Department of Environmental Protection

Lawton Chiles
Governor

Twin Towers Office Building
2600 Blair Stone Road
Tallahassee, Florida 32399-2400

Virginia B. Wetherell
Secretary

November 14, 1994

CERTIFIED MAIL-RETURN RECEIPT REQUESTED

Mr. David B. Jellerson, P.E.
Environmental Superintendent
Cargill Fertilizer, Inc.
P. O. Box 9002
Bartow, Florida 33830

Dear Mr. Jellerson:

Attached is one copy of the Technical Evaluation and Preliminary Determination, proposed permit and the Best Available Control Technology evaluation for the modifications to the No. 8 and No. 9 sulfuric acid plants. The existing phosphate fertilizer plant is located on Highway 41 South, Riverview, Hillsborough County, Florida.

Submit any written comments for consideration concerning the Department's proposed action to Mr. John Brown at the above address.

Sincerely,

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

CHF/SA/bjb

Attachments

cc: Jerry Campbell, EPCHC
Bill Thomas, SWD
Jewell Harper, EPA
John Bunyak, NPS
David Buff, KBN

STATE OF FLORIDA
DEPARTMENT OF ENVIRONMENTAL PROTECTION

CERTIFIED MAIL

In the Matter of an
Application for Permit by:

DEP File No. AC 29-241660
PSD-FL-209
Hillsboro. Co.

Mr. David B. Jellerson
Cargill Fertilizer, Inc.
P. O. Box 9002
Bartow, Florida 33830

_____/

INTENT TO ISSUE

The Department of Environmental Protection (Department) 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 November 24, 1993, to the Department for a permit to modify the No. 9 sulfuric acid plant at Cargill Fertilizer's phosphate fertilizer manufacturing plant on Highway 41 South in Riverview, Hillsborough County, Florida. On June 10, 1994, Cargill Fertilizer, Inc. amended the application to include modification of the No. 8 sulfuric acid plant also.

The Department has permitting jurisdiction under the provisions of Chapter 403, Florida Statutes (F.S.), and Chapters 62-212 and 62-4, Florida Administrative Code (F.A.C.). 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, F.S., and Rule 62-103.150, 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, F.S. 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, F.S.

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 PROTECTION

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 11/14/94 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.

Clerk 11/14/94
Date

Copies furnished to:
Bill Thomas, SWD
Jewell Harper, EPA
John Bunyak, NPS
Jerry Campbell, EPCHC
David Buff, KBN

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

AC29-241660

PSD-FL-209

The Department of Environmental Protection (Department) gives notice of its intent to issue a permit to Cargill Fertilizer, Inc. P. O. Box 9002, Bartow, Florida 33830. The permit will allow the applicant to modify (increase production) the existing No. 8 and No. 9 sulfuric acid plants at Cargill Fertilizer, Inc.'s phosphate fertilizer manufacturing plant on Highway 41 South in Riverview, Hillsborough County, Florida. The two emission units will be consolidated into one permit (AC 29-241660). The modification to the sulfuric acid plant requires a Best Available Control Technology (BACT) determination for sulfur dioxide and acid mist. The maximum predicted PSD Class II sulfur dioxide increments to be consumed by the proposed project are the following: 0.47 ug/m^3, annual average, or 2% of the available annual increment of 20 ug/m^3; 4.22 ug/m^3, 24-hour average, or 5% of the available 24-hour increment of 91 ug/m^3; and 17.33 ug/m^3, 3-hour average, or 3% of the available 3-hour increment of 512 ug/m^3. The maximum predicted PSD Class I sulfur dioxide increments to be consumed by the proposed project are the following: 0.008 ug/m^3, or less than 1% of the available annual increment of 2.0 ug/m^3; 0.27 ug/m^3, 24-hour average, or 5% of the available 24-hour increment of 5.0 ug/m^3; and, 1.31 ug/m^3, 3-hour average, or 5% of the available 3-hour increment of 25 ug/m^3. Emissions from this modification will not cause or significantly contribute to a violation of any ambient air quality standard or Prevention of Significant Deterioration (PSD) increment. 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 (F.S.). 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, F.S.

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, Florida Administrative Code.

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 Protection
Bureau of Air Regulation
111 S. Magnolia Park Courtyard
Tallahassee, Florida 32301

Department of Environmental Protection
Southwest District
3804 Coconut Palm Drive
Tampa, Florida 33619-8218

Environmental Protection Commission of
Hillsborough County
1410 N. 21st Street
Tampa, Florida 33605

Any person may send written comments on the proposed action to Mr. John Brown 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.

