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1. Article Addressed to:

Mr. Phong T. Vo
 U.S. Agri-Chemicals Corporation
 3225 State Road 630 West
 Ft. Meade, FL 33841

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Sent To Phong T. Vo
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STATE OF FLORIDA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
NOTICE OF FINAL PERMIT

In the Matter of an
Application for Permit


Mr. Phong T. Vo
U.S. Agri-Chemicals Corporation
3225 State Road 630 West
Ft. Meade, Florida 33841

DEP File No. 1050051-015-AC
PSD-FL-321

Enclosed is the FINAL Permit Number PSD-FL-321 for increasing the production rate of the existing Granular MAP/DAP Plant at its phosphate fertilizer manufacturing facility located in Ft. Meade, Polk County. This permit is issued pursuant to Chapter 403, Florida Statutes and in accordance with Rule 62-212.400., F.A.C. - Prevention of Significant Deterioration(PSD).

Any party to this order (permit) has the right to seek judicial review of the permit pursuant to Section 120.68, F.S., by the filing of a Notice of Appeal pursuant to Rule 9.110, Florida Rules of Appellate Procedure, with the Clerk of the Department in the Legal Office; 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 of Appeal must be filed within 30 (thirty) days from the date this Notice is filed with the Clerk of the Department.

Executed in Tallahassee, Florida.


C.H. Fancy, P.E., Chief
Bureau of Air Regulation

CERTIFICATE OF SERVICE

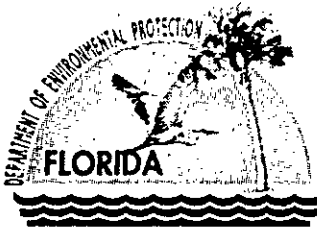
The undersigned duly designated deputy agency clerk hereby certifies that this NOTICE OF FINAL PERMIT (including the FINAL permit) was sent by certified mail (*) and copies were mailed by U.S. Mail before the close of business on 3/15/02 to the person(s) listed:

Phong T. Vo, USAC*
Gregg Worley, EPA
John Bunyak, NPS
Jerry Kissell, SWD
John Koogler, P.E., K & A

Clerk Stamp

FILING AND ACKNOWLEDGMENT FILED, on this date, pursuant to §120.52, Florida Statutes, with the designated Department Clerk, receipt of which is hereby acknowledged.

Victoria Gibson March 15, 2002
(Clerk) (Date)



Jeb Bush
Governor

Department of Environmental Protection

Marjory Stoneman Douglas Building
3900 Commonwealth Boulevard
Tallahassee, Florida 32399-3000

David B. Struhs
Secretary

PERMITTEE:

US Agri-Chemicals Corporation
3225 State Rd. 630 West
Ft. Meade, Florida 33841

Authorized Representative:

Phong T. Vo
General Manager of Eng. And Tech. Services

File No.	1050051-015-AC
Permit No.	PSD-FL-321
SIC No.	2874
Project:	Ft. Meade Chemical Plant
Expires:	May 1, 2004

PROJECT AND LOCATION:

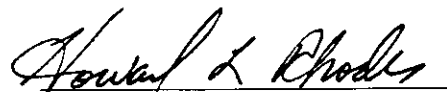
Permit for the construction /modification of the Ft. Meade Chemical Plant to increase production and the fertilizer storage and shipping rates at US Agri-Chemicals Corporation's Ft. Meade facility, 3225 State Road 630 West, Ft. Meade, Polk County. UTM coordinates are Zone 17; 416.2 km E; 3068.7 km N.

STATEMENT OF BASIS:

This construction permit is issued under the provisions of Chapter 403 of the Florida Statutes (F.S.), and the Florida Administrative Code (F.A.C.) Chapters 62-4, 62-204, 62-210, 62-212, 62-296, and 62-297. The above named permittee is authorized to modify the facility in accordance with the conditions of this permit and as described in the application, approved drawings, plans, and other documents on file with the Department of Environmental Protection (Department).

ATTACHED APPENDICES ARE MADE A PART OF THIS PERMIT:

Appendix BD BACT Determination
Appendix GC Construction Permit General Conditions


Howard L. Rhodes, Director
Division of Air Resources
Management

"More Protection, Less Process"

Printed on recycled paper.

AIR CONSTRUCTION PERMIT 1050051-015-AC AND PSD-FL-321

SECTION I. FACILITY INFORMATION

Facility Description

The U.S. Agri-Chemicals Corporation's Ft. Meade facility manufactures phosphate fertilizer. Phosphate rock is reacted with sulfuric acid (purchased or produced on-site) to make phosphoric acid. The phosphoric acid is reacted with ammonia to make monoammonium phosphate (MAP), or diammonium phosphate (DAP).

This permit allows an increase in the permitted production rate of granular MAP/DAP from 50 to 60 tons product per hour. This corresponds to 31.8 tons of P_2O_5 input per hour for MAP and 28.2 tons of P_2O_5 input per hour for DAP. The maximum loadout rate will be 150 tons per hour, on a daily basis.

REGULATORY CLASSIFICATION

The Ft. Meade facility is classified as a major source of air pollution or Title V source because it has the potential to emit at least 100 tons per year of nitrogen oxides and sulfur dioxide.

PERMIT SCHEDULE:

- 05-07-01: Date of Receipt of Application
- 11-15-01: Application deemed complete
- 01-28-02: Intent issued
- 02-08-02: Notice of Intent published in Lakeland Ledger

RELEVANT DOCUMENTS:

The documents listed form the basis of the permit. They are specifically related to this permitting action. These documents are on file with the Department.

