Florida Department of Environmental Protection

Southwest District Office
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Temple Terrace, FL 33637-0926

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Carlos Lopez-Cantera
Lt. Governor

Ryan E. Matthews
Interim Secretary

PERMITTEE

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

Authorized Representative:
Joseph Alderdice, EHS Manager

Air Permit No. 0570005-074-AC
Permit Expires: 9/30/2018
Minor Air Construction Permit

Plant City Facility
"A" PAP Reactor Repairs and
Flow Circulation Optimization

PROJECT

This is the final air construction permit, which authorizes repairs and modifications to the reactor in the "A" Phosphoric Acid Plant. The proposed work will be conducted at the Plant City Facility, which is a phosphate fertilizer production facility categorized under Standard Industrial Classification No. 2874. The existing facility is located in Hillsborough County at 660 East County Line Road in Plant City, Florida. The UTM coordinates are Zone 17, 388.0 km East, and 3166.0 km North.

This final permit is organized into the following sections: Section 1 (General Information); Section 2 (Administrative Requirements); Section 3 (Emissions Unit Specific Conditions); and Section 4 (Appendices). Because of 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.

STATEMENT OF BASIS

This air pollution construction 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

for

_____

Pamala Vazquez
Program Administrator
Permitting & Waste Cleanup Program
Southwest District

CERTIFICATE OF SERVICE

The undersigned duly designated deputy agency clerk hereby certifies that this Air Permit package 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 following persons.

Joseph Alderdice, Mosaic Fertilizer, LLC, joe.alderdice@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.

Cathy Rodriguez February 6, 2017

(Clerk) (Date)

FACILITY DESCRIPTION

This facility is a phosphate fertilizer production facility. The facility includes four sulfuric acid production plants, two phosphoric acid production plants, four ammonium phosphate production plants with associated storage and shipping units, a molten sulfur storage and handling system, a phosphogypsum stack, and four emergency diesel engines. Final products produced at the facility include sulfuric acid, phosphoric acid, ammonium sulfate, diammonium phosphate (DAP), and monoammonium phosphate (MAP).

This facility is classified as a major source (Title V source) of Nitrogen Oxides (NOx), Particulate Matter - PM10, Sulfur Dioxide (SO2), Fluorides (F) and Sulfuric Acid Mist (SAM). Additionally, the Department has determined that this facility is a major source of hazardous air pollutants (HAPs), based upon its estimation of emissions of hydrogen fluoride. If additional testing and modeling demonstrate: (1) that the facility is not and has never been a major source of hazardous air pollutants since at least June 10, 2002, or (2) if prospective changes to Subparts AA and BB warrant such an outcome, the Permittee shall have the right to request that the Department revise the determination of major source status and revise this permit to remove all requirements and conditions based on 40 CFR Part 63.

The existing facility consists of the following emissions units.

Facility ID No. 0570005

EU ID No.	Emission Unit Description
001	Johnson Scotch Marine Type Boiler
002	“A” Sulfuric Acid Plant
003	“B” Sulfuric Acid Plant
004	“A” Phosphoric Acid Plant
007	“C” Sulfuric Acid Plant
008	“D” Sulfuric Acid Plant
009	“B” Phosphoric Acid Plant
010	“A” DAP/MAP Plant
011	“Z” DAP/MAP Plant
012	“X” DAP/MAP Plant
013	“Y” DAP/MAP Plant
014	“A & B” Storage Buildings
015	“A” Shipping Baghouse
018	“B” Shipping Baghouse
019	“B” Truck Loading
020	“B” Railcar Loading
022	2600 Ton Storage Tank
023	Truck Pit A
024	Truck Pit B
032	Phosphoric Acid Cleanup
033	5000 Ton Storage Tank
100	Phosphogypsum Stack
102	Emergency Diesel Engines (Existing stationary RICE)
099	Unregulated Facility Fugitive Emissions

PROPOSED PROJECT

This project is for the repair and modification of the Door-Oliver design reactor in the facility's "A" Phosphoric Acid Plant and will included structural repairs to the reactor roof, repairs to the supporting column section of the reactor outer and inner circular walls, and modifications to the reactor internal radial walls and circular wall to optimize flow circulation. Structural repairs will include replacing the reactor roof section which needs repair and replacement and repairing supporting columns of the outer and inner circular wall sections of the reactor. Modifications will include changes to the reactor's column sections (i.e., internal radial wall and inner circular wall) that will result in new open and closed sections and will allow enhanced flow patterns to improve residence time and overall conversion efficiency. The existing and proposed design are shown in Appendix E, Figure 3a and 3b, respectively.

