Title V Air Operation Permit Revision
Permit No. 1050046-038-AV

APPLICANT

The applicant for this project is Mosaic Fertilizer, LLC. The applicant's responsible official and mailing address are: William Land, Environmental Manager, Mosaic Fertilizer, LLC, Bartow Facility, 13830 Circa Crossing Drive, Lithia, FL 33547.

FACILITY DESCRIPTION

The applicant operates the Mosaic Bartow Facility, which is located at 3200 Highway 60 West and 4390 CR 640 West, Bartow, Polk County.

This existing facility consists of one phosphoric acid plant (two trains), one monoammonium phosphate/ diammonium phosphate (MAP/DAP) plant, one DAP fertilizer plant, three sulfuric acid plants, two fertilizer shipping plants, two auxiliary boilers, and a molten sulfur storage and handling system.

Phosphate rock is the primary feed for the phosphoric acid plant. This emission unit is regulated under National Emission Standards for Hazardous Air Pollutants (NESHAP) - 40 CFR 63, Subpart A – Combined General Provisions; 40 CFR 63, Subpart AA - NESHAP From Phosphoric Acid Manufacturing Plants, adopted and incorporated by reference in Rule 62-204.800, F.A.C.; Administrative Order No. 03-C-AP for alternative MACT monitoring plan; Rule 62-212.300, F.A.C., General Preconstruction Review Requirements; Rule 62-212.400, F.A.C., Prevention of Significant Deterioration (PSD); and Rule 62-296.403, F.A.C., Phosphate Processing. Fluoride emissions from this source are controlled by three separate scrubbers; one venturi scrubber and two cross flow packed scrubbers.

Phosphoric acid is the feed for the Fertilizer (DAP/MAP) Plant. It consists of a reactor, granulator, dryer, cooler, mills, screens and ancillary equipment. The dryer is fired with natural gas, or fuel oil. The facility maintains records of the fuel oil supplier's sulfur content analysis. This emission unit is regulated under New Source Performance Standard (NSPS) - 40 CFR 60, Subpart V, Standards of Performance of Phosphate Fertilizer Industry: Diammonium Phosphate Plants; and NESHAP – 40 CFR 63, Subpart A – Combined General Provisions; 40 CFR 63, Subpart BB – NESHAP From Phosphate Fertilizers Production Plants, adopted and incorporated by reference in Rule 62-204.800, F.A.C.; Rule 62-212.300, F.A.C., General Preconstruction Review Requirements; Rule 62-212.400, F.A.C., Prevention of Significant Deterioration (PSD); Rule 62-296.320, F.A.C., General Pollutant Emission Limiting Standards; Rule 62-296.403, F.A.C., Phosphate Processing. Emissions from this source are controlled by the scrubbers.

Molten sulfur is the feed for the sulfuric acid plants. These emission units are regulated under NSPS - 40 CFR 60, Subpart H, Standards of Performance for Sulfuric Acid, adopted and incorporated by reference in Rule 62-204.800(7)(b)10., F.A.C.; Rule 62-212.300, F.A.C., General Preconstruction Review Requirements; Rule 62-212.400, F.A.C., Prevention of Significant Deterioration (PSD); Rule 62-296.320, F.A.C., General Pollutant Emission Limiting Standards; and Rule 296.402, F.A.C., Sulfuric Acid Plants. Sulfur dioxide from each sulfuric acid plant is controlled by a dual absorption tower, and acid mist is controlled by high volume (HV) and high efficiency (HE) mist eliminator. These units utilize continuous emission monitors (CEMs) for sulfur dioxide (SO_2) emissions.

The facility has two Fertilizer Shipping Plants that include material conveyors, transfer points, truck and rail car shipping bins and loadout spouts. All material transfer points are located inside the material handling building and are covered to minimize fugitive emissions. The truck and rail car loading operations are beneath the building and enclosed on two sides. Loading is done via chute feeders. These emissions units are regulated under Rule 62-296.320, F.A.C., General Pollutant Emission Limiting Standards. Emission is controlled by dust suppressant.

The facility has one Package Water tube Boiler that is used during cold start-up of the sulfuric acid plant(s) and for make-up steam during times the sulfuric acid plant(s) are operating below capacity and is routinely fired for maintenance purposes. This boiler is fired with natural gas as the primary fuel with new No. 5 fuel oil or better grade of fuel oil as the back-up fuel. The facility maintains records of the fuel oil supplier's sulfur content analysis. This emissions unit is regulated under Rule 62-296.406, F.A.C., Fossil Fuel Steam Generators with less than 250 Million Btu per Hour Heat Input, New and Existing Emissions Units.

The molten sulfur storage and handling system consists of the following: a rail and truck unloading system, one 3,000 ton molten sulfur storage tank, one 6,000 ton molten sulfur storage tank, one 200 ton molten sulfur truck/railcar unloading pit (Pit A), one 300 ton railcar unloading pit (Pit B), and all of the associated transfer pumps and piping. These emissions units are regulated under Rule 62-212.300, F.A.C., General Preconstruction Review Requirements; Rule 62-212.400, F.A.C., Prevention of Significant Deterioration (PSD); Rule 62-296.320, F.A.C., General Pollutant Emission Limiting Standards; and Rule 62-296.411, F.A.C., Sulfur Storage and Handling Facilities. The pits A and B are evacuated by two ejectors (Venturi Exhausters) to individual stacks.