- Application received 05-07-01
- Department's incompleteness letters dated 06-05-01, 10-29-01
- Applicant's letters dated 08-24-01, 09-26-01, 11-13-01
- Technical Evaluation and Preliminary Determination dated 01-25-02
- Best Available Control Technology determination (issued concurrently with permit)

AIR CONSTRUCTION PERMIT 1050051-015-AC AND PSD-FL-321

SECTION II. ADMINISTRATIVE REQUIREMENTS

1. Regulating Agencies: All documents related to applications for permits to operate, reports, tests, minor modifications and notifications shall be submitted to the Department's Southwest District Office, 3804 Coconut Palm Drive, Tampa, Florida 33619-8218 and phone number (813)744-6100. All applications for permits to construct or modify an emissions unit(s) *subject to the Prevention of Significant Deterioration or Nonattainment (NA) review requirements* should be submitted to the Bureau of Air Regulation (BAR), Florida Department of Environmental Protection (FDEP), 2600 Blair Stone Road, MS 5505, Tallahassee, Florida 32399-2400 (phone number 850/488-0114).
2. General Conditions: The owner and operator is subject to and shall operate under the attached General Permit Conditions G.1 through G.15 listed in Appendix GC of this permit. General Permit Conditions are binding and enforceable pursuant to Chapter 403 of the Florida Statutes. [Rule 62-4.160, F.A.C.]
3. Terminology: The terms used in this permit have specific meanings as defined in the corresponding chapters of the Florida Administrative Code.
4. Applicable Regulations, Forms and Application Procedures: Unless otherwise indicated in this permit, the construction and operation of the subject emissions unit 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 Florida Administrative Code Chapters 62-4, 62-110, 62-204, 62-212, 62-213, 62-296, 62-297 and the Code of Federal Regulations Title 40, Part 60, adopted by reference in the Florida Administrative Code (F.A.C.) regulations. The permittee shall use the applicable forms listed in Rule 62-210.900, F.A.C. and follow the application procedures in Chapter 62-4, F.A.C. Issuance of this permit does not relieve the facility owner or operator from compliance with any applicable federal, state, or local permitting or regulations. [Rules 62-204.800, 62-210.300 and 62-210.900, F.A.C.]
5. Expiration: This air construction permit shall expire on May 1, 2004 [Rule 62-210.300(1), F.A.C.]. The permittee may, for good cause, request that this construction permit be extended. Such a request shall be submitted to the Bureau of Air Regulation prior to 60 days before the expiration of the permit. However, the permittee shall promptly notify the Department's Southwest District Office of any delays in completion of the project which would affect the startup day by more than 90 days. [Rule 62-4.090, F.A.C.]
6. Application for Title V Permit: An application for a Title V operating permit, pursuant to Chapter 62-213, F.A.C., must be submitted to the Department's Southwest District Office. [Chapter 62-213, F.A.C.]
7. Permit Approval: Approval to construct shall become invalid if construction is not commenced within 18 months after receipt of such approval, or if construction is discontinued for a period of 18 months or more, or if construction is not completed within a reasonable time. The Department may extend the 18-month period upon a satisfactory showing that an extension is justified. [40 CFR 52.21(r)(2)].

SECTION II. ADMINISTRATIVE REQUIREMENTS

8. BACT Determination: In conjunction with extension of the 18 month periods to commence or continue construction, or extension of the permit expiration date, the permittee may be required to demonstrate the adequacy of any previous determination of best available control technology for the source. [40 CFR 52.21(j)(4)]
9. Annual Reports: Pursuant to Rule 62-210.370(2), F.A.C., Annual Operation Reports, the permittee is required to submit annual reports on the actual operating rates and emissions from this facility. Annual operating reports using DEP Form 62-210.900(4) shall be sent to the DEP's Southwest District office by March 1st of each year.
10. Stack Testing Facilities: Stack sampling facilities shall be installed in accordance with Rule 62-297.310(6), F.A.C.
11. Quarterly Reports: Quarterly excess emission reports, in accordance with 40 CFR 60.7 (a)(7) (c) (1997 version), shall be submitted to the DEP's Southwest District office.
12. 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.]

SECTION III. EMISSION UNIT(S) SPECIFIC CONDITIONS

SUBSECTION A. COMMON CONDITIONS:

40 CFR 60 - NEW SOURCE PERFORMANCE STANDARDS

This permit addresses the following emission units.

EMISSION UNIT NO.	EMISSION UNIT DESCRIPTION
037	MAP/DAP Loadout
038	Granular MAP/DAP Plant

These emission units shall comply with all applicable requirements of 40 CFR 60, General provisions, Subpart A, adopted by reference in Rule 62-204.800(7), F.A.C.

- 40 CFR 60.7, Notification and record keeping
- 40 CFR 60.8, Performance tests
- 40 CFR 60.11, Compliance with standards and maintenance requirements
- 40 CFR 60.12, Circumvention
- 40 CFR 60.13, Monitoring requirements
- 40 CFR 60.19, General notification and reporting requirements

The Granular MAP/DAP Plant is subject to the applicable requirements of the New Source Performance Standards (NSPS) adopted by reference in Rules 62-204.800, F.A.C., including:

- 40 CFR 60 Subpart V, Standards of Performance for Diammonium Phosphate Plants (DAP).

