

Florida Department of Environmental Regulation

Twin Towers Office Bldg. • 2600 Blair Stone Road • Tallahassee, Florida 32399-2400

Lawton Chiles, Governor

Carol M. Browner, Secretary

October 14, 1991

CERTIFIED MAIL-RETURN RECEIPT REQUESTED

Mr. Ozzie Morris
Environmental Manager
Cargill Fertilizer, Inc.
8813 Highway 41 South
Riverview, Florida 33569

Dear Mr. Morris:

Attached is one copy of the Technical Evaluation and Preliminary Determination and proposed permit for Cargill Fertilizer, Inc. to increase the production rate of the No. 5 Diammonium Phosphate plant at their facility in Riverview, Florida.

Please submit any written comments you wish to have considered concerning the Department's proposed action to Mr. Preston Lewis of the Bureau of Air Regulation.

Sincerely,

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

CHF/JR/plm

Attachments

c: B. Thomas, SWD
J. Campbell, EPCHC
J. Harper, EPA
C. Shaver, NPS
D. Buff, P.E.

P 617 884 176



Certified Mail Receipt

No Insurance Coverage Provided
Do not use for International Mail
(See Reverse)

PS Form 3800, June 1990

Sent to	
Ozzie Morris	
Street & No.	
Cargill Fert	
P.O., State & ZIP Code	
Riverview, FL	
Postage	\$
Certified Fee	
Special Delivery Fee	
Restricted Delivery Fee	
Return Receipt Showing to Whom & Date Delivered	
Return Receipt Showing to Whom Date & Address of Delivery	
TOTAL Postage & Fees	\$
Postmark or Date	
10-14-91 AC 29-196763 PSD-FH 17E	

SENDER:

- Complete items 1 and/or 2 for additional services.
- Complete items 3, and 4a & b.
- Print your name and address on the reverse of this form so that we can return this card to you.
- Attach this form to the front of the mailpiece, or on the back if space does not permit.
- Write "Return Receipt Requested" on the mailpiece next to the article number.

I also wish to receive the following services (for an extra fee):

- Addressee's Address
- Restricted Delivery

Consult postmaster for fee.

3. Article Addressed to:

Mr. Ozzie Morris
Cmw. Pns
Cargill Fert, Inc.
8813 Hwy 41 South
Riverview, FL 33569

4a. Article Number

P 617 884 176

4b. Service Type

- | | |
|---|---|
| <input type="checkbox"/> Registered | <input type="checkbox"/> Insured |
| <input checked="" type="checkbox"/> Certified | <input type="checkbox"/> COD |
| <input type="checkbox"/> Express Mail | <input type="checkbox"/> Return Receipt for Merchandise |

7. Date of Delivery

10-16-91

5. Signature (Addressee)

6. Signature (Agent)

8. Addressee's Address (Only if requested and fee is paid)

STATE OF FLORIDA
DEPARTMENT OF ENVIRONMENTAL REGULATION

CERTIFIED MAIL

In the Matter of an
Application for Permit by:

DER File No. AC 29-196763
PSD-FL-178
Hillsborough, County

Mr. Ozzie Morris
Environmental Manager
Cargill Fertilizer, Inc.
8813 Highway 41 South
Riverview, Florida 33569

INTENT TO ISSUE

The Department of Environmental Regulation gives notice of its intent to issue a permit (copy attached) for the proposed project as detailed in the application specified above, for the reasons stated in the attached Technical Evaluation and Preliminary Determination.

The applicant, Cargill Fertilizer, Inc., applied on May 3, 1991, to the Department of Environmental Regulation for a permit to increase the production rate of the No. 5 Diammonium Phosphate plant at their facility in Riverview, Hillsborough County, Florida.

The Department has permitting jurisdiction under the provisions of Chapter 403, Florida Statutes and Florida Administrative Code (F.A.C.) Chapters 17-2 and 17-4. The project is not exempt from permitting procedures. The Department has determined that a construction permit is required for the proposed work.

Pursuant to Section 403.815, Florida Statutes and Rule 17-103.150, F.A.C., you (the applicant) are required to publish at your own expense the enclosed Notice of Intent to Issue Permit. The notice shall be published one time only within 30 days in the legal ad section of a newspaper of general circulation in the area affected. For the purpose of this rule, "publication in a newspaper of general circulation in the area affected" means publication in a newspaper meeting the requirements of Sections 50.011 and 50.031, F.S., in the county where the activity is to take place. The applicant shall provide proof of publication to the Department's Bureau of Air Regulation, 2600 Blair Stone Road, Tallahassee, Florida 32399-2400, within seven days of publication. Failure to publish the notice and provide proof of publication within the allotted time may result in the denial of the permit.

The Department will issue the permit with the attached conditions unless a petition for an administrative proceeding (hearing) is filed pursuant to the provisions of Section 120.57, F.S.

