# Florida Department of Environmental Protection

Southwest District Office
13051 North Telecom Parkway
Temple Terrace, Florida 33637-0926

Rick Scott
Governor

Herschel T. Vinyard Jr.
Secretary


## FINAL PERMIT

**PERMITTEE**

Mosaic Fertilizer, LLC
Riverview Facility
13830 Circa Crossing Drive
Lithia, FL 33547

Authorized Representative:
Mr. Larry Simpson, Plant Manager

Air Permit No. 0570008-074-AC
Permit Expires: 12/31/2015
Site Name: Riverview Facility
Minor Air Construction Permit
Project Name: Modify No. 5 AP Plant

This is the final construction permit to modify No. 5 Ammoniated Phosphate (AP) Plant, E.U. ID No. 055. The project also includes minor maintenance related tasks such as repair or replacement of pumps, valves, piping, ducting and dampers, etc. The proposed work will be conducted at the Mosaic Fertilizer, LLC, Riverview Facility (Standard Classification No. 2874). The facility is located in Hillsborough County at 8813 US Highway 41 South, Riverview, Florida. The UTM coordinates are Zone 17, 364.59 km East, and 3082.38 km North. As noted in the Final Determination provided with this final permit, no changes or only minor changes and clarifications were made to the draft permit.

This final permit is organized by the following sections:

Section 1. General Information

Section 2. Administrative Requirements

Section 3. Emissions Unit Specific Conditions

Section 4. Appendices

Due to the technical nature of the project, the permit contains numerous acronyms and abbreviations, which are defined in Appendix A of Section 4 of this permit.

This air pollution permit is issued under the provisions of: Chapter 403 of the Florida Statutes (F.S.) and Chapters 62-4, 62-204, 62-210, 62-212, 62-296 and 62-297 of the Florida Administrative Code (F.A.C.). The permittee is authorized to conduct the proposed work in accordance with the conditions of this permit. This project is subject to the general preconstruction review requirements in Rule 62-212.300, F.A.C. and is not subject to the preconstruction review requirements for major stationary sources in Rule 62-212.400, F.A.C. for the Prevention of Significant Deterioration (PSD) of Air Quality.

Upon issuance of this final permit, any party to this order has the right to seek judicial review of it under Section 120.68 of the Florida Statutes by filing a notice of appeal under Rule 9.110 of the Florida Rules of Appellate Procedure with the clerk of the Department of Environmental Protection in the Office of General Counsel (Mail Station #35, 3900 Commonwealth Boulevard, Tallahassee, Florida, 32399-3000) and by filing a copy of the notice of appeal accompanied by the applicable filing fees with the

appropriate District Court of Appeal. The notice must be filed within 30 days after this order is filed with the clerk of the Department.

Executed in Hillsborough County, Florida

_____ _____

Kelley M. Boatwright Effective Date
District Air Program Administrator
Southwest District

**CERTIFICATE OF SERVICE**

The undersigned duly designated deputy agency clerk hereby certifies that this Final Air Permit package (including the Final Determination, the Final Permit and the Appendices) was sent by electronic mail (or a link to these documents made available electronically on a publicly accessible server) with received receipt requested before the close of business on the date indicated below to the persons listed below.

Larry Simpson, Mosaic Fertilizer, LLC (larry.simpson@mosaicco.com)
Rama Iyer, P.E., Mosaic Fertilizer, LLC (rama.iyer@mosaicco.com)
Diana Lee, P.E., EPCHC (lee@epchc.org)

Clerk Stamp

**FILING AND ACKNOWLEDGMENT FILED**, on this date, pursuant to Section 120.52(7), Florida Statutes, with the designated agency clerk, receipt of which is hereby acknowledged.

_____

(Clerk) (Date)

## FACILITY AND PROJECT DESCRIPTION

### Existing Facility

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 and emergency compression ignition (CI) reciprocating internal combustion engines (RICE).

The following activities are undertaken to produce fertilizer with water-soluble phosphorus and nitrogen values.

