TECHNICAL EVALUATION
&
PRELIMINARY DETERMINATION

APPLICANT

Mosaic Fertilizer, LLC
13830 Circa Crossing Drive
Lithia, Florida 33547

New Wales Facility
Facility ID No. 1050059

PROJECT

Project No. 1050059-066-AC
Draft Air Construction Permit
Multifos Plant Kiln C
NOx CEMS, Dump Chute and Air Intake

COUNTY

Polk County, Florida

PERMITTING AUTHORITY

Florida Department of Environmental Protection
Division of Air Resource Management
Bureau of Air Regulation
New Source Review Section
2600 Blair Stone Road, MS#5505
Tallahassee, Florida 32399-2400

June 23, 2011

1. GENERAL PROJECT INFORMATION

Air Pollution Regulations

Projects at stationary sources 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 applicable 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 categories. 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 Description and Location

Mosaic Fertilizer, LLC operates an existing Multifos animal feed ingredient plant, which is categorized under Standard Industrial Classification (SIC) No. 2874. The Multifos plant is part of the existing New Wales Facility, which is located in Polk County at 3095 Highway 640 in Mulberry, Florida. The UTM Coordinates are Zone 17; 396.6 kilometers (km) East; 3078.9 km North. This site is in an area that is in attainment (or designated as unclassifiable) for all air pollutants subject to state and federal Ambient Air Quality Standards (AAQS).

Facility Regulatory Categories

- 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 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 existing Multifos Plant Kiln C was constructed in accordance with Permit No. 1050059-044-AC, which included emissions standards that avoided PSD preconstruction review (synthetic minor project for oxides of nitrogen (NOx). The applicant proposes the following work for the existing Multifos Plant Kiln C:

- The applicant requests recognition of the use of the existing kiln dump chute, which was installed as part of the original project. The dump chute is located at the end of the kiln and is used for separating the off-specification product. According to plant records, the dump chute is operated approximately 2% of the year and production is often suspended or reduced when the chute is used.

- The applicant requests recognition of intake of ambient air into the scrubbing system that is used to maintain a proper operating flow rate to the control device during startup of the Multifos Kiln C. This operating practice is used to maintain the scrubbing system within the parametric indictors in the compliance assurance monitoring (CAM) plan.

- In response to NOx emissions testing, the applicant requests that the Multifos Kiln C be permitted to operate at a flow ratio into the kiln of 8 pounds of steam per one standard cubic foot of natural gas fuel (8:1). The 8:1 steam to fuel gas ratio will be maintained within a one-hour average at a 10% operational variability or a minimum ratio of 7.2:1.

Processing Schedule

- 10/27/09 Received the application for an air construction permit for the existing Multifos Plant Kiln C; request included a waiver of the 30-day review clock to 02/26/10, which was later extended to 03/31/10.
- 03/30/10 Additional information requested.
- 06/28/10 Received additional information.
- 07/23/10 Requested additional information.
- 01/18/11 Received all additional information to complete the application.
- 03/11/11 Draft Permit issued
- 03/23/11 Received Motion for Extension of Time to File a Petition
- 05/24/11 Received Motion for an Additional Extension of Time to File a Petition

2. PSD APPLICABILITY

This air construction permit is for the Multifos Plant Kiln C, which was constructed as a synthetic minor source. The project will not increase emissions; therefore, the project is not subject to PSD preconstruction review.

3. DEPARTMENT REVIEW

Dump Chute

The Multifos Plant Kiln C includes an existing kiln dump chute, which was installed as part of the original project. The dump chute is located at the end of the kiln and is used for separating the off-specification product. According to plant records, the dump chute is operated approximately 2% of the year and production is often suspended or reduced when the chute is used. Based on a video provided by the plant, no significant gas or fugitive dust emissions appear to be emitted from the dump chute as evident by an operator standing within close proximity to the open chute. As such, emissions from the dump chute and expelled product are considered to be minimal and unquantifiable. The off-specification material appears to be significantly oxidized or ashen. The dump chute operation will be recognized as part of existing Emissions Unit No. 072, which is for fugitive and unregulated emissions. The draft permit recognizes operation of the kiln dump chute.

Air Intake During Startup

During startup of the Multifos Kiln C, the plant introduces ambient air into the scrubbing system to maintain a proper operating flow rate to the control device. The air intake occurs downstream of the kiln and combustion process. This operating practice is used to maintain the scrubbing system within the parametric indictors in the Compliance Assurance Monitoring (CAM) plan. The draft permit acknowledges this practice.

Steam Flow Rate

To maintain the synthetic minor source limits and remain below the PSD significance threshold emissions of NOx shall be less than 39.9 tons per year and 9.11 pounds per hour (PPH) as specified in permit No. 1050059-044AC. Mosaic conducted NOx emissions testing on May 9, 2008 that was witnessed by FDEP and reported on May 29, 2008. The results of the emissions testing demonstrated that at a flow ratio into the kiln of 8 pounds of steam per one standard cubic foot of natural gas fuel (8:1), the NOx emissions were within the limits. As such, a practice control measure for NOx is deemed to be the 8:1 flow ratio providing that at a minimum the ration remains within 10% operational variability. Should Mosaic choose to perform additional testing, a revised steam to gas ratio that is in compliance with the NOx standard may be established.

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. Marilyn Koletzke 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 Department's Bureau of Air Regulation at Mail Station #5505, 2600 Blair Stone Road, Tallahassee, Florida 32399-2400.