A person whose substantial interests are affected by the Department's proposed permitting decision may petition for an administrative proceeding (hearing) in accordance with Section 120.57, Florida Statutes. The petition must contain the information set forth below and must be filed (received) in the Office of General Counsel of the Department at 2600 Blair Stone Road, Tallahassee, Florida 32399-2400. Petitions filed by the permit applicant and the parties listed below must be filed within 14 days of receipt of this intent. Petitions filed by other persons must be filed within 14 days of publication of the public notice or within 14 days of their receipt of this intent, whichever first occurs. Petitioner shall mail a copy of the petition to the applicant at the address indicated above at the time of filing. Failure to file a petition within this time period shall constitute a waiver of any right such person may have to request an administrative determination (hearing) under Section 120.57, Florida Statutes.

The Petition shall contain the following information;

(a) The name, address, and telephone number of each petitioner, the applicant's name and address, the Department Permit File Number and the county in which the project is proposed;

(b) A statement of how and when each petitioner received notice of the Department's action or proposed action;

(c) A statement of how each petitioner's substantial interests are affected by the Department's action or proposed action;

(d) A statement of the material facts disputed by Petitioner, if any;

(e) A statement of facts which petitioner contends warrant reversal or modification of the Department's action or proposed action;

(f) A statement of which rules or statutes petitioner contends require reversal or modification of the Department's action or proposed action; and

(g) A statement of the relief sought by petitioner, stating precisely the action petitioner wants the Department to take with respect to the Department's action or proposed action.

If a petition is filed, the administrative hearing process is designed to formulate agency action. Accordingly, the Department's final action may be different from the position taken by it in this intent. Persons whose substantial interests will be affected by any decision of the Department with regard to the application have the right to petition to become a party to the proceeding. The petition must conform to the requirements specified above and be filed (received) within 14 days of receipt of this intent in the Office of General Counsel at the above address of the Department. Failure to petition within the allowed time frame constitutes a

waiver of any right such person has to request a hearing under Section 120.57, F.S., and to participate as a party to this proceeding. Any subsequent intervention will only be at the approval of the presiding officer upon motion filed pursuant to Rule 28-5.207, F.A.C.

Executed in Tallahassee, Florida.

STATE OF FLORIDA DEPARTMENT
OF ENVIRONMENTAL REGULATION

Barry D. Anderson
for C. H. Fancy, P.E., Chief
Bureau of Air Regulation
2600 Blair Stone Road
Tallahassee, Florida 32399
904-488-1344

CERTIFICATE OF SERVICE

The undersigned duly designated deputy clerk hereby certifies that this INTENT TO ISSUE and all copies were mailed by certified mail before the close of business on 10-14-91 to the listed persons.

Clerk Stamp

FILING AND ACKNOWLEDGMENT
FILED, on this date, pursuant to §120.52(11), Florida Statutes, with the designated Department Clerk, receipt of which is hereby acknowledged.

Kerri J. Iben
Clerk

10-14-91
Date

Copies furnished to:

B. Thomas, SWD
J. Campbell, EPCHC
J. Harper, EPA
C. Shaver, NPS
D. Buff, P.E.

STATE OF FLORIDA
DEPARTMENT OF ENVIRONMENTAL REGULATION
NOTICE OF INTENT TO ISSUE PERMIT

The Department of Environmental Regulation hereby gives notice of its intent to issue a permit to Cargill Fertilizer, Inc., 8813 Highway 41 South, Riverview, Florida 33569, to increase the production rate of the No. 5 Diammonium Phosphate plant at their facility in Riverview, Hillsborough County, Florida. A determination of Best Available Control Technology (BACT) was required. The proposed project is subject to Prevention of Significant Deterioration regulations and federal new source performance standards. The project will increase total allowable diammonium phosphate production at the Cargill facility by approximately 21.7% and is not expected to result in significant deterioration of the environment. Modeling results showed that increases in ambient ground-level concentrations are less than the PSD significant impact levels for particulate matter (PM/PM₁₀). The Department is issuing this Intent to Issue for the reasons stated in the Technical Evaluation and Preliminary Determination.

A person whose substantial interests are affected by the Department's proposed permitting decision may petition for an administrative proceeding (hearing) in accordance with Section 120.57, Florida Statutes. The petition must contain the information set forth below and must be filed (received) in the Office of General Counsel of the Department at 2600 Blair Stone Road, Tallahassee, Florida 32399-2400, within 14 days of publication of this notice. Petitioner shall mail a copy of the petition to the applicant at the address indicated above at the time of filing. Failure to file a petition within this time period shall constitute a waiver of any right such person may have to request an administrative determination (hearing) under Section 120.57, Florida Statutes.