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

Technical Evaluation
and
Preliminary Determination

Cargill Fertilizer, Inc.
Riverview, Hillsborough County, Florida

SULFURIC ACID PRODUCTION MODIFICATION

Department File No.: AC 29-241660
PSD-FL-209

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

November 14, 1994

I. General Information

A. Applicant

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

B. Request

On November 24, 1993, Cargill Fertilizer, Inc. submitted an initial application for permit to construct (modify) the existing No. 9 sulfuric acid plant (SIC 2819). On June 10, 1994, Cargill Fertilizer, Inc. amended the application to include a modification to the existing No. 8 sulfuric acid plant. This application was considered complete on August 29, 1994, when the Department received KBN's letter providing the additional information on the project requested by the Department. All of these sources are located at the applicant's phosphate fertilizer manufacturing plant on Highway 41 South near Riverview, Hillsborough County, Florida 33569. The UTM coordinates for this facility are Zone 17, 363.3 km E and 3082.4 km N.

C. Project

The applicant proposes to increase the production of the No. 9 sulfuric acid plant from 2,800 tons per day (TPD) to 3,200 TPD and the No. 8 sulfuric acid plant from 2,500 TPD to 2,900 TPD. However, the combined production rate of the No. 8 and No. 9 sulfuric acid plants will be limited to 5,700 TPD of 100% sulfuric acid. Under this combined limit, the No. 8 sulfuric acid plant could operate at rates up to 2,900 TPD, and the No. 9 sulfuric acid plant could operate at rates up to 3,200 TPD, but the combined production rate would not exceed 5,700 TPD. The basic sulfuric acid process is not being changed. No additional air pollution control equipment will be installed on the plant. The proposed project will involve equipment changes and utilization of a new ring type catalyst for both plants.

D. Emissions

The No. 8 and No. 9 sulfuric acid plants will increase the allowable production from 2,500 to 2,900 TPD and from 2,800 to 3,200 TPD of 100% sulfuric acid, respectively. Table I summarizes the changes in emissions from the No. 8 sulfuric acid plant, and Table II summarizes the changes in emissions from the No. 9 sulfuric acid plant.

Table I
No. 8 Sulfuric Acid Plant Emissions

	Production (TPD)	Sulfur Dioxide lbs/hr	Sulfur Dioxide TPY	Acid Mist lbs/hr	Acid Mist TPY	NO_x TPY
Proposed	2,900	483.3	2,117	18.1	79.3	63.5
Present	2,500	416.7*	1,825	15.6	68.3	54.8
Increase	400	66.6	292	2.5	11	8.7

*Based on recent 6 mos. CEM data.

Table II
No. 9 Sulfuric Acid Plant Emissions

	Production (TPD)	Sulfur Dioxide lbs/hr	Sulfur Dioxide TPY	Acid Mist lbs/hr	Acid Mist TPY	NO_x TPY
Proposed	3,200	533.3	2,336	20.0	87.6	70.1
Present	2,800	433.2*	1,897	16.2	71.0	61.3
Increase	400	100.1	439	3.8	16.6	8.8

*Based on recent 6 mos. CEM data.

From the previous two tables, it can be seen that the increase in emissions resulting from this project are: 731 TPY SO_2; 27.6 TPY acid mist; and, 17.5 TPY NO_x. The increase in emissions of sulfur dioxide and acid mist exceed the significant emissions rates listed in Table 212.400-2, Chapter 62-212, F.A.C.

II. Rule Applicability, Regulated Air Pollutants - Significant Emission Rates

The proposed project, modification of two sulfuric acid plants at a phosphate fertilizer plant, are subject to preconstruction review requirements under the provisions of Chapter 403, Florida Statutes, and Chapters 62-209 through 62-297, Florida Administrative Code (F.A.C.).

The sources are in Hillsborough County, an area designated marginal nonattainment for ozone, nonattainment for lead and attainment for all other criteria pollutants (Rule 62-275.410, F.A.C.).

The facility (SIC 2874) is a major source of sulfur dioxide because the potential emissions of this pollutant exceeds 100 TPY. Chemical process plants are listed in Table 212.400-1, Major Facility Categories, Chapter 62-212, F.A.C.

The proposed project is subject to the Prevention of Significant Deterioration Regulations, Rule 62-212.400, F.A.C., because the contemporaneous emissions increases of sulfur dioxide and acid mist from the sulfuric acid plants exceed the significant emission rates listed in Table 212.400-2 of Rule 62-212, F.A.C. The emission limits for these pollutants for the sulfuric acid plants will be established by a Best Available Control Technology (BACT) determination pursuant to Rule 62-212.410, F.A.C. The applicant is also subject to the other preconstruction review requirements listed in Rule 62-212.400, F.A.C.

In addition, the proposed modifications are subject to 40 CFR 60, Subpart H, Standards of Performance for Sulfuric Acid Plants.

III. Technical Evaluation

The emission limits proposed as BACT for the sulfuric acid plants and accepted by the Department are the new source performance standards (NSPS) listed in 40 CFR 60, Subpart H. Test data furnished by the company shows the measured sulfur dioxide and acid mist emissions are below NSPS standards.