SUBSECTION B. SPECIFIC CONDITIONS :

The Specific Conditions listed in this subsection apply to the following emission units:

EMISSION UNIT NO.	EMISSION UNIT DESCRIPTION
037	MAP/DAP Loadout
038	Granular MAP/DAP Plant

1. Unless otherwise indicated, the construction and operation of the subject Granular MAP/DAP production facility shall be in accordance with the capacities and specifications stated in the application. **[Rule 62-210.300, F.A.C.]**
2. The subject emissions units shall comply with all applicable provisions of the 40 CFR 60 New Source Performance Standards for Diammonium Phosphate Plants, Subpart V. **[Rule 62-204.800 F.A.C.]**
3. The production rate shall not exceed 60 tons of MAP (31.8 tons of P₂O₅ feed per hour) or 60 tons of DAP (28.2 tons of P₂O₅ feed per hour). **[Rule 62-210.200, F.A.C. (Definitions - Potential Emissions)]**
4. The maximum permitted loadout rate is 150 tons product per hour, on a daily basis. **[Rule 62-210.200, F.A.C. (Definitions - Potential Emissions)]**

U.S. Agri-Chemicals Corporation
Granular MAP/DAP Plant

DEP File No. 1050051-015-AC
Permit No. PSD-FL-321

SECTION III. EMISSION UNIT(S) SPECIFIC CONDITIONS

5. The subject emission units are allowed to operate continuously (8760 hours/year). **[Rule 62-210.200, F.A.C. (Definitions - Potential Emissions)]**
6. Total fluoride emissions during MAP production shall not exceed 1.18 lb/hr and 5.2 TPY. Total fluoride emissions during DAP production shall not exceed 1.04 lb/hr and 4.6 TPY. **[Rule 62-212.400, F.A.C.]**
7. Particulate matter emissions during MAP/DAP production shall not exceed 10.2 lb/hr and 44.7 TPY. **[Rule 62-212.400, F.A.C.]**
8. Visible emissions from all scrubber stacks shall not exceed 20% opacity. Visible emissions from the Loadout stack shall not exceed 5% opacity. **[Rule 62-212.400, F.A.C.]**
9. The natural gas firing rate in the dryer shall not exceed 30 million BTU per hour. **[Rule 62-210.200, F.A.C.]**
10. The permittee shall install, calibrate, operate and maintain monitoring devices that continuously measure and record the total pressure drop across each scrubbing system. Accuracy of the monitoring devices shall be $\pm 5\%$ over the operating range. **[Rules 62-297.310, 62-204.800, F.A.C.; 40 CFR 60.223]**
11. Before this construction permit expires, the subject emission units shall be tested for compliance with the above emission limits. For the duration of all tests the emission unit shall be operating at permitted capacity. Permitted capacity is defined as 90-100 percent of the maximum operating rate allowed by the permit. If it is impracticable to test at permitted capacity, then the emission unit may be tested at less than permitted capacity (i.e., 90% of the maximum operating rate allowed by the permit); in this case, subsequent emission unit operation is limited to 110 percent of the test load until a new test is conducted. Once the emission unit is so limited, then operation at higher capacities is allowed for no more than 15 consecutive days for the purposes of additional compliance testing to regain the permitted capacity in the permit. **[Rule 62-297.310, F.A.C.]**
12. The Department's Southwest District office in Tampa shall be notified in writing at least 15 days prior to the compliance tests. Written reports of the test results shall be submitted to that office within 45 days of test completion. **[Rule 62-297.310, F.A.C.]**
13. The compliance test procedures shall be in accordance with EPA Reference Methods 1, 2, 3, 4, 5, 9 and 13A or 13B, as appropriate, as published in 40 CFR 60, Appendix A. **[Rules 62-204.800 and 62-297.310, F.A.C.]**
14. All measurements, records, and other data required to be maintained by this facility shall be retained for at least five (5) years following the date on which such measurements, records, or data are recorded. These data shall be made available to the Department upon request. **[Rule 62-213, F.A.C.]**
15. The permittee shall install, calibrate, maintain, and operate a monitoring device which can be used to determine the mass flow of phosphorus-bearing feed material to the process. The monitoring device shall have an accuracy of $\pm 5\%$ over its operating range. The

SECTION III. EMISSION UNIT(S) SPECIFIC CONDITIONS

permittee shall maintain a daily record of equivalent P₂O₅ feed by first determining the total mass rate in metric ton/hour of phosphorus bearing feed using the flow monitoring device meeting the requirements of 40 CFR 60.223(a) and then by proceeding according to 40 CFR 60.223(b). **[Rule 62-204.800, F.A.C.; 40 CFR 60.223(b)]**

16. No person shall cause, suffer, allow, or permit the discharge of air pollutants which cause or contribute to an objectionable odor. **[Rule 62-296.320, F.A.C.]**
17. No person shall circumvent any air pollution control device, or allow the emission of air pollutants without the applicable air pollution control device operating properly. **[Rule 62-210.650, F.A.C.]**
18. The subject emissions units shall be subject to the following:
 - Excess emissions resulting from startup, shutdown or malfunction of any source shall be permitted providing (1) best operational practices to minimize emissions are adhered to and (2) the duration of excess emissions shall be minimized but in no case exceed two hours in any 24 hour period unless specifically authorized by the Department for longer duration. **[Rule 62-210.700, F.A.C.]**
 - Excess emissions which are caused entirely or in part by poor maintenance, poor operation, or any other equipment or process failure which may reasonably be prevented during startup, shutdown, or malfunction shall be prohibited. **[Rule 62-210.700, F.A.C.]**
 - Considering operational variations in types of industrial equipment operations affected by this rule, the Department may adjust maximum and minimum factors to provide reasonable and practical regulatory controls consistent with the public interest. **[Rule 62-210.700, F.A.C.]**
 - In case of excess emissions resulting from malfunctions, each source shall notify the Department or the appropriate Local Program in accordance with Rule 62-4.130, F.A.C. A full written report on the malfunctions shall be submitted in a quarterly report, if requested by the Department. **[Rule 62-210.700, F.A.C.]**
19. The permittee shall submit an Annual Operating Report using the appropriate DEP form to the Department's Southwest District office by March 1 of the following year for the previous year's operation. **[Rule 62-210.370, F.A.C.]**
20. The permittee shall submit an application for the revision of the Title V permit upon completion of construction using the appropriate DEP form to the Department's Southwest District office at least 90 days prior to the expiration date of this permit. **[Rule 62-213, F.A.C.]**