The Petition shall contain the following information; (a) The name, address, and telephone number of each petitioner, the applicant's name and address, the Department Permit File Number and the county in which the project is proposed; (b) A statement of how and when each petitioner received notice of the Department's action or proposed action; (c) A statement of how each petitioner's substantial interests are affected by the Department's action or proposed action; (d) A statement of the material facts disputed by Petitioner, if any; (e) A statement of facts which petitioner contends warrant reversal or modification of the Department's action or proposed action; (f) A statement of which rules or statutes petitioner contends require reversal or modification of the Department's action or proposed action; and (g) A statement of the relief sought by petitioner, stating precisely the action petitioner wants the Department to take with respect to the Department's action or proposed action.

If a petition is filed, the administrative hearing process is designed to formulate agency action. Accordingly, the Department's final action may be different from the position taken by it in this Notice. Persons whose substantial interests will be affected by any decision of the Department with regard to the application have the right to petition to become a party to the proceeding. The petition must conform to the requirements specified above and be filed (received) within 14 days of publication of this notice in the Office of General Counsel at the above address of the Department. Failure to petition within the allowed time frame constitutes a waiver of any right such person has to request a hearing under Section 120.57, F.S., and to participate as a party to this proceeding. Any subsequent intervention will only be at the approval of the presiding officer upon motion filed pursuant to Rule 28-5.207, F.A.C.

The application is available for public inspection during normal business hours, 8:00 a.m. to 5:00 p.m., Monday through Friday, except legal holidays, at:

Department of Environmental Regulation
Bureau of Air Regulation
2600 Blair Stone Road
Tallahassee, Florida 32399-2400

Department of Environmental Regulation
Southwest District Office
4520 Oak Fair Blvd.
Tampa, Florida 33610-7347

Any person may send written comments on the proposed action to Mr. Preston Lewis at the Department's Tallahassee address. All comments received within 30 days of the publication of this notice will be considered in the Department's final determination.

Furthermore, a public hearing can be requested by any person. Such requests must be submitted within 30 days of this notice.

Technical Evaluation
and
Preliminary Determination

Cargill Fertilizer, Inc.
Hillsborough County
Riverview, Florida

No. 5 Diammonium Phosphate Plant
Production Increase to 67.2 TPD P₂O₅

Permit No. AC 29-196763
PSD-FL-178

Department of Environmental Regulation
Division of Air Resources Management
Bureau of Air Regulation

October 14, 1991

I. Application Information

A. Applicant

Cargill Fertilizer, Inc.
8813 Highway 41 South
Riverview, Florida 33569

B. Request

The Department received an application on May 3, 1991, for a permit to increase the production rate of the No. 5 diammonium phosphate plant at the applicant's phosphate complex in Riverview, Florida. After receiving additional information on June 13, August 7, and August 27, the application was deemed complete.

C. Classification/Location

The applicant's facility (SIC Code 2874) is located south of Tampa at U.S. 41 South and Riverview Drive, with latitude of 27°37'28"N and longitude of 82°23'15"W. The UTM coordinates of the site are: Zone 17, 362.9 km E and 3082.5 km N.

II. Project Description/Emissions

It is proposed to increase the allowable annual production rate of the No. 5 diammonium phosphate plant from 55.2 TPH P₂O₅ to 67.2 TPH P₂O₅. The rise in production will be accomplished by upgrading screens, mills, elevators, and conveyors to increase recycle capacity. Recovery of ammonia will be improved by installing a duct spray system ahead of the reactor-granulator scrubber. Other modifications include returning part of the cooler exhaust gases back to the granulator, reactor, and dryers for improved energy efficiency. Scrubber modifications will involve installation of more efficient spray nozzles, increasing liquid flow rates, and the addition of flowmeters to measure water flow to each tailgas scrubber. The dryer backup fuel will be changed to No. 2 fuel oil instead of the current No. 6 fuel oil.

Annual emission changes resulting from the increased production rate are summarized in the following table:

EMISSIONS (TONS/YR)

Pollutant	Actual	Proposed	Net Increase	Contemporaneous Changes*	Net Change
PM/PM ₁₀	24.0	56.0	32.0	12.2	44.2
SO ₂	0.02	33.3	33.3	-98.9	-65.6
Fluorides	11.6	17.7	6.1	-17.2	-11.1

NO _x	2.9	9.2	6.3	--	6.3
CO	0.6	2.4	1.8	--	1.8
VOC	0.2	0.2	--	--	--

*See Table A-2 of permit application

III. Rule Applicability

The construction permit application is subject to review under Chapter 403, Florida Statutes, and Florida Administrative Code (F.A.C.) Chapters 17-2 and 17-4. The facility is located in an area classified as an air quality maintenance area for particulate matter (PM) and as unclassifiable for PM₁₀ and SO₂. The area is classified as nonattainment for ozone. The proposed project is subject to the preconstruction review requirements of F.A.C. Rule 17-2.500, Prevention of Significant Deterioration (PSD). The proposed increase in PM/PM₁₀ emissions exceeds the significant level set forth in Table 500-2 of F.A.C. Rule 17-2.500. Preconstruction review must include a determination of Best Available Control Technology (BACT), good-engineering practice stack height, ambient impact analysis, impact on soils, vegetation, and visibility. F.A.C. Rules 17-2.660, Table 660-1, Section 60.220, and 17-2.700, Table 700-1, apply to this production increase. PM/PM₁₀ and SO₂ emissions will be limited by the BACT determination. Fluoride emissions will be limited by the federal new source performance standards, 40 CFR 60, Subpart V.