IV. Air Quality Analysis

a. Introduction

The production rate increases due to the proposed project will result in emissions increases which are projected to be greater than the PSD significant rates for SO_2 and sulfuric acid mist. Therefore, the project is subject to the PSD review requirements contained in Rule 62-212.400, F.A.C. Part of these requirements is an air quality impact analysis for these pollutants, which includes:

- An analysis of existing air quality.
- A PSD increment analysis for SO_2.
- An Ambient Air Quality Standards (AAQS) analysis.
- An analysis of impacts on soils, vegetation, visibility, and growth-related air quality impacts.
- 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 projected production rate increases, as described in this report and subject to the conditions of approval proposed herein, will not cause or significantly 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. However, the following EPA-directed stack height language is included: "In approving this

permit, the Florida Department of Environmental Protection has determined that the application complies with the applicable provisions of the stack height regulations as revised by EPA on July 8, 1985 (50 FR 27892). Portions of the regulations have been remanded by a panel of the U.S. Court of Appeals for the D.C. Circuit in NRDC v. Thomas, 838 F. 2d 1224 (D.C. Cir. 1988). Consequently, this permit may be subject to modification if and when EPA revises the regulation in response to the court decision. This may result in revised emission limitations or may affect other actions taken by the source owners or operators." A more complete description is contained in the permit application on file.

b. Analysis of the Existing Air Quality and Determination of Background Concentrations

Preconstruction ambient air quality monitoring may be required for pollutants subject to PSD review. However, an exemption to 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. The predicted maximum concentration increase for SO_2 is given below:

PSD de minimus concentration (ug/m^3)	13, 24-hour average
Maximum Predicted Impact (ug/m^3)	7.2, 24-hour average

There are no monitoring de minimus concentrations for H_2SO_4 mist. As shown above, the predicted impact for SO_2 is less than the corresponding de minimus concentration; therefore, no preconstruction monitoring is necessary for either pollutant subject to PSD review.

The Department accepted the applicant's suggested background SO_2 concentrations for use in the AAQS analysis. Background SO_2 values of 103 ug/m^3, 3-hr average; 34 ug/m^3, 24-hr average; and, 4 ug/m^3, annual average, were obtained from 1991 data collected at the Department's SO_2 monitor in Gibsonton. The 3-hour average and 24-hour average background values are the 1991 second-highest concentrations from the Gibsonton monitor.

c. Modeling Method

The EPA-approved Industrial Source Complex Short-Term (ISCST2) dispersion model was used to evaluate the pollutant emissions from the proposed project and other existing major facilities. The model determines ground-level concentrations of inert gases or small particles emitted into the atmosphere by point, area and volume sources. The model incorporates elements for plume rise, transport by the mean wind, Gaussian dispersion, and pollutant removal mechanisms such as deposition. The ISCST2 model allows for the separation of sources, building wake downwash, and various other input and output features. A series of specific

model features, recommended by the EPA, are referred to as the regulatory options. The applicant used the EPA recommended regulatory options in each modeling scenario. Direction-specific downwash parameters were used for all sources for which downwash was considered.

Initially, for the significant impact analysis, concentrations were predicted at polar receptors placed along 36 standard radial directions (10 degrees apart) surrounding the No. 9 sulfuric acid plant at the following downwind distances: 4.0, 5.0, 6.0, 7.0, 8.0, 9.0, and 10.0 km. The results of this analysis showed that the increases in ambient ground-level SO_2 concentrations were significant out to 8.0 km, thus requiring the applicant to do a full impact analysis for comparison with the AAQS and the PSD Class II SO_2 increments.

For the AAQS and PSD Class II analyses both screening and refining receptor grids were used. These grids were based on the size of the significant impact area. The screening grids for both the AAQS and PSD Class II analyses contained polar and discrete receptors. Screening receptors were placed along 36 standard radial directions surrounding the No. 9 sulfuric acid plant at the following downwind distances: 2.0, 3.0, 4.0, 5.0, 6.0, 7.0, and 8.0 km. A total of 36 discrete receptors were placed along the plant boundary at 10 degree intervals, with an additional 83 off-property receptors placed at distances of 0.5, 0.8, 1.1, and 1.5 km from the No. 9 sulfuric acid plant. For the AAQS analysis three refining grids were used to provide greater detail in certain areas downwind of the plant. These areas were located in downtown Tampa, in Ruskin, and in an area 2.0 to 4.0 km southeast of the Cargill site. Direction radials were placed five degrees apart at distances intervals of 0.5 km. For the PSD Class II analysis, refining receptors were located along radials spaced 2 degrees apart at distance intervals of 0.1 km downwind from the site.

Impacts for the PSD Class I Chassahowitzka National Wilderness Area (NWA) were predicted at 13 standard discrete receptors approved by the Department. This Class I area is located 85 km to the north of Cargill at its closest point.

