Florida Department of Environmental Protection

Southwest District Office
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Rick Scott
Governor

Jennifer Carroll
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Herschel T. Vinyard Jr.
Secretary

Best Available Control Technology (BACT) Determination
Mosaic Fertilizer, LLC
South Pierce Plant
Polk County
Construction Permit No. 1050055-022-AC

Mosaic Fertilizer, LLC has submitted an application dated November 29, 2010 for a construction permit to install an auxiliary boiler (E.U. No. 053) at their phosphate fertilizer production facility. The auxiliary boiler is fired with natural gas or with No. 1 or No. 2 fuel oil having a maximum sulfur content of 0.05 percent, by weight, and has a maximum heat input rate of 100 million BTU per hour (MMBTU/hr.).

This BACT determination is required for the source as set forth in Rule 62-296.406, Florida Administrative Code – Emission Standards for Fossil Fuel Fired Steam Generators with Less Than 250 million BTU/hr. Heat Input, New and Existing Sources.

BACT Determination Requested by Applicant:

Particulate matter and sulfur dioxide emissions are to be controlled by the firing of natural gas or No. 2 fuel oil with a maximum sulfur content not to exceed 0.05 percent, by weight.

Date of Receipt of BACT Application: November 29, 2010

BACT Determination by DEP:

The amount of particulate matter and sulfur dioxide emissions from the boiler shall be limited by the firing of natural gas or with No. 1 or No. 2 fuel oil with a maximum sulfur content not to exceed 0.05 percent, by weight.

BACT Determination Rationale:

Sulfur in fuel is a primary air pollution concern, since most of the fuel's sulfur becomes sulfur dioxide. Also, particulate matter emissions from fuel burning are related to the sulfur content. The Department has performed air dispersion modeling analyses on small natural gas/low sulfur oil fired boilers typical of those recently permitted in Florida. These analyses show that all standards and increments will be met with the use of natural gas or with No. 1 or No. 2 fuel oil containing a maximum sulfur content of 0.05 percent, by weight. Distillate fuel oils containing 0.05 percent sulfur, by weight, or less are available and cost only a few cents per gallon more than fuel oils with 0.5 percent sulfur, by weight.

Details of the Air Dispersion Analysis May be Obtained by Contacting:

A. A. Linero, P.E. Supervisor, New Source Review Section
Department of Environmental Protection
Bureau of Air Regulation
Twin Towers Office Building
2600 Blair Stone Road, MS #5505
Tallahassee, Florida 32399-2400

Approved by:

Cindy Zhang-Torres

Cindy Zhang-Torres, P.E.
Air Permitting Manager
Southwest District

July 14, 2011