FINAL DETERMINATION
U.S. Agri-Chemicals Corporation
Permit No. 1050051-015-AC, PSD-FL-321
Ft. Meade Chemical Plant

An Intent to Issue an air construction permit to U.S. Agri-Chemicals (USAC) Corp. to increase the production rate of the existing Granular MAP/DAP Plant within the complex in Polk County was distributed on January 28, 2002. The Notice of Intent was published in the Lakeland Ledger on February 8, 2002. Copies of the draft construction permit were available for public inspection at the Department offices in Tampa and Tallahassee.

The Department received no comments from the public, the applicant, or the Fish and Wildlife Service. The Department received the following comments from the U.S. Environmental Protection Agency (EPA), Region 4.

Comment: If not already done, we ask that the Florida Department of Environmental Protection (FDEP) confirm that the increase in MAP/DAP production will not result in increased utilization of (and increased emissions from) the sulfuric acid and phosphoric acid manufacturing areas of the Fort Meade facility.

Response: Over the last year, the sulfuric acid and phosphoric acid plants at the Ft. Meade facility were permitted to expand. The Department issued a construction permit to USAC on February 6, 2001 for increased production capability of the sulfuric acid and phosphoric acid plants (DEP File No. 1050051-009-AC, PSD-FL-278).

Currently some phosphoric acid from the Ft. Meade facility is routed to the USAC Bartow facility. To meet the demands of increased MAP/DAP production, the applicant has noted that, “[s]ome of the phosphoric acid normally routed to the USAC Bartow facility will be supplied to the MAP/DAP plant, to accommodate market demand and operation conditions...”¹ No sulfuric or phosphoric acid production beyond what is currently permitted will result from this action.

Comment: On page 23 of the permit application, the applicant refers to the “presumed BACT guideline cost of around \$10,000 per ton of fluorides removed.” As you know, the U.S. Environmental Protection Agency does not subscribe to the concept of a single bright line cost effectiveness value for use in a best available control technology (BACT) evaluation.

Response: The Department concurs with EPA and does not recognize a single bright line cost effectiveness value for use in BACT evaluations. Cost effectiveness is determined on a case-by-case basis.

¹ Permit Application. “Report in Support of PSD Application for Increase in Granular MAP/DAP Production.” Koogler & Associates. May 2001.

Comment: The applicant did not provide an analysis of potential vegetation and soils impacts due to increased fluorides emissions. Although we recognize that national ambient air quality standards do not exist for fluorides, ample reference information exists for assessing the potential impact of fluorides emissions on vegetation.

Response: Modeling predicted little or no long-term impacts based on fluoride emissions from the project, leading the applicant to conclude that there will be no adverse vegetation and soils impacts. The Department recognizes, however, that the potential ambient fluoride impacts from the USAC facility should be evaluated. In the construction permit issued February 6, 2001, for sulfuric and phosphoric acid production increases (PSD-FL-278), the Department required that the permittee submit for a minimum period of one year additional ambient fluorides monitoring data. The data will be collected beginning with the initial performance test and continuing at least through the first annual compliance test. The Department will stress to USAC that the ambient fluoride monitoring final report should contain an assessment of the potential impact of fluorides on vegetation.

Comment: We would not normally consider as adequate the analysis made by the applicant and by FDEP regarding the cost of neutralized water scrubbing for fluorides control. On page 24 of the permit application, the applicant states that “[t]reated water re-circulation is rejected as BACT based on costs evaluated for a similar project.” On page BD-4 of the preliminary determination, FDEP states that, “the cost would be expected to exceed even that for a packed scrubber.” With respect to the applicant’s statement, the cost data for the similar project is not provided and neither is information to confirm that the other project is in fact similar. With respect to FDEP’s statement, no supporting information is provided for the expectation expressed. However, we are willing to accept that FDEP’s experience with phosphate industry controls provides a basis for concluding that the cost of treated water scrubbing exceeds that for pond water scrubbing.

Response: Based on permitting experience and knowledge of the specific projects discussed in the application and in the BACT determination, the Department is confident that, for this project, packed scrubbing using neutralized water from a dedicated pond has higher costs than packed scrubbing using process cooling pond water. The Department rejected both of these control options and determined BACT to consist of the existing venturi scrubber using pond water.

The final action of the Department is to issue the permit as proposed.

f.