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. Since five years of data were used, the highest-second high, short-term predicted concentrations are compared with the appropriate ambient air quality standards or PSD increments. For the annual averages, the highest predicted yearly average was compared with the standards.

d. AAQS Analysis

For the pollutants subject to an AAQS review, the total impact on ambient air is obtained by adding a "background concentration" to the maximum modeled concentration. This "background concentration" takes into account all sources of a

particular pollutant that are not explicitly modeled. The AAQS analysis submitted with this proposed project shows that maximum predicted total SO_2 impacts in the area are predicted to exceed the AAQS at numerous receptors and times for all three SO_2 averaging times. However, the predicted maximum annual, 24-hour, and 3-hour impacts due to the proposed Cargill modification are all less than the respective significance levels of 1, 5, and 25 ug/m^3, at all receptors and time periods when exceedances of the AAQS are predicted. Therefore, the proposed modification will not contribute significantly to any predicted AAQS exceedance or violation in this area and is able to be permitted by Department rules. The results of the AAQS analysis for SO_2 is summarized in Table 1.

e. PSD Increment Analysis

1. Class II Area

The PSD increment represents the amount that new sources in an area may increase predicted ambient ground level concentrations of a pollutant. Atmospheric dispersion modeling, as previously described, was performed to quantify the amount of PSD increment consumed. The results, summarized in Table 2, show that the maximum SO_2 increment consumption exceeds the allowable 24-hour Class II PSD increment. However, there is only one predicted violation of the 24-hour increment, and the proposed modification has no predicted contribution to this violation.

2. Class I Area

The nearest PSD Class I area is the Chassahowitzka National Wilderness Area located 85 km north of the facility at its closest point. Maximum SO_2 concentrations predicted for the proposed modification only at receptors in this area show impacts greater than the National Park Service (NPS) recommended significance levels for the 3-hour and 24-hour averaging times. Therefore, for these averaging times, a more extensive PSD Class I modeling analysis was performed using all increment-consuming sources in the area. The results of this analysis are shown in Table 3. The maximum predicted 3-hour and 24-hour concentrations due to all increment-consuming sources in the vicinity of this Class I area exceed the PSD Class I increments on numerous occasions. In order to assess the proposed modification's contribution to any predicted Class I exceedances, an analysis was performed to determine all time periods and receptors at which an exceedance was predicted to occur. For each case, the proposed modification's impact was determined and compared to the NPS recommended significance levels of 0.48 ug/m^3 and 0.07 ug/m^3 for the 3-hour and 24-hour averaging times, respectively. The impact of the proposed modification was always less than these significance levels at any receptor and for any time period when there were predicted exceedances or violations of increments. Therefore, the proposed modification will not contribute significantly to any predicted exceedance or violation of Class I increments and may be permitted by Department rules.

Table 1. Ambient Air Quality Impact

Pollutant	Averaging Time	Modeled Sources Maximum Impact[1] (ug/m^3)	Background Conc. (ug/m^3)	Total Impact (ug/m^3)	Florida AAQS (ug/m^3)
SO_2	Annual	59	4	63[2]	60
	24-hour	380	34	414[2]	260
	3-hour	1473	103	1576[2]	1,300

Table 2. PSD Class II Increment Analysis

Pollutant	Averaging Time	Max. Predicted Impact[1] (ug/m^3)	Allowable Increment (ug/m^3)
SO_2	Annual	8.1	20
	24-hour	94[2]	91
	3-hour	322	512

Table 3. PSD Class I Increment Analysis

Pollutant	Averaging Time	Max. Predicted Impact[1] (ug/m^3)	Allowable Increment (ug/m^3)
SO_2	Annual	1.03	2
	24-hour	7.3[2]	5
	3-hour	48.5[2]	25

1 Maximum high, second high value over a five-year period.
2 The project has less than significant impacts for all predicted exceedances of SO_2 AAQS and increments.

f. Non-criteria pollutants

Sulfuric acid mist is a non-criteria pollutant, which means that neither a national AAQS nor a PSD increment has been defined for this pollutant. The maximum ground level concentration of sulfuric acid mist due to the facility is 0.28 ug/m^3, which is below the Acceptable Ambient Concentration (AAC) of 2.4 ug/m^3.

g. Additional Impacts Analysis

The applicant did an air quality related values (AQRV) analysis for both the PSD Class II area near the plant and for the Chassahowitzka Class I area located 85 km to the north. The increased emissions from the project are not expected to impact the AQRVs of either area. The AQRV analysis includes impacts on vegetation, soils, wildlife and visibility. 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.

V. Conclusion

Based on the information provided by Cargill Fertilizer, Inc., the Department has reasonable assurance that the proposed project, as described in this evaluation, and subject to the conditions proposed herein, will not cause or contribute to a violation of any air quality standard, PSD increment, or any other technical provision of Chapters 62-209 through 62-297 of the Florida Administrative Code.