IV. Air Quality Analysis

a. Introduction

The production rate increases due to the project will result in actual emissions increases which are projected to be greater than the PSD significant rate for PM/PM₁₀. Therefore, the project is subject to the PSD review requirements contained in F.A.C. Rule 17-2.500. Part of these requirements is an air quality impact analysis for these pollutants, which includes:

- o An analysis of existing air quality.
- o A PSD increment analysis for PM/PM₁₀.
- o An Ambient Air Quality Standards (AAQS) analysis.
- o An analysis of impacts on soils, vegetation, visibility, and growth-related air quality impacts.
- o A Good Engineering Practice (GEP) stack height determination

The analysis of existing air quality generally relies on preconstruction monitoring data collected in accordance with EPA-approved methods. The PSD increment and AAQS analyses are based on air quality dispersion modeling completed in accordance with EPA guidelines. Based on these required analyses, the

Department has reasonable assurance that the project, as described in this report and subject to the conditions of approval proposed herein, will not cause or contribute to a violation of any PSD increment or AAQS. A brief description of the modeling method used and results of the required analyses follow. A more complete description is contained in the permit application on file.

b. Analysis of the Existing Air Quality

Preconstruction ambient air quality monitoring may be required for pollutants subject to PSD review. However, an exemption from the monitoring requirement can be obtained if the maximum air quality impact resulting from the projected emissions increase, as determined through air quality modeling, is less than a pollutant-specific de minimus concentration. For PM/PM₁₀, the de minimus concentration is 10 ug/m³, 24-hr average.

The project will result in a reduction of allowable short-term PM/PM₁₀ emissions from 20 lbs/hr to 15 lbs/hr, which will result in a net reduction of PM/PM₁₀ impacts for the 24-hr averaging time. Therefore no preconstruction monitoring for PM/PM₁₀ will be required.

c. Modeling Method

The EPA-approved Industrial Source Complex Short-Term (ISCST) dispersion model was used by the applicant to predict the impact of increased annual (actual) PM/PM₁₀ emissions from the proposed project on the surrounding ambient air. All recommended EPA default options were used. The potential for building downwash was also assessed. Five years of sequential hourly surface and mixing depth data from the Tampa, Florida National Weather Service collected during 1982 through 1986 were used in this model. The highest predicted yearly average was compared with the standards.

d. Modeling Results

The applicant first evaluated the potential increase in ambient ground-level concentrations associated with the project to determine if the predicted ambient concentration increases would be greater than the specified annual-average PSD significant impact level for PM/PM₁₀. Dispersion modeling was performed with receptors placed along the 36 standard radial directions (10 degrees apart) surrounding the proposed source at the following downwind distances: 1.0, 1.2, 1.5, 2.0, 3.0, 5.0, 10.0, 15.0, 20.0, 30.0, 40.0, and 50.0 km. The results of this modeling presented below show that the increases in ambient ground-level concentrations for the annual-averaging time is less than the PSD significant impact level.

Averaging Time	<u>PM/PM₁₀</u> Annual
PSD Significance Level (ug/m ³)	1.0
Ambient Concentration Increase (ug/m ³)	0.22

Therefore, further dispersion modeling for comparison with AAQS and PSD increment consumption was not required in this case.

e. Additional Impacts Analysis

A Level-1 screening analysis using the EPA model, VISCREEN was used to determine any potential adverse visibility impacts on the Class I Chassahowitzka National Wilderness Area located 87 km away. Based on this analysis, the maximum predicted visual impacts due to the proposed project are less than the screening criteria both inside and outside the Class I area.

In addition, a cumulative Class I increment analysis which included all increment consuming sources in the air shed impacting the Class I area was performed. The maximum predicted PM increment consumption was 0.63 ug/m^3 for the annual averaging time. This concentration is considerably below both the PSD Class I PM increment of 5 ug/m^3 , annual average and the proposed PM_{10} increment of 4 ug/m^3 , annual average.

Because the impact from the proposed increase in PM/PM_{10} is below the PSD significant impact level, no harmful effect on soils and vegetation is expected. In addition, the proposed modification will not significantly change employment, population, housing or commercial/industrial development in the area to the extent that a significant air quality impact will result.

