected source under 40 CFR 63 Subpart LLL – National Emission Standards for Hazardous Air Pollutants From the Portland Cement Manufacturing Industry. This Kiln ESP Dust Transport System Tie-In meets the definition of a Conveying System under §63.1341, and therefore each conveying system transfer point is an affected source pursuant to §63.1340(b)(7) .

Pursuant to the provisions of 40 CFR 63.1345, each conveying system transfer point in the Kiln ESP dust Transport System Tie-in may not discharge any gases that exhibit opacity in excess of 10 percent.

The 40 CFR 60 Subpart F, 60.62(c) standard is more stringent therefore, pursuant to 40 CFR 60.62(d) and also 40 CFR 63. 1356, the 40 CFR 63 Subpart LLL 63.1345 standard does not apply. It is noted that the other applicable Subpart F and Subpart LLL requirements do apply (testing, monitoring, recordkeeping, reporting, etc.).

Florida Rock Industries states that the Kiln ESP dust Transport System Tie-In will be a totally enclosed conveying system. In accordance with 40 CFR 63 Subpart LLL 63.1341, the conveying system transfer points are enclosed on all sides, top, and bottom.

Since the Kiln ESP dust Transport System Tie-in is an affected source under Subparts F and LLL, the applicable requirements of both subparts will be included in the permit.

In accordance with 40 CFR 60.64(b)(3), an initial Method 9 test is required to demonstrate compliance with the opacity standard at each conveying system transfer point in the Kiln ESP dust Transport System Tie-in. In accordance with 40 CFR 60.11(b), this initial visible emissions test will be a three hour test (thirty 6-minute averages).

State Rule 62-2197.310(7)(a), F.A.C. specifies the frequency of subsequent opacity testing since the NSPS subpart does not specify a subsequent demonstration of compliance.

State Rule 62-297.310(7)(a)1., F.A.C., requires that a compliance test be conducted that demonstrates compliance with the applicable emissions limiting standard prior to obtaining an operation permit. Therefore, a compliance test shall be conducted at least prior to obtaining an operation permit, i.e. at least on a 5-year basis prior to operation permit renewal.

State Rule 62-297.310 (7)(a)4.a., F.A.C., states that if there is an applicable standard, a formal compliance test shall be conducted for visible emissions during each federal fiscal year (October 1 – September 30), unless otherwise specified by rule, order, or permit. This rule does allow for exceptions to the annual visible emissions compliance test if they are established by rule, order, or permit.

The Department has determined that a subsequent testing frequency in accordance with State Rule 62-297.310(7)(a)1., F.A.C. is reasonable since the this would be the frequency had each conveying system transfer point in the Kiln ESP dust Transport System Tie-in been subject to the 40 CFR 63 Subpart LLL 63.1345 opacity standard.

In accordance with Rule 62-297.310(4)(a)2., F.A.C., the required minimum period of observation for each subsequent compliance test shall be thirty (30) minutes.

In accordance with 40 CFR 60.64(b)(4), the continuous monitoring procedures in 40 CFR 63.1350(f), must be followed for the Kiln ESP dust Transport System Tie-In, which would be monthly Method 22 visible emissions testing. However, 40 CFR 63.1350(f)(v) states that the Method 22 visible emissions monitoring under 40 CFR 63.1350(f) is not applicable to any totally enclosed conveying system transfer point, regardless of the location of the transfer point. The enclosures for these transfer points must be

operated and maintained as total enclosures on a continuing basis in accordance with the facility operations and maintenance plan.

In accordance with 40 CFR 63 Subpart LLL 63.1347, a written operation and maintenance (O&M) plan must be prepared and followed for the Kiln ESP dust Transport System Tie-In.

On March 9, 2012, the consultant shared with the Department email correspondence between the consultant and Mr. Lee Page, EPA Region 4. The consultant contacted Mr. Page inquiring whether an initial Method 9 test would be required pursuant to 40 CFR 63 Subpart LLL for conveying system transfer points that meet the totally enclosed conveying system definition in 63.1341, and if required, where on the enclosure should the testing be performed. Mr. Page responded that in accordance with 40 CFR 63 Subpart LLL, such conveying system transfer points were subject to a 10% opacity standard pursuant to 63.1345, an initial Method 9 test would be required pursuant to 63.1349(b)(2), and the visible emission testing would be required at the transfer point to and from the conveying system, where malfunctions are likely to occur.

Again, as stated above, because the 40 CFR 60 Subpart F, 60.62(c) standard is more stringent than the 40 CFR 63 Subpart LLL, 63.1345 standard, pursuant to 40 CFR 60.62(d) and also 40 CFR 63. 1356, the 40 CFR 63 Subpart LLL 63.1345 standard does not apply. Initial Method 9 testing is required pursuant to 40 CFR 60.64(b)(3).

Applicability of Previously Issued Permits

Existing Permits and Regulations: The conditions of this permit supplements all other previously issued air construction and operation permits for these emission units. These conditions are in addition to all other applicable permit conditions and regulatory requirements. The Permittee shall continue to comply with the conditions of those permits, which include restrictions and standards regarding capacities, production, operation, fuels, emissions, monitoring, recordkeeping, reporting and the like.

4. PRELIMINARY DETERMINATION

The Department makes a preliminary determination that the proposed project will comply with all applicable state and federal air pollution regulations as conditioned by the draft permit. This determination is based on a technical review of the complete application, reasonable assurances provided by the applicant, and the conditions specified in the draft permit. No air quality modeling analysis is required because the project does not result in a significant increase in emissions. Rita Felton-Smith is the project engineer responsible for reviewing the application and drafting the permit. Additional details of this analysis may be obtained by contacting the project engineer at the Florida Department of Environmental Protection, Northeast District Office, 7525 Baymeadows Way, Suite 200B, Jacksonville, FL 32256-7590, Phone: 904/256-1700.