Department of Environmental Protection

Lawton Chiles
Governor

Twin Towers Office Building
2600 Blair Stone Road
Tallahassee, Florida 32399-2400

Virginia B. Wetherell
Secretary

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

Permit Number: AC 29-241660
PSD-FL-209
Expiration Date: Dec. 31, 1996
County: Hillsborough
Latitude/Longitude: 27°51'28"N
82°23'15"W
Project: Sulfuric Acid Plant

This permit is issued under the provisions of Chapter 403, Florida Statutes; Chapters 62-210, 212, 272, 296 and 297, Florida Administrative Code (F.A.C.); and, Chapter 62-4, F.A.C. The above named permittee is hereby authorized to perform the work or operate the emission unit/source shown on the application and approved drawings, plans, and other documents attached hereto or on file with the Department of Environmental Protection (Department) and specifically described as follows:

For the modifications to increase the No. 8 sulfuric acid plant production to 2,900 TPD 100% sulfuric acid and No. 9 sulfuric acid plant production to 3,200 TPD 100% sulfuric acid. The modifications involves physical change to these plants. The sources are located at the Cargill Fertilizer's facility on Highway 41 South in Riverview, Hillsborough County, Florida. The UTM coordinates of this facility are Zone 17, 363.3 km E and 3082.4 km N.

If construction has not commenced within 18 months of issuance of this permit, then the permittee shall obtain from the Department a review and, if necessary, a revision of the BACT determination and allowable emissions for the emission unit/source on which construction has not commenced.

The emission unit/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. Cargill Fertilizer's application received November 24, 1993.
2. Department's letter dated December 20, 1993.
3. Cargill Fertilizer's letter dated June 10, 1994.
4. Department's letter dated July 11, 1994.
5. Cargill Fertilizer's letter dated August 10, 1994.

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

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

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 Rules 62-4.120 and 62-30.300, 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

GENERAL CONDITIONS:

for 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. The maximum production rate of the No. 8 sulfuric acid plant shall not exceed 2900 tons per day (TPD) based on 100% sulfuric acid (H_2SO_4).

2. The maximum production rate of the No. 9 sulfuric acid plant shall not exceed 3200 TPD based on 100% H_2SO_4.

3. The combined maximum production rate of the No. 8 and No. 9 sulfuric acid plants shall not exceed 5700 TPD based on 100% H_2SO_4.

4. Nitrogen oxides, (NO_x) emissions from the plants shall not exceed 0.12 lb/ton of 100% H_2SO_4 produced, 14.5 lbs/hr, 63.5 tons/yr from the No. 8 H_2SO_4 plant, and 16.0 lbs/hr, 70.1 tons/yr from the No. 9 H_2SO_4 plant.

5. Testing of emissions shall be conducted with the emission unit operating at permitted capacity. Permitted capacity is defined as 90-100% of the maximum operating rate allowed by the permit. If it is impracticable to test at permitted capacity, then emission units may be tested at less than 90% of the maximum operating rate allowed by the permit. In this case, subsequent emission unit operation is limited to 110% of the test load until a new test is

SPECIFIC CONDITIONS:

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, with prior notification to the Department. The Department's Southwest District office shall be notified in writing 15 days prior to emission unit testing. Written reports of the tests shall be submitted to that office within 45 days of test completion.

6. The No. 8 and No. 9 sulfuric acid plants shall be allowed to operate continuously (i.e., 8760 hours/year).

Standard for sulfur dioxide.

7. Sulfur dioxide (SO_2) emissions from each sulfuric acid production unit shall be as follows, [Rule 62-296.800, F.A.C.; 40 CFR 60.82(a)]:

Plants	Production TPD	lb/ton	lbs/hr	TPY
H_2SO_4 No. 8	2900	4	483.3	2,117
H_2SO_4 No. 9	3200	4	533.3	2,336
No. 8 & No. 9 Combined	5700	4	950	4,161

Standard for acid mist.

8. Acid mist emissions, expressed as H_2SO_4, from each sulfuric acid production unit shall be as follows; [Rule 62-296.800, F.A.C.; 40 CFR 60.83(a)(1)]

Plants	Production TPD	lb/ton	lbs/hr	TPY
H_2SO_4 No. 8	2900	0.15	18.1	79.3
H_2SO_4 No. 9	3200	0.15	20.0	87.6
No. 8 & No. 9 Combined	5700	0.15	35.6	156.0

9. Visible emissions from each sulfuric acid production unit shall not be greater than 10 percent opacity.
[Rule 62-296.800, F.A.C.; 40 CFR 60.83(a)(2)]

SPECIFIC CONDITIONS:

Emission monitoring

10. A continuous monitoring system for the measurement of sulfur dioxide shall be installed, calibrated, maintained, and operated. The pollutant gas used to prepare calibration gas mixtures under Performance Specification 2 and for calibration checks under 40 CFR 60.13(d) shall be sulfur dioxide (SO_2). Method 8 shall be used for conducting monitoring system performance evaluations under 40 CFR 60.13(c) except that only the sulfur dioxide portion of the Method 8 results shall be used. The span value shall be set at 1000 ppm of sulfur dioxide. [Rule 62-296.800, F.A.C.; 40 CFR 60.84(a)]