This project will modify the following emissions units.

Facility ID No. 0570005	
ID No.	**Emission Unit Description**
004	"A" Phosphoric Acid Plant

FACILITY REGULATORY CLASSIFICATION

- The facility is a major source of hazardous air pollutants (HAP).
- The facility does not operate 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 62-213, 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 current Title V Operation Permit No. 0570005-071-AV.

SECTION 2. ADMINISTRATIVE REQUIREMENTS (FINAL)

1. Permitting Authority: The permitting authority for this project is the Southwest District of the Department of Environmental Protection (Department). The mailing address, phone number and e-mail address is:

   Florida Department of Environmental Protection
   Southwest District Office
   Air and Solid Waste Permitting Program
   13051 North Telecom Parkway
   Temple Terrace, Florida 33637-0926
   Telephone: 813-470-5700
   E-mail: SWD_Air_Permitting@dep.state.fl.us

   All documents related to applications for permits shall be submitted to the above e-mail address and/or address.

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

   Environmental Protection Commission of Hillsborough County (EPCHC)
   Air Management Division
   3629 Queen Palm Drive
   Tampa, Florida 33619
   Telephone: 813-627-2600

3. Appendices: The following Appendices are attached as a part of this permit:
   - Appendix A (Citation Formats and Glossary of Common Terms);
   - Appendix B (General Conditions);
   - Appendix C (Common Conditions);
   - Appendix D (Common Testing Requirements); and
   - Appendix E ("A" Phosphoric Acid Plant Reactor Process Flow).

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: The permittee shall notify the Compliance Authority upon commencement of construction. No new emissions unit shall be constructed and no existing emissions unit shall be modified without obtaining an air construction permit from the Department. Such permit shall be obtained prior to beginning construction or modification.
   [Rules 62-210.300(1) and 62-212.300(1)(a), F.A.C.]

7. Construction and Expiration. The expiration date shown on the first page of this permit provides time to complete the physical construction activities authorized by this permit, complete any necessary compliance testing, and obtain an operation permit. Notwithstanding this expiration date, all specific emissions limitations and operating requirements established by this permit shall remain in effect until the facility or emissions unit is permanently shut down. For good cause, the permittee may request that that a permit be extended. Pursuant to Rule 62-4.080(3), F.A.C., such a request shall be submitted to the Permitting Authority in writing before the permit expires.
[Rules 62-4.070(4), 62-4.080 & 62-210.300(1), F.A.C.]

8. Source Obligation:
   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.]

9. Actual Emissions Reporting: 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 Compliance Authority (EPCHC) 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 calculations 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 Compliance Authority (EPCHC), which shall make it available for review to the general public.

For this project, the permit requires the annual reporting of the following:

1) actual Fluorides (F) emissions and the equivalent P_2O_5 input rates in tons per year for Emissions Unit Nos. 004 and 009.
2) actual Fluorides (F) emissions and the P_2O_5 input rates in tons per year for Emissions Unit Nos.010, 011, 012 and 013.
3) actual sulfur dioxide (SO_2) and sulfuric acid mist (SAM) emissions and the actual production rates of 100% H_2SO_4 for Emissions Unit Nos. 002, 003, 007 and 008.

[Application 0570005-074-AC; and Rules 62-212.300(1)(e) and 62-210.370, 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/)*; and,

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

    The application shall be submitted to the Permitting Authority with a copy to the Compliance Authority (EPCHC).