1. Phosphate rock delivered by railcar is unloaded, conveyed to storage, and ground by rotary ball mills.
2. Molten sulfur is burned under controlled stoichiometry to produce sulfuric acid.
3. Ground phosphate rock is acidulated with sulfuric acid, producing wet process phosphoric acid and byproduct calcium sulfate (gypsum) with release of fluoride compounds, including HF.
4. The phosphoric acid, which is approximately 30% by weight phosphorus expressed as $P_2O_5$, is sent to evaporators for concentration to 54%.
5. Ammoniated phosphate (AP) are produced by combining blended 54% and 30% phosphoric acid with ammonia in various mole ratios to produce mono-ammonium phosphate (MAP) or di-ammonium phosphate (DAP).
6. AP products are conveyed to dry storage buildings by trip conveyors, dropped to storage piles. These storage buildings store, handle and loadout AP product to conveyors and associated transfer equipment, such as bulk totes, feed and loadout elevators, mini bin system, and ribbon blender to load ships, barges, railcars, trucks and containers.

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

### Project Description and Affected Emissions Unit

This project is to modify the No. 5 ammoniated phosphate (AP) plant, Emissions Unit (EU) ID No. 055. The plant currently produces diammonium phosphate (DAP) and this project will allow the production of monoammonium phosphate (MAP) as well. This project will also modify the plant's scrubbing system from its current once through pond water system to a closed loop fresh water system. The project includes minor maintenance related tasks such as repair or replacement of pumps, valves, piping, ducting and dampers, etc. This project is not expected to result in an increase in the production rate of ammoniated phosphate (AP), and is not expected to cause a significant increase in the emission rate of any regulated pollutant.

This project will modify the following emissions unit:

| Facility ID No. 0570008 | |
|---|---|
| **EU ID No.** | **Emission Unit Description** |
| 055 | No. 5 AP Plant |

***NOTE:*** *Please reference the Permit No., Facility ID, and Emissions Unit ID in all correspondence, test report submittals, applications, etc.*

## FACILITY REGULATORY CLASSIFICATION

- The facility is a major source of hazardous air pollutants (HAP).
- The facility has no units subject to the acid rain provisions of the Clean Air Act (CAA).
- 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(PSD), F.A.C.

## PERMIT HISTORY/AFFECTED PERMITS

Reference with Permit No. 0570008-066-AV.

## SECTION 2. ADMINISTRATIVE REQUIREMENTS (FINAL)

1. Permitting Authority - The permitting authority for this project is the Florida Department of Environmental Protection (Department), Southwest District's Air Resource Management Section. The Southwest District's mailing address and phone number is:

   Florida Department of Environmental Protection
   Southwest District Office
   Air Resource Management Section
   13051 North Telecom Parkway
   Temple Terrace, Florida 33637-0926
   Telephone: 813-632-7600

   All documents related to applications for permits shall be submitted to the above address.

2. Compliance Authority - All documents related to compliance activities such as reports, tests, and notifications shall be submitted to the Hillsborough County Environmental Protection Commission (HCEPC). The mailing address and phone number is:

   Hillsborough County Environmental Protection Commission
   Air Management Division
   3629 Queen Palm Dr
   Tampa, FL 33619
   Telephone: 813-627-2600

3. Appendices - The following Appendices are attached as part of this permit:

   a. Appendix A. Citation Formats and Glossary of Common Terms;
   b. Appendix B. General Conditions;
   c. Appendix C. Common Conditions; and
   d. Appendix D. Common Testing Requirements.

4. Applicable Regulations, Forms and Application Procedures - Unless otherwise specified in this permit, the construction and operation of the subject emissions units shall be in accordance with the capacities and specifications stated in the application. The facility is subject to all applicable provisions of: Chapter 403, F.S.; and Chapters 62-4, 62-204, 62-210, 62-212, 62-213, 62-296 and 62-297, F.A.C. Issuance of this permit does not relieve the permittee from compliance with any applicable federal, state, or local permitting or regulations.

5. New or Additional Conditions - For good cause shown and after notice and an administrative hearing, if requested, the Department may require the permittee to conform to new or additional conditions. The Department shall allow the permittee a reasonable time to conform to the new or additional conditions, and on application of the permittee, the Department may grant additional time. [Rule 62-4.080, F.A.C.]

6. Modifications - Unless otherwise exempt by rule, the permittee shall not initiate any construction, reconstruction, or modification at the facility and shall not install/modify any pollution control device at the facility without obtaining prior authorization from the Department. Modification is defined as: Any physical change or changes in the method of operations or addition to a facility that would result in an increase in the actual emissions of any air pollutant subject to air regulations, including any not previously emitted, from any emissions unit or facility.