11. A conversion factor shall be established by the owner or operator for the purpose of converting monitoring data into units of the applicable standard (kg/metric ton, lbs/ton). The conversion factor shall be determined, as a minimum, three times daily by measuring the concentration of sulfur dioxide entering the covertor using suitable methods (e.g., the Reich test, National Air Pollution Control Administration Publication No. 999-AP-13) and calculating the appropriate conversion factor for each eight-hour period as follows:

$CF=k[(1,000-0.015r)/(r-s)]$
where:
CF=conversion factor (kg/metric ton per ppm, lb/ton per ppm).
k=constant derived from material balance. For determining CF in metric units,k=0.0653.
For determining CF in English units, k=0.1306.
r=percentage of sulfur dioxide by volume entering the gas coverter. Appropriate corrections must be made for air injection plants subject to the Administrator's approval.
s=percentage of sulfur dioxide by volume in the emissions to the atmosphere determined by the continuous monitoring system required under 40 CFR 60.84(a).
[Rule 62-296.800, F.A.C.; 40 CFR 60.84(b)]

12. The owner or operator shall record all conversion factors and values under 40 CFR 60.84(b) from which they were computed (i.e., CF, r, and s).
[Rule 62-296.800, F.A.C.; 40 CFR 60.84(c)]

13. Alternatively, a source that processes elemental sulfur or an ore that contains elemental sulfur and uses air to supply oxygen may use the following continuous emission monitoring approach and calculation procedures in determining SO_2 emission rates in terms of the standard. This procedure is not required, but is an alternative that would alleviate problems encountered in the

SPECIFIC CONDITIONS:

measurement of gas velocities or production rate. Continuous emission monitoring of SO_2, O_2, and CO_2 (if required) shall be installed, calibrated, maintained, and operated by the owner or operator and subjected to the certification procedures in Performance Specifications 2 and 3. The calibration procedure and span value for this SO_2 monitor shall be as specified in 40 CFR 60.84(b). The span value for CO_2 (if required) shall be 10 percent and for O_2 shall be 20.9 percent (air). A conversion factor based on process rate data is not necessary.

Calculate the SO_2 emission rate as follows:
$Es=(csS)/[0.265-(0.126\%O_2)-(A\ \%CO_2)]$
where:
Es=emission rate of SO_2, kg/metric ton (lb/ton) of 100 percent of H_2SO_4 producted.
Cs=concentration of SO_2, kg/dscm (lb/dscf).
S=acid production rate factor, 368 dscm/metric ton (11,800 dscf/ton) of 100 percent H_2SO_4 produced.
$\%O_2$=oxygen concentration, percent dry basis.
A=auxiliary fuel factor,
=0.00 for no fuel.
=0.0226 for methane.
=0.0217 for natural gas.
=0.0196 for propane.
=0.0172 for No 2 oil.
=0.0161 for No 6 oil.
=0.0148 for coal.
=0.0126 for coke.
$\%CO_2$=carbon dioxide concentration, percent dry basis.

Note: It is necessary in some cases to convert measured concentration units to other units for these calculations: Use the following table for such conversions:

From-	To-	Multiply by-
g/scm	kg/scm	10-3
mg/scm	kg/scm	10-6
ppm(SO_2)	kg/scm	2.660x10-6
ppm(SO_2)	lb/scf	1.660x10-7

[Rule 62-296.800, F.A.C.; 40 CFR 60.84(d)]

Test methods and procedures.

14. Testing shall be conducted in accordance with the test methods in 40 CFR 60, Appendix A, or other methods and procedures as specified in 40 CFR 60.85, except as provided in 40 CFR 60.8(b). Acceptable alternative methods and procedures are given in 40 CFR 60.85(b).
[Rule 62-296.800, F.A.C.; 40 CFR 60.85(a)]

SPECIFIC CONDITIONS:

15. Compliance with the SO_2, acid mist, and visible emission standards in 40 CFR 60.82(a), 40 CFR 60.833(a)(1), and 40 CFR 60.83(a)(2) shall be determined as follows:
a. The emission rate (E) of acid mist or SO_2 shall be computed for each run using the following equation:

E=(CQsd)/(PK)
where:
E=emission rate of acid mist or SO_2 kg/metric ton (lb/ton) of 100 percent H_2SO_4 produced.
C=concentration of acid mist or SO_2, g/dscm (lb/dscf).
Qsd=volumetric flow rate of the effluent gas, dscm/hr (dscf/hr).
P=production rate of 100 percent H_2SO_4, metric ton/hr (ton/hr).
K=conversion factor, 1000 g/kg (1.0 lb/lb).

b. Method 8 shall be used to determine the acid mist and SO_2 concentrations (C's) and the volumetric flow rate (Qsd) of the effluent gas. The moisture content may be considered to be zero. The sampling time and sample volume for each run shall be at least 60 minutes and 1.15 dscm (40.6 dscf).