VI. Conclusion

Based on the information provided by Cargill Fertilizer, Inc., the Department has reasonable assurance that the proposed project, as proposed herein, will not cause or contribute to a violation of an ambient air quality standard, PSD increment, or any other technical provisions of Chapter 17-2 of the Florida Administrative Code.

[Handwritten signature]
41755

10/14/91



Florida Department of Environmental Regulation

Twin Towers Office Bldg. • 2600 Blair Stone Road • Tallahassee, Florida 32399-2400

Lawton Chiles, Governor

Carol M. Browner, Secretary

PERMITTEE:

Cargill Fertilizer, Inc.
8813 Highway 41 South
Riverview, Florida 33569

Permit Number: AC 29-196763
PSD-FL-178

Expiration Date: Dec. 31, 1992

County: Hillsborough

Latitude/Longitude: 27°51'28"N

82°23'15"W

Project: No. 5 Diammonium
Phosphate Plant - Production
Increase to 67.2 TPH P₂O₅

This permit is issued under the provisions of Chapter 403, Florida Statutes, and Florida Administrative Code Chapters 17-2 and 17-4. The above named permittee is hereby authorized to perform the work or operate the facility shown on the application and approved drawings, plans, and other documents attached hereto or on file with the Department and made a part hereof and specifically described as follows:

For an increase in production to 67.2 TPH P₂O₅ in the No. 5 diammonium phosphate plant. This source is located at the permittee's existing facility in Riverview, Hillsborough County, Florida. The UTM coordinates are Zone 17, 362.9 km East and 3082.5 km North.

The source shall be constructed in accordance with the permit application, plans, documents, amendments and drawings, except as otherwise noted in the General and Specific Conditions.

Attachments are listed below:

1. Application received on May 3, 1991.
2. EPCHC's incompleteness letter dated May 21, 1991.
3. DER's incompleteness letter dated May 30, 1991.
4. Cargill's response letter dated June 13, 1991.
5. DER's incompleteness follow-up letter dated July 12, 1991.
6. Cargill's response letter dated August 6, 1991.
7. KBN's modeling analysis letter dated August 26, 1991.
8. EPA's offset determination letter dated August 28, 1991.
9. EPCHC's BACT recommendation letter dated September 23, 1991.

PERMITTEE:
Cargill Fertilizer, Inc.

Permit Number: AC 29-196763
PSD-FL-178
Expiration Date: December 31, 1992

GENERAL CONDITIONS:

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.
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, exhibits, specifications, or conditions of this permit may constitute grounds for revocation and enforcement action by the Department.
3. As provided in Subsections 403.087(6) and 403.722(5), Florida Statutes, the issuance of this permit does not convey any 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 of 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.
4. This permit conveys no title to land or water, does not constitute State recognition or acknowledgement 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.
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.
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

PERMITTEE:
Cargill Fertilizer, Inc.

Permit Number: AC 29-196763
PSD-FL-178
Expiration Date: December 31, 1992

GENERAL CONDITIONS:

auxiliary facilities or similar systems when necessary to achieve compliance with the conditions of the permit and when required by Department rules.

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 any 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.

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.

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

PERMITTEE:
Cargill Fertilizer, Inc.

Permit Number: AC 29-196763
PSD-FL-178
Expiration Date: December 31, 1992

GENERAL CONDITIONS:

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.

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.

11. This permit is transferable only upon Department approval in accordance with Florida Administrative Code Rules 17-4.120 and 17-30.300, 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.

12. This permit or a copy thereof shall be kept at the work site of the permitted activity.

13. This permit also constitutes:

- (x) Determination of Best Available Control Technology (BACT)
- (x) Determination of Prevention of Significant Deterioration (PSD)
- (x) Compliance with New Source Performance Standards (NSPS)

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 for

PERMITTEE:
Cargill Fertilizer, Inc.

Permit Number: AC 29-196763
PSD-FL-178
Expiration Date: December 31, 1992

GENERAL CONDITIONS:

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:

- the date, exact place, and time of sampling or measurements;
- the person responsible for performing the sampling or measurements;
- the dates analyses were performed;
- the person responsible for performing the analyses;
- the analytical techniques or methods used; and
- the results of such analyses.

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.

SPECIFIC CONDITIONS:

1. Maximum permitted production rate for the No. 5 diammonium phosphate plant shall be 67.2 TPH P₂O₅ input. If the production rate exceeds the maximum permitted rate by 10% or more at any time, a compliance test must be conducted after notifying the Department and the Environmental Protection Commission of Hillsborough County (EPCHC) and the results of this test, along with other information listed in Specific Condition No. 9 must be submitted to the Department and the EPCHC within 10 working days.