[Rules 62-210.200 - Definition of "Modification" and 62-210.300(1)(a), F.A.C.]

7. Source Obligation (PSD Major facilities only) -

   a. At such time that a particular source or modification becomes a major stationary source or major modification (as these terms were defined at the time the source obtained the enforceable limitation) solely by virtue of a relaxation in any enforceable limitation which was established after August 7, 1980, on the capacity of the source or modification otherwise to emit a pollutant, such as a restriction on hours of operation, then the requirements of subsections 62-212.400(4) through (12), F.A.C., shall apply to the source or modification as though construction had not yet commenced on the source or modification.

   b. At such time that a particular source or modification becomes a major stationary source or major modification (as these terms were defined at the time the source obtained the enforceable limitation) solely by exceeding its projected actual emissions, then the requirements of subsections 62-212.400(4) through (12), F.A.C., shall apply to the source or modification as though construction had not yet commenced on the source or modification.

   [Rule 62-212.400(12), F.A.C.]

8. Actual Emissions Reporting (PSD Major Facilities only) - This permit is based on an analysis that compared baseline actual emissions with projected actual emissions and avoided the requirements of subsection 62-212.400(4) through (12), F.A.C. for several pollutants. Therefore, pursuant to Rule 62-212.300(1)(e), F.A.C., the permittee is subject to the following monitoring, reporting and recordkeeping provisions.

   a. The permittee shall monitor the emissions of any PSD pollutant that the Department identifies could increase as a result of the construction or modification and that is emitted by any emissions unit that could be affected; and, using the most reliable information available, calculate and maintain a record of the annual emissions, in tons per year on a calendar year basis, for a period of 5 years following resumption of regular operations after the change. Emissions shall be computed in accordance with the provisions in Rule 62-210.370, F.A.C., which are provided in Appendix C of this permit.

   b. The permittee shall report to the Department within 60 days after the end of each calendar year during the 5-year period setting out the unit's annual emissions during the calendar year that preceded submission of the report. The report shall contain the following:

      1) The name, address and telephone number of the owner or operator of the major stationary source;

      2) The annual emissions as calculated pursuant to the provisions of 62-210.370, F.A.C., which are provided in Appendix C of this permit;

      3) If the emissions differ from the preconstruction projection, an explanation as to why there is a difference; and

      4) Any other information that the owner or operator wishes to include in the report.

   c. The information required to be documented and maintained pursuant to subparagraphs 62-212.300(1)(e)1 and 2, F.A.C., shall be submitted to the Department, which shall make it available for review to the general public.

For this project, the Department requires the annual reporting of actual particulate matter ($PM/PM_{10}$), and fluoride (F) emissions for the emissions unit No. EU 055.

[Permit Application dated 01/07/2013; Rules 62-212.300(1)(e) and 62-210.370, F.A.C.]

9. Annual Operating Report - On or before **April 1** of each year, the permittee shall submit a completed DEP Form 62-210.900(5), "Annual Operating Report for Air Pollutant Emitting Facility" (AOR) for the preceding calendar year. The report may be submitted electronically in accordance with the instructions received with the AOR package sent by the Department, or a hardcopy may be sent to the Compliance Authority.
[Rule 62-210.370(3), F.A.C.]

10. Application for Title V Air Operation Permit - This permit authorizes modification of the permitted emissions unit and initial operation to determine compliance with Department rules. A Title V air operation permit is required for continued operation of the permitted emissions unit. The permittee shall apply for a Title V air operation permit at least 90 days prior to expiration of this permit, but no later than 180 days after commencing operation or commencing operation as modified. Commencing operation means setting into operation of any emissions unit for any purpose. To apply for a Title V air operation permit, the applicant shall submit the following:

    a. the appropriate permit application form *(see current version of Rule 62-210.900, F.A.C. (Forms and Instructions), and/or FDEP Division of Air Resource Management website at: http://www.dep.state.fl.us/air/)*;

    b. a copy of the most recent compliance test report required by Specific Condition No. A.11., if not previously submitted; and,

    c. a copy of the most recent month of logs required by Specific Condition No. A.12.