APPENDIX BD
BEST AVAILABLE CONTROL TECHNOLOGY DETERMINATION (BACT)

Granular Monoammonium and Diammonium Phosphate Plant
U.S. Agri-Chemicals Corporation
PSD-FL-321 / 1050051-015-AC
Ft. Meade, Polk County

The U.S. Agri-Chemicals Corporation proposes to increase the production rate of granular monoammonium phosphate (MAP) and diammonium phosphate (DAP) from 50 to 60 TPH at its existing Granular MAP/DAP Plant in Ft. Meade, Polk County. This will result in a corresponding increase in the fertilizer loadout operation. The proposed modification will result in a significant increase in emissions of particulate matter (PM/PM₁₀) and fluorides (F). The project is, therefore, subject to Prevention of Significant Deterioration (PSD) review in accordance with Rule 62-212.400, Florida Administrative Code (F.A.C.). A Best Available Control Technology (BACT) determination is part of the review required by Rules 62-212.400 and 62-296, F.A.C.

The Granular MAP/DAP Plant reacts phosphoric acid with ammonia to make granular MAP/DAP. The product goes to storage and loadout. The air emissions are indicated below:

Pollutant	PSD Level ¹	Actual Emissions ²	Current Allowables	Proposed Emissions ³	Net Change ⁴	Subject to PSD Review?
F	3	1.86	2.94	5.2	3.34	Yes
PM	25/15 ⁵	28.7	29.6	49.2	20.5	Yes
NO _x	40	7.2	N/A	18.4	11.2	No

¹ Tons per year (Rule 212.400, F.A.C.)

² Based on projected 2001 operations and compliance data for F and PM/PM₁₀. NO_x emissions based on AP-42 factors for boilers.

³ Proposed by applicant as allowable emissions at the new production rate.

⁴ Applicant's proposed emissions minus actuals.

⁵ PM/PM₁₀.

DATE OF RECEIPT OF COMPLETE BACT APPLICATION:

November 15, 2001

BACT DETERMINATION PROCEDURE:

In accordance with Chapter 62-212, F.A.C., this BACT determination is based on the maximum degree of reduction of each pollutant emitted which the Department of Environmental Protection (Department), on a case by case basis, taking into account energy, environmental and economic

APPENDIX BD
BEST AVAILABLE CONTROL TECHNOLOGY DETERMINATION (BACT)

impacts, and other costs, determines is achievable through application of production processes and available methods, systems, and techniques. In addition, the regulations state that, in making the BACT determination, the Department shall give consideration to:

- Any Environmental Protection Agency determination of BACT pursuant to Section 169, and any emission limitation contained in 40 CFR Part 60 - Standards of Performance for New Stationary Sources or 40 CFR Part 61 - National Emission Standards for Hazardous Air Pollutants.
- All scientific, engineering, and technical material and other information available to the Department.
- The emission limiting standards or BACT determination of any other state.
- The social and economic impact of the application of such technology.

The EPA currently stresses that BACT should be determined using the "top-down" approach. The first step in this approach is to determine, for the emission unit in question, the most stringent control available for a similar or identical emission unit or emission unit category. If it is shown that this level of control is technically or economically unfeasible for the emission unit in question, then the next most stringent level of control is determined and similarly evaluated. This process continues until the BACT level under consideration cannot be eliminated by any substantial or unique technical, environmental, or economic objections.

The air pollutant emissions from a facility can typically be grouped into categories based upon the control equipment and techniques that are available to control emissions from these emission units. Using this approach, the emissions can generally be classified as indicated below:

- **Fluorides** (HF, F, SiF₃). Controlled generally by scrubbing with pond water.
- **Particulate Matter** (PM, PM₁₀). Controlled generally by wet scrubbing or filtration.
- **Combustion Products** (SO₂, NO_x, PM). Controlled generally by good combustion of clean fuels.
- **Products of Incomplete Combustion** (CO, VOC). Controlled generally by proper combustion.

Grouping the pollutants in this manner facilitates the BACT analysis because it enables the equipment available to control the type or group of pollutants emitted and the corresponding energy, economic, and environmental impacts to be examined on a common basis. Although all of the pollutants addressed in the BACT analysis may be subject to a specific emission limiting

APPENDIX BD
BEST AVAILABLE CONTROL TECHNOLOGY DETERMINATION (BACT)

standard as a result of PSD review, the control of "non-regulated" air pollutants is considered in imposing a more stringent BACT limit on a "regulated" pollutant (i.e., PM, SO₂, H₂SO₄, fluorides, etc.), if a reduction in "non-regulated" air pollutants can be directly attributed to the control device selected as BACT for the abatement of the "regulated" pollutants.

BACT LIMITS PROPOSED BY APPLICANT:

POLLUTANT	EMISSION LIMIT	LIMIT BASIS	CONTROL TECHNOLOGY
F (MAP)	1.18 lb/hr	0.037 lb/ton P ₂ O ₅ input	Two-stage scrubbers using acid/pond water
F (DAP)	1.04 lb/hr	0.037 lb/ton P ₂ O ₅ input	Two-stage scrubbers using acid/pond water
PM (Plant)	10.2 lb/hr	0.17 lb/ton product	Cyclones and scrubbers using acid/pond water
PM(Loadout)	5% opacity	Use Baghouse or Oiling	Baghouse or Product Oiling

BACT POLLUTANT ANALYSIS

GASEOUS FLUORIDES (F)

Fluoride-containing gases including hydrogen fluoride (HF) and silicon tetrafluoride (SiF₄) are evolved during the exothermic reaction between ammonia and phosphoric acid that occurs in the reactor and to a lesser extent in the granulator. Since the vent gases from the reactor and granulator contain ammonia in high concentrations, the first scrubbing stage uses a phosphoric acid stream as the scrubbing medium for recovery of ammonia so that it is recycled back to the process. A final stage of pond water scrubbing removes most of the fluoride evolved from the process as well as that which is stripped out of the phosphoric acid in the first stage scrubber.

