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1. Article Addressed to:

Mr. David Jellerson
Environmental Manager
Cargill Fertilizer, Inc.
8813 U.S. Highway 41 South
Riverview, FL 33569

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STATE OF FLORIDA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
NOTICE OF FINAL PERMIT

In the Matter of an
Application for Permit

Mr. David Jellerson
Cargill Fertilizer, Inc.
8813 U.S. Highway 41 South
Riverview, Florida 33569

DEP File No. 1050046-015-AC
PSD-FL-322

Enclosed is the FINAL Permit Number PSD-FL-322 for improving the energy efficiency of the plant and product quality, as well as providing more product flexibility at the existing No. 4 Diammonium Phosphate Plant in Bartow, 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 3/20/02 to the person(s) listed:

David Jellerson, Cargill Fertilizer, Inc.*
Debra Waters, Cargill – Bartow Plant
Gregg Worley, EPA
John Bunyak, NPS
Bill Thomas, DEP-SWD
David Buff, P.E., Golder Associates, Inc.

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 20, 2002
(Clerk) (Date)

FINAL DETERMINATION

Cargill Fertilizer, Inc.

Permit No. 1050046-015-AC, PSD-FL-322

Bartow Plant

An Intent to Issue an air construction permit to Cargill Fertilizer, Inc. to improve the energy efficiency of the plant and product quality, as well as provide more product flexibility at its existing No. 4 Diammonium Phosphate Plant in Polk County, was distributed on February 5, 2002. The Notice of Intent was published in the Lakeland Ledger on February 7, 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, the EPA Region 4 office or the Fish and Wildlife Service.

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

Department of Environmental Protection

Jeb Bush
Governor

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

David B. Struhs
Secretary

PERMITTEE:

Cargill Fertilizer, Inc.
3200 Highway 60 West
Bartow, Florida 33830

File No.	1050046-015-AC
Permit No.	PSD-FL-322
SIC No.	2874, 2819
Project:	No. 4 Fertilizer (DAP) Plant Modification
Expires:	October 1, 2006

Authorized Representative:

David Jellerson
Environmental Manager

PROJECT AND LOCATION:

Permit for modification of the No. 4 Fertilizer (DAP) Plant to improve the energy efficiency of the plant and product quality, as well as provide more product flexibility. The project is located at the Cargill Fertilizer facility, 3200 Highway 60 West, Bartow, Polk County. UTM coordinates are Zone 17; 409.8 km E; 3086.7 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

FACILITY DESCRIPTION

Cargill Fertilizer, Inc. operates a phosphate fertilizer manufacturing facility located west of Bartow in Polk County, Florida. The plant consists of molten sulfur and rock handling systems, phosphoric acid, sulfuric acid, and fertilizer plants, and fertilizer shipping plants. The company has applied to modify its existing No. 4 DAP Plant to improve the energy efficiency of the plant and product quality, as well as provide more product flexibility. As a result of these changes, increases in the actual particulate matter (PM), PM with an aerodynamic diameter of 10 microns or less (PM_{10}), sulfur dioxide (SO_2), fluoride (F), nitrogen oxides (NO_x), sulfuric acid mist (SAM), carbon monoxide (CO), and volatile organic compounds (VOC) emissions will occur.

REGULATORY CLASSIFICATION

The Cargill Bartow Plant is classified as a "Major or Title V Source" per Rule 62-210.200, F.A.C., because it has the potential to emit at least 100 tons per year of PM when potential fugitive emissions are included with potential controlled emissions.

Phosphate rock processing plants are listed as a Major Facility Category in Table 62-212.400-1, F.A.C., "Major Facility Categories." Therefore, stack and fugitive emissions of over 100 TPY of a regulated pollutant are sufficient to classify the installation as a "Major Facility" per the definitions in Rule 62-210.200, F.A.C., subject to the Significant Emission Rates given in Table 62-212.400-2, F.A.C. and the requirements of Rule 62-212.400, F.A.C., Prevention of Significant Deterioration (PSD) and Best Available Control Technology (BACT).

PERMIT SCHEDULE:

- 08-20-01: Date of Receipt of Application
- 01-15-02: Application deemed complete
- 02-05-02: Intent issued
- 02-07-02: Notice of Intent published in Lakeland Ledger

RELEVANT DOCUMENTS:

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

- Application received August 20, 2001
- Department's letters dated October 12, 2001 and October 19, 2001
- Applicant's submittal received December 17, 2001 and January 15, 2002
- National Park Service's letter dated October 11, 2001
- Technical Evaluation and Preliminary Determination dated January 30, 2002
- Best Available Control Technology determination (issued concurrently with permit)

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. 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 **October 1, 2006** [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)].
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.]