The facility has new emergency stationary compression ignition (CI) reciprocating internal combustion engines (RICE) that are subject to NSPS 40 CFR 60, Subpart A – General Provisions, ~~and~~ Subpart IIII, Set K – Owner/Operator pre-2007 non-fire pump emergency, less than 10L per cylinder and Subpart IIII, Set E – Owner/Operator 2007 and later model, non-emergency, less than 30L per cylinder. The facility also has existing emergency and existing non-emergency CI RICE that are subject to 40 CFR 63, Subpart A – General Provisions and Subpart ZZZZ - NESHAP for Stationary RICE. NSPS applicability 40 CFR 60, Subpart IIII, Sets K and E, and NESHAP applicability 40 CFR 63, Subpart ZZZZ for Stationary RICE tables are made a part of this ~~project~~ permit.

Also included in this permit are miscellaneous unregulated emissions units and/or activities and insignificant emissions units and/or activities. Mosaic Green Bay Site Phosphogypsum Stacks I & II are included in the Mosaic Bartow Facility as unregulated emission units.

PROJECT DESCRIPTION

The purpose of this project is to revise Title V air operation permit No. 1050046-035-AV, for the above referenced facility, to incorporate the terms of Air Construction Permit Nos.1050046-031-AC and 1050046-034-AC and the notice of permit determination dated 02/16/2011 in the Title V permit. Furthermore, Mosaic has requested the deletion of two 180- hp diesel engines due to the abandonment of #1 Deep well, deletion of #1 Deep well diesel tank and back up engine and addition of one 580-hp diesel engine for a new Deep well designated as 1-R.

The Air Construction Permit No. 1050046-031-AC was to upgrade the granulator, screens, product elevator and cooler of the No. 3 Fertilizer (DAP/MAP) plant. The Air Construction Permit No. 1050046-034-AC was to install a coating oil ribbon blender downstream of the polishing screens and before the Cominco Plate Cooler of the same plant. The notice of permit determination was regarding the installation of two storage silos and two day bins to store zinc and boron micronutrient compounds.

PROCESSING SCHEDULE AND RELATED DOCUMENTS

Initial Title V Air Operation Permit issued 10/06/1998
Title V Air Operation Permit Revision issued 04/07/2004
Title V Air Operation Permit Administrative Correction issued 11/06/2004
Title V Air Operation Permit Renewal issued 09/30/2005
Title V Air Operation Permit Renewal issued 07/05/2011
Title V Air Operation Permit Revision issued 01/07/2012
Title V Air Operation Permit Revision issued 05/30/2012

Title V Air Operation Permit Revision Application received and complete 01/09/2013
Notice of Intent to Issue Air Permit issued XX-XX-XXXX
Public Notice Published XX-XX-XXXX

PRIMARY REGULATORY REQUIREMENTS

Title III: The facility is identified as a major source of hazardous air pollutants (HAP).

Title V: The facility is a Title V major source of air pollution in accordance with Chapter 62-213, Florida Administrative Code (F.A.C.).

PSD: The facility is a Prevention of Significant Deterioration (PSD)-major source of air pollution in accordance with Rule 62-212.400, F.A.C.

NSPS: The facility does operate units subject to the New Source Performance Standards (NSPS) of 40 Code of Federal Regulations (CFR) 60.

NESHAP: The facility does operate units subject to the National Emissions Standards for Hazardous Air Pollutants (NESHAP) of 40 CFR 63.

CAIR: The facility is not subject to the Clean Air Interstate Rule (CAIR) set forth in Rule 62-296.470, F.A.C.

SITING: No Unit was originally certified pursuant to the power plant siting provisions of Chapter 62-17, F.A.C.

CAM: Compliance Assurance Monitoring (CAM) does not apply to any of the units at the facility. Pollutants sulfur dioxide (SO_2), sulfuric acid mist (SAM), and particulate matter (PM) are controlled by final absorption tower, mist eliminator, and baghouse. These control equipments are considered inherent process equipment (IPE) for CAM purposes. Fluoride (F) emission is controlled by scrubbers. The pollutant (F) is subject to national emission standards for hazardous air pollutants (NESHAP) and the equipment is considered inherent process equipment for the purpose of CAM.

PROJECT REVIEW

The Title V Air Operation Permit Revision includes the terms of Air Construction Permit Nos. 1050046-031-AC and 1050046-034-AC and the notice of permit determination dated 02/16/2011. Air Construction Permit No. 1050046-031-AC was to upgrade the granulator, screens, product elevator and cooler of the No. 3 Fertilizer (DAP/MAP) plant. Air Construction Permit No. 1050046-034-AC was to install a coating oil ribbon blender downstream of the polishing screens and before the Cominco Plate Cooler of the same plant. The notice of permit determination was regarding the installation of two storage silos and two day bins to store zinc and boron micronutrient compounds. The Title V Air Operation Permit Revision removes Appendix 40 CFR 61, Subparts A and R rule quotes of section I, Bartow Phosphogypsum Stack, from the permit and include them in the Appendices portion of the permit package. The Title V Revision permit also removes two 180 hp diesel engine for the abandoned #1 Deepwell and adds one 580 hp diesel engine for the new deep well, designated 1-R.

CONCLUSION

This project (1050046-038-AV) revises Title V air operation permit No. 1050046-035-AV, which was issued on May 30, 2012. This Title V air operation permit revision is issued under the provisions of Chapter 403, Florida Statues (F.S.), and Chapters 62-4, 62-210 and 62-213, F.A.C.