    [Rules 62-4.030, 62-4.050, 62-4.220, and Chapter 62-213, F.A.C.]

## A. EU No. 055 – No. 5 AP Plant

This section of the permit addresses the following emissions unit.

| EU ID No. | Emission Unit Description |
|---|---|
| 055 | No. 5 AP Plant:<br>The ammoniated phosphate (AP) manufacturing plant (No. 5 AP Plant) produces granulated ammonium phosphate fertilizer products DAP and MAP.<br><br>The No. 5 AP Plant has a maximum process input rate of 73.5 tons per hour of $P_2O_5$ (daily average) and 40 mmBtu/hr heat input rate (monthly average) into the rotary dryer. AP is manufactured by reacting anhydrous ammonia and phosphoric acid in a sealed reaction tank and then by further adding ammonia to the ammoniated acid in a rotary reactor-granulator. The granulated un-sized AP exits the granulator and is dried in a rotary dryer. The dried material is then screened and the oversized and undersized material is recycled back to the granulator. The product is then cooled in a rotary drum cooler, screened, and sent to storage.<br><br>Emissions from the reactor and granulator go to a pre-scrubber, exhaust from the pre-scrubber goes to RG scrubber. Emissions from the equipment, dryer and cooler go to the respective cyclone and then to the respective scrubber. Exhaust from the RG scrubber and the Equipment scrubber are vented to the RGE impact spray cyclonic scrubber. Exhaust from the Dryer scrubber is vented to the Dryer impact spray cyclonic scrubber. RGE and Dryer impact spray cyclonic scrubbers and cooler scrubber finally exhaust into a common stack.<br><br>The RG, Equipment and Dryer scrubbers use 30% phosphoric acid as scrubbing liquid. The RGE and Dryer impact spray cyclonic scrubbers and cooler scrubber use fresh water as a scrubbing liquid in a closed loop system. |

### PERFORMANCE RESTRICTIONS

A.1. Federal Regulatory Requirements - This emissions unit is subject to 40 CFR 63, Subparts BB and A– National Emission Standards for Hazardous Air Pollutants from Phosphate Fertilizer Production Plants and General Provisions, which are adopted by reference in Rule 62-204.800, F.A.C.
[Rule 62-204.800(11), F.A.C.]

A.2. Permitted Capacity - The maximum allowable process input, production and heat input rates are as follows:

| Process Input Rate of $P_2O_5$, tons per hour (daily average) | Production Rate of AP (dry basis), tons per hour (daily average) | Heat Input Rate to Rotary Dryer, MMBtu/hr (monthly average) | Fuel Type |
|---|---|---|---|
| 73.5 | 156.6 | 40.0 | Natural Gas, No. 2 Fuel Oil |

[Rules 62-4.160(2), 62-204.800, 62-210.200 (Definition of Potential to Emit), and 62-296.403, F.A.C.; Construction Permit No. AC29-196763]

A.3. Methods of Operation -
a. *Fuels.* The fuels that are allowed to be burned in this unit are:
(1) Natural gas, and,
(2) No. 2 fuel oil with a maximum sulfur content of 0.5% by weight as a back-up fuel. No. 2 fuel oil shall not be fired for more than 400 hours per year.
b. Fugitive emissions from the process, conveying and storage equipment shall be controlled by sealing and/or venting particulate and fumes from the equipment to the pollution abatement system.
[Rule 62-213.410, F.A.C.; Construction Permit Nos. AC29-196763 and AC29-238303]

## EMISSIONS STANDARDS

*{Permitting Note: Unless otherwise specified, the averaging time(s) for **Specific Condition A.4.** is based on the specified averaging time of the applicable test method.}*

A.4. Pollutant Emission Limits - Emissions from the No. 5 AP Plant shall not exceed any of the following:

| Pollutant | Maximum Allowable Emissions | | |
|---|---|---|---|
| | Pounds per Ton of Equiv. $P_2O_5$ Feed | Pound per Hour[1] | Tons per Year[1] |
| $PM/PM_{10}$ | | 12.8 | 56.1 |
| $SO_2$ | | 12.7 | 2.6 |
| Fluoride | 0.06 | 3.3 | 14.5 |

[1]Reference: Construction Permit AC29-238303; 40 CFR 63.622(a)

A.5. Visible Emissions (VE) Limit - Visible emissions from No. 5 AP Plant shall not exceed 10% opacity.
[Construction Permit AC29-196763; BACT determination dated November 25, 1991]

## TESTING REQUIREMENTS

A.6. Initial Compliance Tests - The emissions unit shall be tested to demonstrate initial compliance with the PM/ $PM_{10}$, F and visible emissions opacity standards. The initial tests shall be conducted no later than 90 days after initial operation of the emission unit after the modification.
[Rules 62-4.070(3) and 62-297.310(7)(a)1, F.A.C.]