SUBSECTION A. COMMON CONDITIONS

The Specific Conditions listed in this section apply to the following emission unit:

EMISSION UNIT NO.	EMISSION UNIT DESCRIPTION
021	No. 4 Fertilizer (DAP) Plant
001	No. 3 Fertilizer Plant

1. Unless otherwise indicated, the modification/construction and operation of No. 4 Fertilizer Plant and the No. 3 Fertilizer Plant shall be in accordance with the capacities and specifications stated in the application. **[Rule 62-210.300, F.A.C.]**
2. Before this construction permit expires, and annually, the subject emissions units shall be tested for compliance with the applicable emission limits. For the duration of all tests the emission units 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.]**
3. In order to document continuing compliance with the maximum sulfur content requirement, the permittee shall maintain a record of the sulfur content of the fuel oil received for use in the product dryer. These records may be based on vendor supplied information or analysis of samples taken by the permittee in accordance with Rule 62-297.440, F.A.C. **[Rule 62-4.070(3), F.A.C.]**
4. The Department's Southwest District office shall be notified in writing at least 15 days prior to source testing. 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.]**
5. 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, or as otherwise specifically authorized by the Department **[Rules 62-204.800 and 62-297.310(7)(c), F.A.C.]**
6. 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.]**
7. 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.]**
8. 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.]**

SUBSECTION B. No. 4 FERTILIZER PLANT

The Specific Conditions listed in this section apply to the following emission unit:

EMISSION UNIT NO.	EMISSION UNIT DESCRIPTION
021	No. 4 Fertilizer Plant

1. The maximum production rate for the No. 4 Fertilizer Plant shall not exceed 261 tons of DAP or MAP per hour (daily average basis; 120 TPH @ 100% P_2O_5) and 2,170,212 tons of DAP or MAP per year. **[Rule 62-210.200, F.A.C. and Permit No. 1050046-003-AV]**
2. The maximum heat input rate to the rotary dryer shall not exceed 40 MMBtu/hr (daily average basis). **[Rules 62-4.160(2) and 62-210.200, F.A.C. and Permit No. 1050046-003-AV]**
3. The rotary dryer shall be fired with natural gas only, except that No. 2 fuel oil with a maximum sulfur content of 0.25% by weight is allowed as a back-up fuel. No. 2 fuel oil usage shall not exceed 2.2 million gallons per year in the No. 4 Fertilizer Plant. No. 2 fuel oil usage for the No. 3 and No. 4 Fertilizer Plants combined shall not exceed 2.2 million gallons per year. **[Rule 62-210.200, F.A.C.]**
4. The hours of operation for the No. 4 Fertilizer Plant shall not exceed 8,500 hours in any 12 consecutive month period. **[Rule 62-210.200, F.A.C. and Permit No. 1050046-003-AV]**
5. Emissions from the No. 4 Fertilizer Plant shall not exceed the following **[Rule 62-212.400, F.A.C.]**:

Pollutant	Maximum Allowable Emissions		
	lb/ton P_2O_5 input	lb/hr	TPY
PM	0.15	18.0	76.5
Fluorides	0.04	4.8	20.4

6. Visible emissions from the No. 4 Fertilizer Plant shall not exceed 10% opacity. **[Permit No. 1050046-003-AV]**
7. The compliance test procedures for particulate matter shall be in accordance with EPA Reference Method 5 as published in 40 CFR 60, Appendix A. **[Rule 62-297.410(5), F.A.C.]**
8. The compliance test procedures for fluorides shall be in accordance with EPA Reference Methods 13A or 13B as published in 40 CFR 60, Appendix A. **[Rule 62-297.410(13), F.A.C.]**
9. The compliance test procedures for visible emissions shall be in accordance with EPA Reference Method 9 as published in 40 CFR 60, Appendix A. **[Rule 62-297.410(9), F.A.C.]**

SUBSECTION C. No. 3 FERTILIZER PLANT

The Specific Conditions listed in this section apply to the following emission unit:

EMISSION UNIT NO.	EMISSION UNIT DESCRIPTION
001	No. 3 Fertilizer Plant

1. The rotary dryer shall be fired with natural gas only, except that No. 2 fuel oil with a maximum sulfur content of 0.25% by weight is allowed as a back-up fuel. No. 2 fuel oil usage shall not exceed 2.2 million gallons per year in the No. 3 Fertilizer Plant. No. 2 fuel oil usage for the No. 3 and No. 4 Fertilizer Plants combined shall not exceed 2.2 million gallons per year. **[Rule 62-210.200, F.A.C.]**