Additional fluoride and ammonia emissions are generated in the dryer and are controlled by a separate scrubbing system from the reactor and granulator. Gaseous fluoride and ammonia emissions from the cooler are relatively low and therefore do not require special controls. The applicant has proposed that the existing emission control equipment be considered as BACT.

PARTICULATE MATTER (PM/PM₁₀) AND VISIBLE EMISSIONS (VE)

The sources of PM and VE, consisting primarily of MAP/DAP dust along with relatively small amounts of ammonium fluoride and other related compounds, are the granulator, dryer, cooler, screens and mills. These emissions are controlled by cyclones which remove most of the larger particles with the remainder controlled by wet scrubbers. The applicant has proposed that the existing control equipment be considered as BACT.

APPENDIX BD
BEST AVAILABLE CONTROL TECHNOLOGY DETERMINATION (BACT)

BACT DETERMINATION BY THE DEPARTMENT:

Based on the information provided by the applicant and other information available to the Department, the following emission limits are established employing the top-down BACT approach.

POLLUTANT	EMISSION LIMIT	LIMIT BASIS
F (MAP)	1.18 lb/hr	0.037 lb/ton P ₂ O ₅ input
F (DAP)	1.04 lb/hr	0.037 lb/ton P ₂ O ₅ input
PM (Plant)	10.2 lb/hr	0.17 lb/ton product
PM(Loadout)	5% opacity	Use Baghouse or Oiling

FLUORIDES

The top-down BACT determination for fluorides identified the control technologies listed below starting with the most stringent:

1. Packed scrubber using once-through fresh water.
2. Packed scrubber using neutralized water from a dedicated pond (fresh water makeup).
3. Packed scrubber using process cooling pond water.
4. Existing venturi scrubber using pond water.

Use of once-through fresh water would achieve the highest level of fluoride removal but this option is not practical for operations where water conservation is required and plant water balance problems would be created.

Option 2 is possible, however, the cost would be expected to exceed even that for a packed scrubber, as discussed below for Option 3.

Option 3 is possible, however, the costs need to be considered. The following cost estimate is based on information submitted by the applicant.

<u>ITEM</u>	<u>COST</u>
Packed Scrubber (TIC)	\$ 493,240
Annual Costs:	
Indirect (TIC x 0.1715)	\$ 84,600
Operation & Maintenance (@ 12% of TIC)	\$ 60,000
Total Annual Cost	\$ 144,600

APPENDIX BD
BEST AVAILABLE CONTROL TECHNOLOGY DETERMINATION (BACT)

By conservatively assuming that all the potential fluoride emissions from the plant can be controlled, the emission reduction would be 5.2 tpy.

The cost of additional control:

Total Cost = \$ 144,600 / 5.2 tpy
= \$ 27,800 / ton F removed

This figure is sufficiently high to rule out Option 3, and similarly Option 2. Therefore, Option 4 is determined by the top-down approach as the basis for the fluoride BACT emission limit.

The BACT limit for MAP/DAP, at 0.037 lb/ton P₂O₅ input, is the most stringent fluoride emission limit established by FDEP for such a plant. The recent operation data provide reassurance to FDEP that this stringent emission limit will continue to be met by the plant.

PARTICULATE MATTER (PM/PM₁₀) AND VISIBLE EMISSIONS (VE)

The top-down approach for control of PM/PM₁₀ and VE identified the following BACT options:

1. High-energy (>30 in.w.c.) venturi scrubber or ionizing wet scrubber.
2. Medium-energy (12-30 in.w.c.) venturi scrubber.

Characteristic of this process is that the first stage of scrubbing (acid scrubber) is primarily for ammonia recovery while the primary function of the second stage scrubber is fluoride removal, leaving PM/PM₁₀ control with a secondary priority from a design standpoint. Since recovery of ammonia takes place by chemical reaction with the acid scrubbing medium, the required removal can be effected using a medium energy scrubber which also removes up to 85% of the product dust escaping the cyclones. In this case the tail gas venturi scrubber is a medium energy device that efficiently controls particulate matter.

If maximum PM/PM₁₀ removal is considered to be a design parameter, the cost effectiveness of adding high energy scrubbing to the existing system (Option 1), assuming replacement of the existing venturi scrubbers with high pressure drop units, the costs are expected to be in the range of \$20,000 per ton, due to the high cost of installing new ducts, pumps, fans, and instrumentation for retrofitting an existing system, and the high energy costs. Consequently, Option 1 is not feasible for this project.

Option 2, which reflects the existing venturi scrubber arrangement, is determined to be BACT. The corresponding particulate matter emission limit of 0.17 lb/ton of product is the most stringent limit established by FDEP for such a plant. The recent operation data provide reassurance to FDEP that this stringent emission limit will continue to be met by the plant.

APPENDIX BD
BEST AVAILABLE CONTROL TECHNOLOGY DETERMINATION (BACT)

The BACT for the product loadout is determined to be the continued use of a baghouse or product oiling, resulting in visible emissions of 5% opacity or less. This emission limitation is in line with limits established by FDEP for similar operations.

COMPLIANCE

Compliance with the fluoride limit shall be in accordance with the EPA Reference Method 13A or 13B as contained in 40 CFR 60, Appendix A.