2. The No. 5 plant may operate 8,760 hours per year.

3. The emissions from the No. 5 plant shall not exceed:

Pollutant	Standard	Maximum Allowable Emissions	
		lb/hr	T/yr
PM/PM ₁₀	0.19 lb/T P ₂ O ₅	12.8	56.0
SO ₂	0.58 lb/T P ₂ O ₅	32.4	83.7
Fluoride	0.06 lb/T P ₂ O ₅	3.3	14.5

4. Only natural gas or No. 2 fuel oil shall be used in the drying

PERMITTEE:
Cargill Fertilizer, Inc.

Permit Number: AC 29-196763
PSD-FL-178
Expiration Date: December 31, 1992

SPECIFIC CONDITIONS:

operation. The No. 2 fuel oil shall contain no more than 0.5% sulfur.

5. Fugitive emissions from the process, conveying and storage equipment shall be controlled by sealing and/or venting all particulate and fumes from the equipment to the pollution abatement system.

6. The permittee shall measure and record the liquid flow rate and total pressure drop across each scrubber system. These records shall be maintained for 2 years and available for inspection by regulatory agency personnel on request.

7. Before the construction permit expires, the No. 5 DAP plant shall be sampled for PM/PM₁₀, sulfur dioxide, and fluoride emissions. Test procedures shall be in accordance with EPA reference methods 1, 2, 3, 5, 6, and 13A and 13B as published in 40 CFR 60, Appendix A. The Southwest District and the EPCHC shall be notified in writing 15 days or more prior to the compliance test. The test shall be conducted at permitted production capacity or no less than 90% thereof.

8. The permittee, for good cause, may 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 (F.A.C. Rule 17-4.090).

9. An application for an operation permit must be submitted to the Southwest District office at least 90 days prior to the expiration date of this construction permit. To properly apply for an operation permit, the applicant shall submit the appropriate application form, fee, certification that construction was completed noting any deviations from the conditions in the construction permit, and compliance test reports as required by this permit (F.A.C. Rules 17-4.055 and 17-4.220).

Issued this _____ day
of _____, 1991

**STATE OF FLORIDA DEPARTMENT
OF ENVIRONMENTAL REGULATION**

Carol M. Browner, Secretary

Best Available Control Technology (BACT) Determination
Cargill Fertilizer, Inc.
Hillsborough County

The applicant proposes to increase diammonium phosphate production from 55.2 tons P₂O₅ per day to 67.2 tons P₂O₅ per day at their No. 5 diammonium phosphate plant in Hillsborough County.

The proposed project will result in a significant increase in emissions of particulate matter (PM/PM₁₀). The project is therefore subject to Prevention of Significant Deterioration (PSD) review in accordance with F.A.C. Rule 17-2.500(5).

The BACT review is part of the PSD review requirements in accordance with F.A.C. Rule 17-2.500(5)(c).

Date of Receipt of a BACT Application:

May 3, 1991

BACT Determination Requested by the Applicant:

The BACT determination requested by the applicant is presented below:

Control Technology:	Venturi acid scrubbing/packed section pond water scrubbing
Pollutant:	Emission Limits:
PM/PM ₁₀	0.22 lb/ton P ₂ O ₅ (15 lb/hr, 0.0143 gr/acf)
Visible Emissions	Not Specified
SO ₂	0.5% Max. sulfur content of No.2 Fuel Oil

Basis of Review:

This determination was based upon input from the applicant, EPA Region IV, the Environmental Protection Commission of Hillsborough County (EPCHC), and the Bureau of Air Regulation.

BACT Determination Procedure:

In accordance with Florida Administrative Code Chapter 17-2, Air Pollution, this BACT determination is based on the maximum degree of reduction of each pollutant emitted which the 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:

BACT

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- (a) Any Environmental Protection Agency determination of Best Available Control Technology 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).
- (b) All scientific, engineering, and technical material and other information available to the Department.
- (c) The emission limiting standards or BACT determinations of any other state.
- (d) 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 source in question the most stringent control available for a similar or identical source or source category. If it is shown that this level of control is technically or economically infeasible for the source 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.

BACT Determined by the Department:

Control Technology	Venturi acid scrubbing/packed section pond water scrubbing
Pollutant:	Emission Limits:
PM/PM ₁₀	0.19 lb/ton P ₂ O ₅ (12.8 lb/hr, 0.0122 gr/acf)
Visible Emissions	10% opacity
SO ₂	0.5% max. sulfur content of No. 2 fuel oil

BACT Determination Rationale

The Department's BACT determination is more stringent than that proposed by the applicant and is consistent with compliance test results for the No. 5 DAP plant. The Department's proposed emission limit is also more stringent than prior BACT limits set for other diammonium phosphate plants. The proposed emission limit reflects a particulate removal efficiency of over 99%. A

review of BACT/LAER Clearinghouse indicates that the use of venturi scrubbers followed by pond water scrubbing in a packed section is representative of BACT using the top-down approach. No. 2 fuel oil sulfur content has been limited at 0.5% in prior BACT determinations, therefore, the Department is in agreement with the applicant's proposed sulfur content.