A.7. Test Requirements - Tests shall be conducted in accordance with the applicable requirements specified in Appendix D (Common Testing Requirements) of this permit.
[Rule 62-297.310, F.A.C.]

A.8. Test Method(s) - Required tests shall be performed in accordance with the following reference method(s).

| Method(s) | Description of Method and Comments |
|---|---|
| 1-4 | Traverse points, velocity and flow rate, gas analysis, and moisture content |
| 5 | Determination of Particulate Matter Emissions from Stationary Sources |
| 9 | Visual Determination of the Opacity of Emissions from Stationary Sources |
| 13A | Determination of Total Fluoride Emissions from Stationary Sources – SPADNS –Zirconium Lake Method – 40 CFR 60, Appendix A |
| 13B | Determination of Total Fluoride Emissions from Stationary Sources – Specific Ion Electrode Method – 40 CFR 60, Appendix A |

The above methods are described in 40 CFR 60, Appendix A, and adopted by reference in Rule 62-204.800, F.A.C. No other methods may be used unless prior written approval is received from the Department.
[Rules 62-204.800 and 62-297.100, F.A.C.; and Appendix A of 40 CFR 60]

## NOTIFICATION REQUIREMENTS

A.9. Test Notification - The permittee shall notify the Compliance Authority in writing at least 60 days prior to the date on which each formal compliance test is to begin. The notification must include the following information: the date, time, and location of each test; the name and telephone number of the facility's contact person who will be responsible for coordinating the test; and the name, company, and the telephone number of the person conducting the test.
{*Permitting Note: The notification should also include the relevant emissions unit ID No(s)., test method(s) to be used, and pollutants to be tested.*}
[40 CFR 63.9(e); 40 CFR 63.607(a) or 40 CFR 63.627(a)]

A.10. Notification of Operation Commencement - The permittee shall notify the Compliance Authority in writing of the date of commencing operation of the EU No. 055, after completing the modifications authorized by this permit, no later than fifteen (15) days after that date. Commencing operation means setting into operation of any emissions unit for any purpose.
[Rule 62-4.070, F.A.C., and Rule 62-210.200, F.A.C., (Definition of Commence Operation)]

## RECORDS AND REPORTS

A.11. Test Reports - The permittee shall prepare and submit reports for all required tests in accordance with the requirements specified in Appendix D (Common Testing Requirements) of this permit.
[Rule 62-297.310(8), F.A.C.]

A.12. Daily Records - A daily record log(s) shall be established and maintained to document,

at a minimum, the following:

a. Facility Name, Facility ID No. (0570008), Emission Unit ID No. (EU 055);
b. Date;
c. Production Mode (DAP or MAP);
d. When operating, record hours of operation of the DAP/MAP production;
e. When operating, record the quantity, in tons, $P_2O_5$ input and DAP/MAP production;
f. When operating, record the process rate, in tons per hour, $P_2O_5$ input and DAP/MAP production (daily average);
g. The quantity of natural gas and the quantity of No. 2 oil (MCF and gallons) utilized in the rotary dryer;
h. Heat input rate to the rotary dryer, mmBtu/hr (daily average).

Daily records shall be completed within five (5) business days.

i. Heat input rate to the rotary dryer, mmBtu/hr (monthly average).

Monthly record shall be completed within fifteen (15) business days.

The record shall be retained at the facility for a minimum of five (5) years and shall be made available to the Permitting and Compliance Authorities upon request.
[40 CFR 63.625(b); Rules 62-213.440(1) and 62-4.070(3), F.A.C.]

*{Permitting Note: In addition to the conditions above, this emissions unit remains subject to all the other valid conditions contained in the current Title V Air Operation permit.}*