APPENDIX BD
BEST AVAILABLE CONTROL TECHNOLOGY DETERMINATION (BACT)

Cargill Fertilizer, Inc.
No. 4 Fertilizer (DAP) Plant Modification
PSD-FL-322/1050046-015-AC
Bartow, Polk County

Cargill Fertilizer, Inc. has applied to modify the No. 4 Fertilizer Plant at its phosphate fertilizer manufacturing facility located west of Bartow in Polk County, Florida. The company has applied to modify its existing No. 4 DAP Plant to improve the energy efficiency of the plant and product quality, as well as provide more product flexibility. As a result of these changes, increases in the actual particulate matter (PM), PM with an aerodynamic diameter of 10 microns or less (PM_{10}), sulfur dioxide (SO_2), fluoride (F), nitrogen oxides (NO_x), sulfuric acid mist (SAM), carbon monoxide (CO), and volatile organic compounds (VOC) emissions will occur.

The increases in emissions of F, NO_X, PM, and PM_{10} will exceed the significant emission rates listed in Table 212.400-2 of Rule 62-212.400, Florida Administrative Code (F.A.C.). The project is therefore subject to Prevention of Significant Deterioration (PSD) review for F, NO_x, PM, and PM_{10} 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.

DATE OF RECEIPT OF COMPLETE BACT APPLICATION:

The original application received on August 20, 2001 was complete on January 15, 2002.

BACT DETERMINATION PROCEDURE:

In accordance with Chapter 62-212.400, 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 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 this facility can 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 be classified as indicated below:

- **Fluorides** (primarily HF). Controlled generally by scrubbing with pond water.
- **Particulate Matter** (PM, PM_{10}). Controlled generally by wet scrubbing or filtration.
- **Combustion Products** (SO_2, NO_x). NO_X controlled generally by good combustion of clean fuels. SO_2 controlled generally by scrubbing when quantities are substantial.
- **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 pollutant control equipment 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 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, SO_2, H_2SO_4, 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.

In the case of the proposed project at Cargill, annual emissions of F, NO_x, PM, and PM_{10} are above significant emission rates triggering review for these pollutants. Therefore, since the proposed project involves physical modification to the plant the BACT analysis will address emissions of F, NO_x, PM, and PM_{10}.

BACT EMISSION LIMITS PROPOSED BY APPLICANT:

POLLUTANT	EMISSION LIMIT	LIMIT BASIS	CONTROL TECHNOLOGY
PM/PM_{10}	18.0 lb/hr	0.15 lb/ton P_2O_5 input	(2) Venturi scrubbers and (1) Cross-Flow scrubber
F	4.8 lb/hr	0.04 lb/ton P_2O_5 input	(2) Tailgas scrubbers and (1) Pre-scrubber
NO_x	N/A	N/A	Good combustion practices

BACT ANALYSIS

The No. 4 DAP Plant is currently equipped with two venturi scrubbers, a wet cross-flow scrubber, and two tailgas scrubbers. The two primary venturi scrubbers are of similar design, as are the two tailgas scrubbers. One venturi scrubber, the RGV scrubber, controls PM emissions and recovers ammonia from the exhaust gases of the reactor, granulator, and equipment vents.

The second controls the dryer. The wet cross-flow scrubber controls PM emissions from the cooler. One tailgas scrubber controls fluoride emissions from the reactor, granulator, and equipment vents, while the second controls fluoride emissions from the dryer. Exhaust gases exit through a common stack for the No. 4 DAP Plant. Operating parameters for these scrubbers are as follows.

Pollution Control Equipment	Parameter	Minimum Limitations [a]
Cooler Scrubber	Flow	250 gpm
	Pressure Drop	1" H_2O
Dryer Tailgas Scrubber	Flow	1,100 gpm
	Pressure Drop	4" H_2O
RGV Tailgas Scrubber	Flow	1,600 gpm
	Pressure Drop	4" H_2O
Dryer Venturi Scrubber	Flow	250 gpm
	Pressure Drop	4" H_2O
RGV Venturi Scrubber	Flow	900 gpm
	Pressure Drop	13" H_2O

[a] Based on 3-hour averaging times.

