Title V Air Operation Permit Revision
Permit No. 0570008-0~~79~~81-AV

APPLICANT

The applicant for this project is Mosaic Fertilizer, LLC. The applicant's responsible official and mailing address are: ~~Robert Fredere, General Manager (Operations)~~ Scott Lehr, Environmental Manager, Mosaic Fertilizer, LLC, Riverview Facility, 13830 Circa Crossing Drive, Lithia, FL 33547.

FACILITY DESCRIPTION

The applicant operates the Mosaic Riverview Facility, which is located in Hillsborough County at 8813 US Highway 41 South, Riverview, Florida.

This facility consists of several industrial processes that convert insoluble rock containing phosphorus ore into a soluble form suitable for agricultural use. The processes consist of one phosphoric acid plant (two trains), two ammoniated phosphate (AP) plants, three sulfuric acid plants, one material handling system, one auxiliary boiler, two animal feed plants, a molten sulfur storage and handling system, emergency compression ignition (CI) reciprocating internal combustion engines (RICE) and non-emergency CI internal combustion engines (ICE).

Molten sulfur is the feed for the double absorption sulfuric acid plants. Natural gas or No. 2 fuel oil is used for the cold start-up of the 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(8)(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 mist eliminator. These units utilize continuous emission monitors (CEMs) for sulfur dioxide (SO_2) emissions monitoring.

Phosphate rock and sulfuric acid are 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 – 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 scrubbers.

Phosphoric acid is the feed for the Fertilizer (AP) Plants. Each of these emission units consists of a reactor, granulator, dryer, cooler, mills, screens and ancillary equipment. The dryer is fired with natural gas with No. 2 fuel oil as a backup. These emission units are 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 – 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.

The Animal Feed Ingredient (AFI) facility consists of defluorinated acid batch tanks (3) and granulation system along with diatomaceous earth and limestone unloading systems, and the AFI loadout system. Emissions from loading and unloading activities are controlled by baghouses.

The material handling system transfers MAP, DAP, calcium phosphate animal feed, and phosphate rock from the storage buildings or rail cars to marine vessels and from the storage buildings to railcars, truck and container loadouts.

Particulate matter emissions generated during the transfer of materials are controlled by baghouses and are minimized through: a) partial enclosures, covered conveyors and equipment enclosures, b) the use of a telescopic chute during ship loading, c) minimize the drop height as much as practicable during ship loading, d) using a skirt or equivalent at the bottom end of the telescopic chute to provide cover during the unloading of fertilizer product into the ship cargo hold, e) coating products with dust suppressants, and f) restricting operating hours. An ~~revised~~ Operation and Maintenance (O & M) plan for the ~~new~~ baghouses ~~are~~ is included in the permit.

The facility has existing emergency compression ignition reciprocating internal combustion engines (CI RICE) that are subject to 40 CFR 63, Subpart A – General Provisions and Subpart ZZZZ - NESHAP for Stationary RICE. The facility added five new compression ignition (CI) internal combustion engines (ICE) that are subject to 40 CFR Part 60, Subpart IIII – Standards of Performance for Stationary CI ICE.

Also included in this permit are miscellaneous unregulated and insignificant emissions units and/or activities.

PROJECT DESCRIPTION

The purpose of this permitting project is to revise the existing Title V air operation permit for the above referenced facility.

PROCESSING SCHEDULE AND RELATED DOCUMENTS

Initial Title V Air Operation Permit No. 0570008-014-AV issued 04/28/1999
Renewed Title V Air Operation Permit No. 0570008-045-AV issued 05/31/2006
Renewed Title V Air Operation Permit No. 0570008-066-AV issued 10/31/2011
Title V Air Operation Permit Revision No. 0570008-037-AV issued 03/23/2004
Title V Air Operation Permit Revision No. 0570008-040-AV issued 03/23/2004
Title V Air Operation Permit Revision No. 0570008-051-AV issued 10/27/2008
Title V Air Operation Permit Revision No. 0570008-063-AV issued 10/13/2010
Title V Air Operation Permit Revision No. 0570008-076-AV issued 08/13/2013
Title V Air Operation Permit Revision No. 0570008-078-AV issued 12/16/2013
Title V Air Operation Permit Administrative Correction No. 0570008-033-AV issued 01/21/2000
Title V Air Operation Permit Revision No. 0570008-079-AV issued 06/09/2014
Application for a Title V Air Operation Permit Revision received ~~04~~10/~~02~~20/2014
Additional Information Request dated 11/25/2014
Additional Information Response received 12/23/2014
Notice of Intent to Issue Air Permit issued ~~04/18/2014~~ **[Month day, year]** ***(To be determined)***
Public Notice Published ~~04/24/2014~~ **[Month day, year]** ***(To be determined)***

Note: The additional information response received 12/23/2014 was in the form of an EPSAP application for a concurrently processed construction permit, 0570008-082-AC.