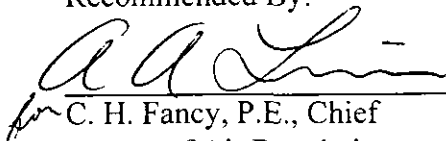
Compliance with the PM/PM₁₀ limit shall be in accordance with the EPA Reference Method 5 as contained in 40 CFR 60, Appendix A.

Compliance with the visible emission limit shall be in accordance with the EPA Reference Method 9 as contained in 40 CFR 60, Appendix A.

DETAILS OF THE ANALYSIS MAY BE OBTAINED BY CONTACTING:

Syed Arif, P.E., Permit Engineer, New Source Review Section
Department of Environmental Protection
Bureau of Air Regulation
2600 Blair Stone Road
Tallahassee, Florida 32399-2400

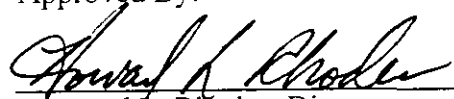
Recommended By:



C. H. Fancy, P.E., Chief
Bureau of Air Regulation

3/12/02
Date: _____

Approved By:



Howard L. Rhodes, Director
Division of Air Resources Management

3/15/02
Date: _____

APPENDIX GC
GENERAL PERMIT CONDITIONS [RULE 62-4.160, F.A.C.]

- G.1 The terms, conditions, requirements, limitations, and restrictions set forth in this permit are "Permit Conditions" and are binding and enforceable pursuant to Sections 403.161, 403.727, or 403.859 through 403.861, Florida Statutes. The permittee is placed on notice that the Department will review this permit periodically and may initiate enforcement action for any violation of these conditions.
- G.2 This permit is valid only for the specific processes and operations applied for and indicated in the approved drawings or exhibits. Any unauthorized deviation from the approved drawings or exhibits, specifications, or conditions of this permit may constitute grounds for revocation and enforcement action by the Department.
- G.3 As provided in Subsections 403.087(6) and 403.722(5), Florida Statutes, the issuance of this permit does not convey and vested rights or any exclusive privileges. Neither does it authorize any injury to public or private property or any invasion of personal rights, nor any infringement of federal, state or local laws or regulations. This permit is not a waiver or approval of any other Department permit that may be required for other aspects of the total project which are not addressed in the permit.
- G.4 This permit conveys no title to land or water, does not constitute State recognition or acknowledgment of title, and does not constitute authority for the use of submerged lands unless herein provided and the necessary title or leasehold interests have been obtained from the State. Only the Trustees of the Internal Improvement Trust Fund may express State opinion as to title.
- G.5 This permit does not relieve the permittee from liability for harm or injury to human health or welfare, animal, or plant life, or property caused by the construction or operation of this permitted source, or from penalties therefore; nor does it allow the permittee to cause pollution in contravention of Florida Statutes and Department rules, unless specifically authorized by an order from the Department.
- G.6 The permittee shall properly operate and maintain the facility and systems of treatment and control (and related appurtenances) that are installed or used by the permittee to achieve compliance with the conditions of this permit, as required by Department rules. This provision includes the operation of backup or auxiliary facilities or similar systems when necessary to achieve compliance with the conditions of the permit and when required by Department rules.
- G.7 The permittee, by accepting this permit, specifically agrees to allow authorized Department personnel, upon presentation of credentials or other documents as may be required by law and at a reasonable time, access to the premises, where the permitted activity is located or conducted to:
- (a) Have access to and copy and records that must be kept under the conditions of the permit;
 - (b) Inspect the facility, equipment, practices, or operations regulated or required under this permit, and,
 - (c) Sample or monitor any substances or parameters at any location reasonably necessary to assure compliance with this permit or Department rules.
- Reasonable time may depend on the nature of the concern being investigated.
- G.8 If, for any reason, the permittee does not comply with or will be unable to comply with any condition or limitation specified in this permit, the permittee shall immediately provide the Department with the following information:
- (a) A description of and cause of non-compliance; and
 - (b) The period of noncompliance, including dates and times; or, if not corrected, the anticipated time the non-compliance is expected to continue, and steps being taken to reduce, eliminate, and prevent recurrence of the non-compliance.



APPENDIX GC
GENERAL PERMIT CONDITIONS [RULE 62-4.160, F.A.C.]

The permittee shall be responsible for any and all damages which may result and may be subject to enforcement action by the Department for penalties or for revocation of this permit.