Currently, the scrubber systems are achieving lower emission rates than required by Title V operating Permit No. 1050046-003-AV. Emissions from the common stack range from 1.07 to 9.69 lb/hr for PM and 0.60 to 4.73 lb/hr for F. These are equivalent to 0.01 to 0.099 lb/ton of P_2O_5 input for PM, and 0.006 to 0.050 lb/ton P_2O_5 input for F.

The proposed BACT for PM/PM_{10} for the modified No. 4 Fertilizer Plant is the proposed reconfigured control system consisting of the following:

- A new pre-scrubber for the reactor and granulator which will utilize recirculating phosphoric acid as the scrubbing medium;
- A new RGV venturi scrubber which will utilize recirculating phosphoric acid;
- A new RGV tailgas scrubber using once through pond water;
- An upgraded cooler scrubber; and
- The existing dryer venturi scrubber and dryer tailgas scrubber.

A review of previous BACT determinations for PM emissions from GTSP and ammoniated phosphate plants (MAP and DAP) was conducted. The results of this show that the previous BACT determinations were all based on wet scrubber technology. This demonstrates that the proposed combination of a prescrubber, followed by a venturi scrubber, followed by packed tower tailgas scrubbers, is the best control technology for application on the No. 4 Fertilizer Plant. Previous BACT determinations have resulted in PM emission limits ranging from 0.18 to 0.41 lb of PM per ton of P_2O_5 input. Cargill's proposed PM/PM_{10} emission rate for the No. 4 Fertilizer Plant of 18.0 lb/hr is equivalent to 0.15 lb/ton P_2O_5 input and 0.069 lb/ton of DAP produced. This proposed limit is lower than the previous determinations, based on the actual emissions measured from the common plant stack. The proposed limit is justified to provide certainty that the proposed emission level will be achievable on a continuous basis.

A previous BACT determination for a DAP plant (IMC-Agrico New Wales; PSD-FL-241) addressed alternatives for PM/PM_{10} control. The alternatives addressed consisted of a high-energy venturi scrubber and an existing medium-energy venturi scrubber. The high costs of adding a high-energy venturi scrubbing system was deemed economically infeasible with incremental cost effectiveness ranging from $50,000 to $75,000 per ton of PM/PM_{10} removed. As a result, the high-energy venturi scrubber option was found to be infeasible, and the existing medium-energy venturi scrubber was selected as BACT.

Cargill is proposing a medium-energy wet scrubber and medium-energy venturi scrubbers in its No. 4 Fertilizer Plant. Similar to the above analysis, replacing the existing scrubbers with higher energy venturi scrubbers would not be cost effective. Therefore, the existing and proposed medium-energy venturi scrubbers represent BACT for the Cargill No. 4 Fertilizer Plant. Cargill is proposing to lower the current allowable of 22.8 lb/hr to 18.0 lb/hr, considering the proposed modifications.

BACT for fluorides for the modified No. 4 Fertilizer Plant is the same reconfigured control system proposed for PM/PM_{10} emissions. A review of previous BACT determinations for F emissions from MAP and DAP plants was conducted. The results show that the previous BACT determinations were all based on wet scrubber technology. This demonstrates that the existing and proposed packed tower tailgas scrubbers are the best control technology for application on the No. 4 Fertilizer Plant. Previous BACT determinations resulted in emission limits ranging from 0.0417 to 0.06 lb/ton P_2O_5 input for F. Cargill's proposed fluoride emission rate for the No. 4 Fertilizer Plant is 4.8 lb/hr, equivalent to 0.04 lb/ton P_2O_5 input.

A previous BACT determination for a DAP plant (IMC-Agrico New Wales) addressed alternatives for F control. The alternatives included a packed scrubber using either once-through fresh water, neutralized water from a dedicated pond (fresh water makeup), or process cooling pond water. The first option was dismissed due to concern over fresh water usage and plant water balance problems. The second option was dismissed based on economics, with the cost effectiveness estimated at $14,000 per ton of F removed. In Cargill's case, the first two options can be dismissed based on similar considerations. This leaves the third option, using process cooling pond water, as BACT.

The No. 4 Fertilizer Plant is a small source of NO_x due to the fuel combustion in the dryer. Good combustion practices and low sulfur content oil (which has a low nitrogen content) constitute BACT for NO_x for this source.