c. Suitable methods shall be used to determine the production rate (P) of 100 percent H_2SO_4 for each run. Material balance over the production system shall be used to confirm the production rate.

d. Method 9 and the procedures in 40 CFR 60.11 shall be used to determine opacity.
[Rules 62-296.800 and 62-297.401, F.A.C.; 40 CFR 60.85(b)]

16. The owner or operator may use the following as alternatives to the reference methods and procedures otherwise specified in this permit:
a. If an emission unit processes elemental sulfur or an ore that contains elemental sulfur and uses air to supply oxygen, the following procedure may be used instead of determining the volumetric flow rate and production rate:
(1) The integrated technique of Method 3 is used to determine the O_2 concentration and, if required, CO_2 concentration.
(2) The SO_2 or acid mist emission rate is calculated as described in 40 CFR 60.84(d), substituting the acid mist concentration for Cs as appropriate.
[Rules 62-296.800 and 62-297.401, F.A.C.; 40 CFR 60.85(c)]

17. No objectionable odors shall be allowed in accordance with Rule 62-296.200(123), F.A.C., [Objectionable Odor Prohibited].

18. Any change in the method of operation, equipment or operating hours which would reasonably be expected to result in an increase in emissions shall be submitted to the Department's Southwest District office for approval.

SPECIFIC CONDITIONS:

19. Excess emissions from the sulfuric acid plant resulting from startup, shutdown, malfunction, or load change shall be acceptable 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 three hours in any 24-hour period unless specifically authorized by the Department for a longer duration. Best operating practices shall be as follows:

a. Except as follows, only one sulfuric acid plant at a facility shall be started up and burning sulfur at a time. There are times when it will be acceptable for more than one sulfuric acid plant to be in the start-up mode at the same time, provided the following condition is met. It is not acceptable to initiate sulfur burning at one sulfuric acid plant when another plant at the same facility is emitting SO_2 at a rate in excess of the emission limits imposed by the permit or rule, as determined by the CEMs emission rates for the 20 minutes immediately preceeding the initiation of sulfur burning.

b. A plant start-up must be at the lowest practicable operation rate, not to exceed 70 percent of the designated operation rate, until the SO_2 monitor indicates compliance. Because production rate is difficult to measure during start-up, if a more appropriate indicator (such as blower pressure, furnace temperature, gas strength, blower speed, number of sulfur guns operating, etc.) can be documented, tested and validated, the Department will accept this in lieu of directly documenting the operation rate. Implementation requires the development of a suitable list of surrogate parameters to demonstrate and document the reduced operating rate on a plant-by-plant basis. Documentation that the plant is conducting start-up at the reduced rate is the responsibility of the owner or operator

c. Sulfuric acid plants are authorized to emit excess emissions from start-up for a period of three consecutive hours provided best operational practices, in accordance with this agreement, to minimize emissions are followed. No plant shall be operated (with sulfur as fuel) out of compliance for more than three consecutive hours. Thereafter, the plant shall be shut down. The plant shall be shut down (cease burning sulfur) if, as indicated by the continuous emission monitoring system, the plant is not in compliance within three hours of start-up. Restart may occur as soon as practicable following any needed repairs or adjustments, provided the corrective action is taken and properly documented.

SPECIFIC CONDITIONS:

d. Cold Start-Up Procedures.

(1) Converter.

(i) The inlet and outlet temperature at the first two masses of catalyst shall be sufficiently high to provide immediate ignition when SO_2 enters the masses. In no event shall the inlet temperature to the first mass be less than 800°F or the outlet temperature to the first two masses be less than 700°F.

These temperatures are the desired temperatures at the time the use of auxiliary fuel is terminated.

(ii) The gas stream entering the converter shall contain SO_2 at a level less than normal, and sufficiently low to promote catalytic conversion to SO_3.

(2) Absorbing Towers.

The concentration, temperature and flow of circulating acid shall be as near to normal conditions as reasonably can be achieved. In no event shall the concentration be less than 96 percent H_2SO_4.

e. Warm Restart.

(1) Converter.

The inlet and outlet temperatures of the first two catalyst masses should be sufficiently high to ensure conversion. One of the following three conditions must be met:

(i) The first two catalyst masses inlet and outlet temperatures must be at a minimum of 700°F; or

(ii) Two of the four inlet and outlet temperatures must be greater than or equal to 800°F; or

(iii) The inlet temperature of the first catalyst must be greater than or equal to 600°F and the outlet temperature greater than or equal to 800°F. Also, the inlet and outlet temperatures of the second catalyst must be greater than or equal to 700°F.

Failure to meet one of the above conditions, requires use of cold start-up procedures.

To allow for technological improvements or individual plant conditions, alternative conditions will be considered by the Department in appropriate cases.

SPECIFIC CONDITIONS:

(2) Absorbing Towers.