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

    Electronic Annual Operating Report and Title V Annual Emissions Fees. The information required by the Annual Operating Report for Air Pollutant Emitting Facility [Including Title V Source Emissions Fee Calculation] (DEP Form No. 62-210.900(5)) shall be submitted by April 1 of each year, for the previous calendar year, to the Department of Environmental Protection's (DEP) Division of Air Resource Management. Each Title V source shall submit the annual operating report using the DEP's Electronic Annual Operating Report (EAOR) software, unless the Title V source claims a technical or financial hardship by submitting DEP Form No. 62-210.900(5) to the DEP Division of Air Resource Management instead of using the reporting software. Emissions shall be computed in accordance with the provisions of subsection 62-210.370(2), F.A.C. Each Title V source must pay between January 15 and April 1 of each year an annual emissions fee in an amount determined as set forth in subsection 62-213.205(1), F.A.C. The annual fee shall only apply to those regulated pollutants, except carbon monoxide and greenhouse gases, for which an allowable numeric emission-limiting standard is specified in the source's most recent construction permit or operation permit. Upon completing the required EAOR entries, the EAOR Title V Fee Invoice can be printed by the source showing which of the reported emissions are subject to the fee and the total Title V Annual Emissions Fee that is due. The submission of the annual Title V emissions fee payment is also due (postmarked) by April 1st of each year. A copy of the system-generated EAOR Title V Annual Emissions Fee Invoice and the indicated total fee shall be submitted to: **Major Air Pollution Source Annual Emissions Fee, Post Office Box 3070, Tallahassee, Florida 32315-3070.** Additional information is available by accessing the Title V Annual Emissions Fee On-line Information Center at the following Internet web site: http://www.dep.state.fl.us/air/emission/tvfee.htm. [Rules 62-210.370(3), 62-210.900 & 62-213.205, F.A.C.; and, §403.0872(11), Florida Statutes (2013)]

    {Permitting Note: Resources to help you complete your AOR are available on the electronic AOR (EAOR) website at: http://www.dep.state.fl.us/air/emission/eaor. If you have questions or need

assistance after reviewing the information posted on the EAOR website, please contact the Department by phone at (850) 717-9000 or email at eaor@dep.state.fl.us.}

{Permitting Note: The Title V Annual Emissions Fee form (DEP Form No. 62-213.900(1)) has been repealed. ***A separate Annual Emissions Fee form is no longer required to be submitted by March 1st each year.****}*

A. EU No. 004 – "A" Phosphoric Acid Plant

This section of the permit addresses the following emissions units.

EU No.	Emission Unit Description
004	**"A" Phosphoric Acid Plant**: The "A" Phosphoric Acid Plant has a maximum permitted production rate of 1,699 tons per day of 100% phosphoric acid. Fluoride emissions from this plant are controlled by a cyclonic scrubber followed by a packed bed scrubber with "Kimre" packing or equivalent packing. Typical gas flow rate through the scrubbers is approximately 43,000 DSCFM. The scrubber system uses pond water as the scrubbing liquid. Phosphoric acid transfers to and from the storage tanks and operation of the evaporation process is permitted up to a maximum of 730 hours per year, during periods when the plants scrubbing system is not operating due mainly to scrubber maintenance activities.

FEDERAL REGULATIONS

A.1. Federal Regulatory Requirements: This emissions unit is subject to the applicable requirements contained in 40 CFR 63, Subpart AA - National Emission Standards for Hazardous Air Pollutants from Phosphoric Acid Manufacturing Plants and 40 CFR 63, Subpart A - General Provisions. The requirements of 40 CFR 63, Subpart AA apply to phosphoric acid manufacturing plants and the following emissions points which are components of a wet-process phosphoric acid process line: reactors, filters, evaporators, and hot wells. This emissions unit is also subject to the requirements of 40 CFR 60, Subpart T; however, when in compliance with all of the requirements of 40 CFR 63, Subpart AA, the phosphoric acid plant is exempted from the requirements of 40 CFR 60, Subpart T.
[Rules 62-213.440 and 62-204.800, F.A.C.; 40 CFR 63, Subpart A and 40 CFR 63, Subpart AA]

EQUIPMENT

A.2. "A" Phosphoric Acid Plant Reactor: The permittee is authorized to perform the following repairs and modifications:

a. repair the reactor roof;

b. repair the supporting column sections of the reactor outer and inner circular wall sections;

c. modify reactor internal radial walls and circular wall to optimize flow circulation.