BACT DETERMINATION BY THE DEPARTMENT:

Based on the information provided by the applicant and other information available to the Department, the Department agrees with the emission limit proposed by the applicant and establishes the following emission limits as BACT for this project:

APPENDIX BD
BEST AVAILABLE CONTROL TECHNOLOGY DETERMINATION (BACT)

POLLUTANT	EMISSION LIMIT	LIMIT BASIS	CONTROL TECHNOLOGY
PM/PM_{10}	18.0 lb/hr	0.15 lb/ton P_2O_5 input	(2) Venturi scrubbers and (1) Cross-Flow scrubber
F	4.8 lb/hr	0.04 lb/ton P_2O_5 input	(2) Tailgas scrubbers and (1) Pre-scrubber
NOx	N/A	N/A	Good combustion practices

COMPLIANCE

Compliance with the emission limits shall be in accordance with the following EPA Reference Methods as contained in 40 CFR 60, Appendix A or as otherwise approved by the Department:

EMISSION UNIT	POLLUTANT	EPA REFERENCE METHOD
No. 4 Fertilizer Plant	PM/PM_{10}	5
	FL	13A or 13B
	VE	9

DETAILS OF THE ANALYSIS MAY BE OBTAINED BY CONTACTING:

Syed Arif, P.E. II
New Source Review Section
Department of Environmental Protection
Bureau of Air Regulation
2600 Blair Stone Road, MS 5505
Tallahassee, Florida 32399-2400

Recommended By:

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

3/19/02
Date:

Approved By:

Howard L. Rhodes, Director
Division of Air Resources Management

3/19/02
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.

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 extend 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.

Florida Department of Environmental Protection

Memorandum

TO: Howard L. Rhodes

THRU: Clair Fancy

THRU: Al Linero

FROM Syed Arif/Teresa Heron

DATE: March 19, 2002

SUBJECT: Cargill Fertilizer, Inc.
DEP File No. 1050046-015-AC; PSD-FL-322

Attached for your approval and signature is the final construction permit to improve the energy efficiency of the plant and product quality, as well as provide more product flexibility at its existing No. 4 Diammonium Phosphate Plant located in Bartow, Polk County.

The project is subject to Prevention of Significant Deterioration (PSD) review for F, PM/PM_{10} and NO_x 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 proposed quality improvements will be accomplished by implementing changes to the reactor, granulator, and cooling and screening systems. Specific changes will include installation of a pipe reactor at the granulator inlet, improvements to the dryer capacity, and installation of additional product screening and cooling capacity. Product flexibility enhancements will enable the plant to produce a wider range of ammoniated phosphate-based nutrient products (e.g., diammonium phosphate and monoammonium phosphate).

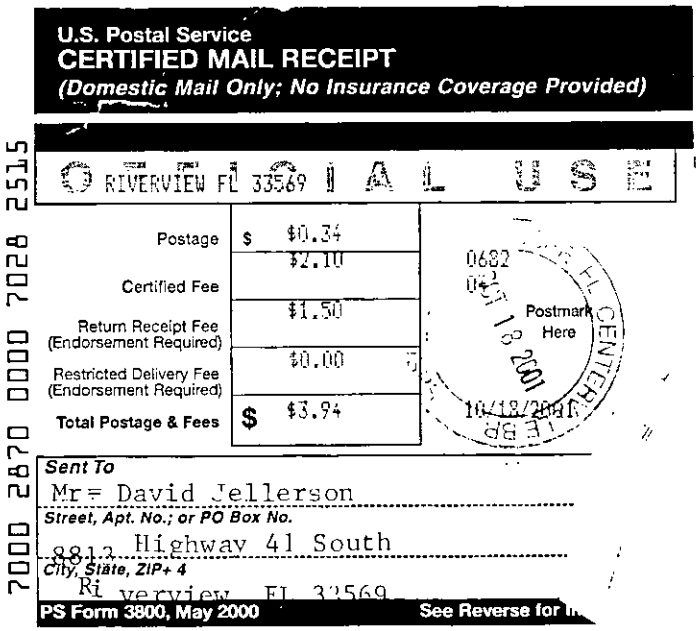
The proposed modifications to the No. 4 DAP Plant will not result in an increase in the maximum hourly or annual production rates. The modified plant will be renamed the "No. 4 Fertilizer Plant". The Department proposes the continued use of the existing scrubbing system with enhancements to the primary acid scrubbers. BACT limitations for fluorides and particulate matter have been determined to be 0.04 lb/ton P_2O_5 input and 0.15 lb/ton P_2O_5 input respectively for the No. 4 DAP Plant. Good combustion practices and low sulfur content oil (which has a low nitrogen content) constitute BACT for NO_x for this source.

The Public Notice was published on February 7, 2002 in the Lakeland Ledger. No comments were received.

I recommend your approval and signature.

AAL/sa

Attachments



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