The concentration, temperature and flow of circulating acid shall be as near to normal conditions as reasonably can be achieved. In no event shall the concentration be less than 96 percent H_2SO_4.

20. Stack sampling facilities shall be provided by the permittee in accordance with Rule 62-297.345, F.A.C.

21. The permittee, for good cause, may request that this construction permit be extended. Such a request shall be submitted to the Department's Bureau of Air Regulation prior to 60 days before the expiration of the permit (Rule 62-4.090, F.A.C.).

22. An application for an operation permit must be submitted to the Department's Southwest District office at least 90 days prior to the expiration date of this construction permit or within 45 days after completion of compliance testing, whichever occurs first. The operation permit application shall include a set of conditions acceptable to the Department for startup/shutdown of the permittee's sulfuric acid plant. 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 (Rules 62-4.055 and 62-4.220, F.A.C.).

Issued this _____ day
of _____, 1994

STATE OF FLORIDA DEPARTMENT
OF ENVIRONMENTAL PROTECTION

_____
Virginia B. Wetherell, Secretary

Best Available Control Technology (BACT) Determination
Cargill Fertilizer, Inc.
Hillsborough County
Permit Number AC 29-241660
PSD-FL-209

The applicant proposes to increase No. 8 sulfuric acid plant production from 2500 tons per day (TPD) to 2,900 TPD and No. 9 sulfuric acid plant from 2,800 TPD to 3,200 TPD at the Cargill's phosphate fertilizer manufacturing facility on Highway 41 South in Riverview, Hillsborough County, Florida.

The proposed project will result in a significant increase in emissions of sulfur dioxide (SO_2) and sulfuric acid mist. 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.).

The BACT review is part of the PSD review requirements in accordance with Rule 62-212.410, F.A.C.

Date of Receipt of a BACT Application: November 24, 1993.

Date Application Complete: August 29, 1994.

The BACT determination requested by the applicant is presented below:

Control Technology: Double Absorption/Fiber Mist Eliminators

Pollutant	Emission Limits
SO_2	4 lbs/ton of 100% H_2SO_4 produced
Sulfuric Acid Mist	0.15 lb/ton of 100% H_2SO_4 produced
Visible Emissions	10% opacity

Basis of Review:

This determination was based upon input from the applicant, EPA Region IV, and the Department's Bureau of Air Regulation.

BACT Determination Procedure:

In accordance with Chapter 62-212, F.A.C., 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:

(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	Double Absorption/Fiber Mist Eliminators
Pollutant	Emission Limits
SO_2	4.0 lbs/ton of 100% H_2SO_4 produced
Sulfuric Acid Mist	0.15 lb/ton of 100% H_2SO_4 produced
Visible Emissions	10% opacity

BACT Determination Rationale

The Department's BACT determination is the same as that proposed by the applicant, determination completed by other states, and Standards of Performance for Sulfuric Acid Plants, 40 CFR 60 Subpart H, (double absorption process). The process in itself is the control technology for SO_2. The emission limits reflect conversion efficiency of around 99.7% of SO_2 to H_2SO_4. High efficiency mist eliminators are considered BACT for sulfuric acid mist. A review of BACT/LAER Clearinghouse indicates that the double absorption technology and the use of high efficiency mist eliminators is representative of BACT using the top-down approach.

Environmental Impact Analysis

The impact analysis for the BACT determination is based on 8,760 hours/year operation. The increment impact analysis and the ambient air quality analysis resulted in the following for SO_2 emissions:

Avg Time	Increment Impact (ug/m^3)	Increment (ug/m^3)	Predicted Ambient Air Quality Impact (ug/m^3)	Fla. AAQS (ug/m^3)
24-hr	26	91	239	260
3-hr	100	512	685	1300

Conclusion

The incremental impact and the ambient air quality impact from SO_2 emissions due to the proposed modification is in compliance with all air pollution regulations. 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:

Syed Arif, Permit Engineer
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

_____, 1994
Date

Approved by:

Virginia B. Wetherell, Secretary
Dept. of Environmental Protection

_____, 1994
Date

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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.
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- The Return Receipt will show to whom the article was delivered and the date delivered.

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1. ☐ Addressee's Address
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Consult postmaster for fee.

3. Article Addressed to:
Mr. David B. Jellerson, P.E.
Environmental Superintendent
Cargill Fertilizer, Inc.
P. O. Box 9002
Bartow, FL 33830

4a. Article Number
P 872 562 683

4b. Service Type
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7. Date of Delivery
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P.O., State and ZIP Code Bartow, FL 33830	
Postage	$
Certified Fee	
Special Delivery Fee	
Restricted Delivery Fee	
Return Receipt Showing to Whom & Date Delivered	
Return Receipt Showing to Whom, Date, and Addressee's Address	
TOTAL Postage & Fees	$
Postmark or Date Mailed: 11-14-94 Permit: AC53-241660 PSD-FL-209	

PS Form 3800, JUNE 1991