Environmental Impact Analysis

The impact analysis for the BACT determination is based on 8,760 hours/year operation. The ambient air quality impact analysis resulted in the following:

<u>Averaging Time</u>	<u>Predicted Impact (ug/m³)</u>	<u>PSD Significance Level (ug/m³)</u>
Annual PM/PM ₁₀ SO ₂	0.22 (Net reduction due to offsets)	1.0

Conclusion

The incremental impact from PM/PM₁₀ due to the proposed modification is insignificant. The impacts associated with the proposed increase in production support the Department's determination that the emission limits established herein represent BACT.

Details of the Analysis May be Obtained by Contacting:

Preston Lewis, P.E.
Department of Environmental Regulation
Bureau of Air Regulation
2600 Blair Stone Road
Tallahassee, Florida 32399-2400

Recommended by:

Approved by:

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

Carol M. Browner, Secretary
Dept. of Environmental Regulation

Date 1991

Date 1991



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION IV

345 COURTLAND STREET, N.E.
ATLANTA, GEORGIA 30365

AUG 28 1991

4APT-AEB

Mr. Clair H. Fancy, P.E., Chief
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Twin Towers Office Building
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Tallahassee, Florida 32399-2400

RECEIVED
SEP 3 1991
Division of Air
Resources Management

RE: Cargill Fertilizer Incorporated, Riverview, Florida (PSD-FL-178)

Dear Mr. Fancy:

This is to acknowledge receipt of an application for a Prevention of Significant Deterioration (PSD) permit for the above referenced facility by your letter dated May 17, 1991. Cargill (formerly Gardinier, Inc.) proposes to increase maximum diammonium phosphate (DAP) production at the No. 5 DAP plant from 114 TPH to 146 TPH. A copy of additional DAP plant engineering design and netting information requested by FDER was received by EPA-Region IV on June 24, 1991. Further clarification was requested from Cargill regarding the use of "leftover" fluoride (Fl) emission credits in PSD-FL-178 netting calculations by your letter dated July 12, 1991. EPA-Region IV assistance in making an interpretation of PSD regulations regarding the creditability of emissions for netting was also requested by FDER as discussed between Mr. John Reynolds of your staff and Mr. Stan Kukier of my staff on July 18, 1991.

BACKGROUND

Additional information concerning a previous Cargill (Gardinier) No. 5 DAP plant PSD permit and modification (PSD-FL-026) issued on July 5, 1980, and June 14, 1988, respectively, was requested and received from Mr. David Buff of KBN Engineering and Applied Science by fax dated July 22, 1991. The source netted out of PSD review in a construction permit issued for an expansion of the No. 5 DAP plant by the State of Florida (Permit Reference No. AC29-135083) on October 14, 1987. Emissions netting was performed by Cargill for the 1987 No. 5 DAP plant expansion using contemporaneous allowable PM, Fl, and SO₂ triple superphosphate (TSP) reactor belt, dryer, and sizing unit shutdown emission credits.

The original No. 5 DAP plant PSD permit (PSD-FL-026) was amended by EPA-Region IV on June 14, 1988 to reflect changes in PM, Fl, and SO₂ maximum emission rate limits due to the increase in operating capacity, and to make the shutdown of TSP production units federally enforceable. FDER's question concerns whether or not -28.8 TPY of

contemporaneous Fl emission credits "leftover" from the 1987 Cargill emissions netting calculations can still be applied to the 17.7 TPY total estimated PSD-FL-178 Fl emissions after the 1988 PSD-FL-026 EPA permit amendment. A December 29, 1989 guidance memorandum (received via fax by John Reynolds on July 17, 1991) from John Calcagni to Bruce P. Miller regarding the use of netting credits recommends following the procedure described below for considering emissions increases and decreases in a netting calculation. Emissions increases and decreases are considered in their entirety and do not result in "leftover" emissions credits.

USE OF NETTING CREDITS

The pertinent PSD criteria for emissions increases and decreases to be creditable for netting transactions is 40 C.F.R. § 52.21 (b) (3) (iii), which states that emissions increases and decreases are creditable:

b)..."if the reviewing authority has not relied on it (e.g., an emissions decrease) in issuing a permit for the source under regulations approved pursuant to this section, which permit is in effect when the increase in actual emissions from the particular change occurs." [NOTE: EPA's policy is to interpret the permit to be a PSD permit.]