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 emissions units subject to the New Source Performance Standards (NSPS) of 40 Code of Federal Regulations (CFR) 60.

Regulation	**EU No(s).**
40 CFR 60, Subpart A, NSPS General Provisions	004, 005, 006, 113
40 CFR 60, Subpart H, Standards of Performance for Sulfuric Acid Plants	004, 005, 006
40 CFR 60, Subpart IIII, Standards of Performance for Stationary Compression Ignition Internal Combustion Engines	113

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

Regulation	**EU No(s).**
40 CFR 61, Subpart A, NESHAP General Provisions	104, 108
40 CFR 61, Subpart R, National Emission Standards for Radon Emissions From Phosphogypsum Stacks	104, 108
40 CFR 63, Subpart A, General Provisions	007, 055, 073
40 CFR 63, Subpart AA - National Emission Standards for Hazardous Air Pollutants From Phosphoric Acid Manufacturing Plants	073
40 CFR 63, Subpart BB - National Emission Standards for Hazardous Air Pollutants From Phosphate Fertilizers Production Plants.	007, 055
40 CFR 63, Subpart ZZZZ - National Emissions Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines	111
40 CFR 63, Subpart DDDDD—National Emission Standards for Hazardous Air Pollutants for Major Sources: Industrial, Commercial, and Institutional Boilers and Process Heaters	112

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

CAM: Compliance Assurance Monitoring (CAM) applies to the applicable emission units at the facility, described as follows:

EU ID No.	Brief Description	Pollutants subject to CAM	Control Device subject to CAM
-007	No. 6 AP Plant	PM	Cooler venturi & tailgas scrubbers

PROJECT REVIEW

The purpose of this project is to incorporate the provisions of Construction Permit No. 0570008-0~~75~~74-AC and concurrently processed Construction Permit No. 0570008-082-AC. ~~This construction permit~~ Construction Permit No. 0570008-074-AC authorized modification of the No. 5 Ammoniated Phosphate Plant ~~the installation of an auxiliary boiler (E.U. ID 112) that will replace the existing auxiliary boiler (E.U. ID 043).~~ Construction permit

No. 0570008-082-AC changed the basis of emission calculations for the ammoniated phosphate plant Nos. 5 and 6 from input based to production based. The project also includes minor maintenance related tasks such as repair or replacement of pumps, valves, piping, ducting and dampers, etc. An updated process flowchart for the No. 5 Plant is attached.

The following changes were made to the Title V permit as part of this revision:

Table of Contents changed as:

~~C. EU No. 043112 Auxiliary Steam Boiler ..... 21-24~~

B. EU No. 055 No. 5 AP Plant
EU No. 007 No. 6 AP Plant 16-21

~~E. EU No. 055 No. 5 Granulation Plant ..... 32-35~~

All other Table of Contents entries remain the same, except for re-numbering of pages to fit the current ~~template~~ sections.

~~Facility Wide Conditions were updated to current template.~~

Section III. Subsection ~~C~~ E. was ~~replaced~~ removed in its entirety~~, removing all descriptions, conditions and references to EU No. 043 and adding all descriptions, specific conditions and references to EU No. 112~~.

Section III. Subsection B was modified to include the updated descriptions and conditions for EU 055, No. 5 Granulation Plant

~~Various other references to Emissions Unit No. -043 were changed to EU No. -112.~~

~~Added Appendix NSPS – 40 CFR 60 Subpart Db – Standards of Performance for Industrial-Commercial-Institutional Steam Generating Units and updated attachment lists and Applicable Regulations Sections to reflect this addition.~~

~~Description of EU No. 073, Phosphoric Acid Plant was expanded for clarification.~~

Minor typos and formatting errors were corrected.

CONCLUSION

This project revises Title V Air Operation Permit No. 0570008-0~~78~~79-AV, which was issued on ~~12/16/2013~~ 06/09/2014. 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.

89,000 CFM
RG
Equip
50,000 CFM
Dryer
80,000 CFM
New Eq Cyclone
New/Existing Cyclone
85,000 CFM
Exhst Fan
85,000 CFM
New Stack
135,000 CFM
Exhst Fan
New Fan
67,000 CFM
89,000 CFM
From Reactor and Granulator
New Pre-Scrubber 13'-6"
RG Scrubber (Was CE) 13'-6"
Equipt Scrubber (Was RG) 11'-6"
Dryer Scrubber 11'
81,500 CFM
(Dryer) Cyclonic 14' D x 32' H
135,000 CFM
(RGE) Cyclonic 17'D x 38'-6"H
67,000 CFM
New Co Cyclone
New Cooler Scrubber
Impact Spray
Impact Spray
New Seal Tank & Agitator
To Reactor
New Seal Tank
Fresh Water
Blow Down
Gas
30% Acid
Fresh Water
Mosaic
Riverview Facility
Figure 1. AP5 Process Flow Diagram
10/16/2014