- G.9 In accepting this permit, the permittee understands and agrees that all records, notes, monitoring data and other information relating to the construction or operation of this permitted source which are submitted to the Department may be used by the Department as evidence in any enforcement case involving the permitted source arising under the Florida Statutes or Department rules, except where such use is prescribed by Sections 403.73 and 403.111, Florida Statutes. Such evidence shall only be used to the extent it is consistent with the Florida Rules of Civil Procedure and appropriate evidentiary rules.
- G.10 The permittee agrees to comply with changes in Department rules and Florida Statutes after a reasonable time for compliance, provided, however, the permittee does not waive any other rights granted by Florida Statutes or Department rules.
- G.11 This permit is transferable only upon Department approval in accordance with Florida Administrative Code Rules 62-4.120 and 62-730.300, F.A.C., as applicable. The permittee shall be liable for any non-compliance of the permitted activity until the transfer is approved by the Department.
- G.12 This permit or a copy thereof shall be kept at the work site of the permitted activity.
- G.13 This permit also constitutes:
- (a) Determination of Best Available Control Technology (*X*)
 - (b) Determination of Prevention of Significant Deterioration (*X*); and
 - (c) Compliance with New Source Performance Standards (*X*).
- G.14 The permittee shall comply with the following:
- (a) Upon request, the permittee shall furnish all records and plans required under Department rules. During enforcement actions, the retention period for all records will be extended automatically unless otherwise stipulated by the Department.
 - (b) The permittee shall hold at the facility or other location designated by this permit records of all monitoring information (including all calibration and maintenance records and all original strip chart recordings for continuous monitoring instrumentation) required by the permit, copies of all reports required by this permit, and records of all data used to complete the application or this permit. These materials shall be retained at least three years from the date of the sample, measurement, report, or application unless otherwise specified by Department rule.
 - (c) Records of monitoring information shall include:
 - 1. The date, exact place, and time of sampling or measurements;
 - 2. The person responsible for performing the sampling or measurements;
 - 3. The dates analyses were performed;
 - 4. The person responsible for performing the analyses;
 - 5. The analytical techniques or methods used; and
 - 6. The results of such analyses.
- G.15 When requested by the Department, the permittee shall within a reasonable time furnish any information required by law which is needed to determine compliance with the permit. If the permittee becomes aware that relevant facts were not submitted or were incorrect in the permit application or in any report to the Department, such facts or information shall be corrected promptly.

Memorandum

Florida Department of Environmental Protection

TO: Howard L. Rhodes
THRU: Clair Fancy 
THRU: Al Linero 
FROM: Syed Arif/Teresa Heron
DATE: March 15, 2002
SUBJECT: U.S. Agri-Chemicals Corporation (USAC)
DEP File No. 1050051-015-AC; PSD-FL-321

Attached for your approval and signature is the final construction permit to increase the production rate of the granular MAP/DAP Plant from 50 tons per hour (TPH) to 60 TPH at its existing chemical complex at Ft. Meade, Polk County.

The project is subject to Prevention of Significant Deterioration (PSD) review for F, PM, and PM₁₀ in accordance with 62-212.400, F.A.C. A Best Available Control Technology (BACT) determination is part of the review required by Rules 62-212.400 and 62-296, F.A.C.

The facility proposes to use the existing scrubbers as BACT for the MAP/DAP Plant with a fluoride emissions limit of 0.037 lb/ton P₂O₅ input and a particulate matter emissions limit of 0.17 lb/ton product. These emission limits represent some of the most stringent limitations imposed on MAP/DAP plants in the US.

The Public Notice was published on February 8, 2002 in the Lakeland Ledger. No comments were received.

I recommend your approval and signature.

AAL/sa

Attachments



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION 4
ATLANTA FEDERAL CENTER
61 FORSYTH STREET
ATLANTA, GEORGIA 30303-8960

MAR 11 2002

RECEIVED

MAR 14 2002

4APT-APB

C. H. Fancy, P.E., Chief
Bureau of Air Regulation
Florida Department of Environmental Protection
Twin Towers Office Building
2600 Blair Stone Road
Tallahassee, Florida 32399-2400

BUREAU OF AIR REGULATION

Dear Mr. Fancy:

Thank you for sending the prevention of significant deterioration (PSD) preliminary determination and draft PSD permit (PSD-FL-321) dated January 25, 2002, for a modification of the US Agri-Chemicals phosphate fertilizer plant in Ft. Meade, Florida. The proposed project involves an increase in the production rate of granular monammonium phosphate and diammonium phosphate (MAP/DAP) fertilizer. PSD review is required for increased emissions of particulate matter (PM/PM₁₀) and fluorides.

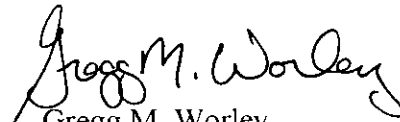
We have the following comments on the preliminary determination and associated permit application:

1. If not already done, we ask that the Florida Department of Environmental Protection (FDEP) confirm that the increase in MAP/DAP production will not result in increased utilization of (and increased emissions from) the sulfuric acid and phosphoric acid manufacturing areas of the Ft. Meade facility.
2. On page 23 of the permit application, the applicant refers to the "presumed BACT guideline cost of around \$10,000 per ton of fluorides removed." As you know, the U.S. Environmental Protection Agency does not subscribe to the concept of a single bright line cost effectiveness value for use in a best available control technology (BACT) evaluation.
3. The applicant did not provide an analysis of potential vegetation and soils impacts due to increased fluorides emissions. Although we recognize that national ambient air quality standards do not exist for fluorides, ample reference information exists for assessing the potential impact of fluorides emissions on vegetation.
4. We would not normally consider as adequate the analysis made by the applicant and by FDEP regarding the cost of neutralized water scrubbing for fluorides control. On page 24

of the permit application, the applicant states that “[t]reated water recirculation is rejected as BACT based on costs evaluated for a similar project.” On page BD-4 of the preliminary determination, FDEP states that “the cost would be expected to exceed even that for a packed scrubber.” With respect to the applicant’s statement, the cost data for the similar project is not provided and neither is information to confirm that the other project is in fact similar. With respect to FDEP’s statement, no supporting information is provided for the expectation expressed. However, we are willing to accept that FDEP’s experience with phosphate industry controls provides a basis for concluding that the cost of treated water scrubbing exceeds that for pond water scrubbing.

If you have any questions concerning the comments in this letter, please contact Jim Little at (404) 562-9118.

Sincerely,

A handwritten signature in black ink that reads "Gregg M. Worley". The signature is written in a cursive style with a large initial "G".

Gregg M. Worley

Chief

Air Permits Section