When a source nets out of review, the permitting authority has not relied upon creditable emissions increases or decreases in issuing a PSD permit for that pollutant. Since Cargill netted out of review for fluorides in the 1987 No. 5 DAP plant expansion and no new PSD permit was issued, the creditable Fl emissions decreases are still available for application to estimated PSD-FL-178 Fl emissions. The emissions limit for Fl in the 1987 permit was not a PSD limit. As a result, estimated Fl emissions after netting (-11.1 TPY) will remain below the PSD significance level (3 TPY)

BACT REVIEW

The increase in DAP production capacity to 146 TPH would be accomplished by an increase in the recycle system capacity. Additional screens and mills are to be added and the recycle elevator replaced. The product bucket elevator, belt conveyors, as well as the existing cyclone and wet scrubber system would also be upgraded to accommodate the increased throughput. Significance levels for PSD applicability are exceeded only for PM (65.7 TPY). The maximum PM permit emission rate proposed (15 lb/hr) is less than the maximum rate previously permitted (20 lb/hr). There will also be decreases in maximum permitted emission rates for SO₂ and NO_x. The proposed maximum permit Fl emission rate (4.03 lb/hr), estimated using the 40 C.F.R. § 60.222 (a), Subpart V, DAP, NSPS fluoride

emission factor of 0.06 lb/ton P_2O_5 feed, is higher than the Fl emission rate previously permitted (3.3 lb/hr).

The No. 5 DAP plant process equipment is subject to BACT review. These emission units include the reactor, granulator, dryer, cooler, and materials handling equipment. Process equipment emissions are currently controlled by cyclones, three venturi scrubbers in parallel, and two up-flow tail gas scrubbers also operating in parallel. Control equipment modifications such as airlock, spray nozzle, and mist eliminator replacement, as well as additional instrumentation, larger packing support plate openings, more liquid feed points, and increased water flow and liquor recirculation rates, are proposed to provide improved control of greater PM and Fl process emissions due to increased throughput.

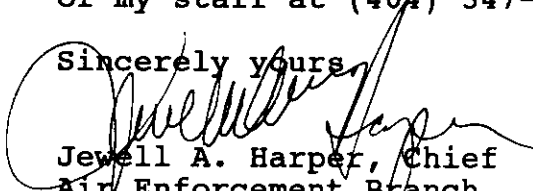
A review of the RACT/BACT/LAER Clearinghouse data base reveals that wet venturi scrubber systems have been determined BACT for two other Florida DAP facilities, Agrico Chemical Co. and W.R. Grace & Co., and one Wyoming DAP facility, Chevron USA Co.. Maximum allowable permit PM emission rates for the Grace and Chevron DAP facilities are 0.50 lb/ton P_2O_5 and 0.0180 gr/acf, respectively. The maximum allowable permit PM emission rate proposed by Cargill is equivalent to 0.22 lb/ton P_2O_5 or 0.0143 gr/acf.

Wet scrubbers are mentioned as the exclusive means of DAP plant emission control in EPA-340/1-77-009, "Phosphate Fertilizer Plants Inspectional Manual for Enforcement of New Source Performance Standards", due to the necessity for both gaseous and particulate emission removal and the presence of high humidity in the gas streams. Primary venturi scrubbers are the key control devices used in DAP plants, with secondary packed flow scrubbers used to provide high Fl emission control efficiencies. Background information for standards of performance for the phosphate fertilizer industry (EPA-450/2-74-019a) mentions packed scrubbers as representing the best demonstrated Fl emission control technology. EPA-450/3-79-038, "Review of New Source Performance Standards for the Phosphate Fertilizer Industry", states that scrubbers have remained the principal means of controlling Fl emissions from phosphate plants since NSPS publication. EPA-600/2-79-169, "Evaluation of Control Technology for the Phosphate Fertilizer Industry", also mentions use of a two-stage primary venturi/secondary tail gas scrubber combination as being able to provide exceptional DAP plant particulate and gaseous fluoride emission control. Current actual Cargill No. 5 DAP plant venturi scrubber PM and tail gas scrubber Fl removal efficiencies are 98% and 95%, respectively.

Based upon our review of previous BACT determinations and all available EPA background documentation concerning DAP facilities, the modified two-stage wet scrubber system as proposed by Cargill can be recommended as BACT for particulate emission control. The PM emission limit proposed by Cargill is lower than PM emission limits previously determined BACT for both Grace and Chevron DAP plants, and 25% lower than the previous allowable PSD-FL-026 amendment PM emission limit. EPA-600/2-79-169 also describes DAP facilities utilizing a venturi/tail gas scrubber combination control system for PM and Fl emissions as being well controlled.

Thank you for the opportunity to review and comment on this package. If you have any questions or comments, please contact Mr. Stan Kukier of my staff at (404) 347-5014.

Sincerely yours,



Jewell A. Harper, Chief
Air Enforcement Branch
Air, Pesticides, and Toxics
Management Division

cc: J. Reynolds
B. Andrews
M. Finn
B. Thomas, SW Dist
D. Graziani, EPEHC
C. Shaver, NPS
D. Buff, KBN