[Application No. 0570005-074-AC]

{Note: See Appendix E for the existing and proposed reactor flow circulation designs.}

PERFORMANCE RESTRICTIONS

A.3. Permitted Capacity: The process input rates correspond to the "equivalent P_2O_5 feed". The following maximum daily average rates shall not be exceeded:

E.U. ID No.	Plant Name	Maximum Process Input Rate
004	"A" PAP	70.8 tons/hour of 100% P_2O_5 (daily average)
		1,699 tons/day of 100% P_2O_5
		620,208 tons per any consecutive 12 month of 100% P_2O_5
009	"B" PAP	105.4 tons/hour of 100% P_2O_5 (daily average)
		2,530 tons/day of 100% P_2O_5
		923,304 tons per any consecutive 12 month of 100% P_2O_5

The permitted process input rate for each emissions unit shall be the rate during the most recently

accepted compliance test plus 10%; not to exceed the permitted maximum process input rate (tons/hour 100% rock P_2O_5) of the emissions unit.

[Rules 62-4.160(2) and 62-210.200(Definitions – Potential to Emit (PTE)), F.A.C.; Construction Permit 0570005-021-AC/PSD-FL-355]

A.4. Restricted Operation:

a. The hours of operation are not limited (8760 hours per year).

b. When the scrubbing system in the "A" PAP is not operating, the hours of transferring phosphoric acid to and from storage tanks and operation of evaporation process in the "A" PAP are limited to 730 hours per year.

[Construction Permit 0570005-037-AC; Rules 62-4.070(3) and 62-210.200 (PTE), F.A.C.]

EMISSIONS STANDARDS

A.5. Emissions Standards: Total fluorides (F) emissions shall not exceed any of the following limits:

E.U. ID No.	Plant Name	Maximum Total Fluorides (F) Emissions
004	"A" PAP	0.012 pound/ton of "equivalent P_2O_5 feed"
		0.85 pounds/hour
		3.7 tons/year
"equivalent P_2O_5 feed" means the quantity of phosphorus, expressed as phosphorus pentoxide, fed to the process as rock P_2O_5.		

[Construction Permits 0570005-021-AC/PSD-FL-355 and 0570005-044-AC]

{Permitting Note: The above limits are more stringent than those specified in Rule 62-296.403, F.A.C.; 40 CFR 60 Subpart T; and 40 CFR 63, Subpart AA}

TESTING REQUIREMENTS

A.6. Initial Compliance Tests: The emissions unit shall be tested to demonstrate initial compliance with the emissions standards for fluorides. The initial tests shall be conducted within 60 days after achieving permitted capacity, but not later than 180 days after initial operation of the modified unit.
[Rules 62-4.070(3) and 62-297.310(8)(b)1, F.A.C.]

{Note: The initial test may be used to satisfy the annual test requirement.}

A.7. Annual Compliance Tests: During each calendar year (January 1st to December 31st), the emissions unit shall be tested to demonstrate compliance with the emissions standards for fluorides. [Rule 62-297.310(8)(a)1, F.A.C.]

A.8. Test Requirements: The permittee shall notify the Compliance Authority in writing at least 15 days prior to any required tests. Tests shall be conducted in accordance with the applicable requirements specified in Appendix D (Common Testing Requirements) of this permit.
[Rule 62-297.310(9), F.A.C.]

A.9. Test Methods: Required tests shall be performed in accordance with the following reference methods.

Method	Description of Method and Comments
1, 2 &4	Traverse Points, Velocity and Flow Rate, and Moisture Content

Method	Description of Method and Comments
13A	Determination of Total Fluoride Emissions from Stationary Sources – SPADNS – Zirconium Lake Method
13B (without distillation)	Determination of Total Fluoride Emissions from Stationary Sources – Specific Ion Electrode Method

The above methods are described in Appendix A of 40 CFR 60 and are 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, F.A.C.; and Appendix A of 40 CFR 60]

NOTIFICATION REQUIREMENTS

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. 004 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.
[Rules 62-4.070, and 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. A summary of the following process data shall be included in any compliance test report:

a. the process input rate in tons/hour and tons/day expressed as 100% rock P_2O_5

b. the start and end time for the rate determination.

[Rule 62-297.310(10), F.A.C.]

{Permitting Note: All other conditions in the current Title V permit (0570005-048-AV) for E.U. No. 004 remains unchanged.}