

Florida Department of Environmental Regulation

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

Lawton Chiles, Governor

Carol M. Browner, Secretary

May 22, 1991

CERTIFIED MAIL-RETURN RECEIPT REQUESTED

Mr. John A. Brafford
Vice President & General Manager
IMC Fertilizer, Inc.
P. O. Box 1035
Mulberry, Florida 33860

Dear Mr. Brafford:

Attached is one copy of the Technical Evaluation and Preliminary Determination and proposed permit for IMC Fertilizer, Inc. to increase the production rates of sulfuric acid plants Nos. 1-5 at their facility near Mulberry, Florida.

Please submit any written comments you wish to have considered concerning the Department's proposed action to Mr. Barry Andrews 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, SW Dist.
J. Harper, EPA
C. Shaver, NPS
J. Koogler, P.E.

P 407 852 706
RECEIPT FOR CERTIFIED MAIL
 NO INSURANCE COVERAGE PROVIDED
 NOT FOR INTERNATIONAL MAIL
 (See Reverse)

U.S.G.P.O. 1989-234-555

Sent to John Brafford	
Street and No. Imc	
P.O. State and ZIP Code Mulberry, Fl	
Postage	\$
Certified Fee	
Special Delivery Fee	
Restricted Delivery Fee	
Return Receipt showing to whom and Date Delivered	
Return Receipt showing to whom, Date, and Address of Delivery	
TOTAL Postage and Fees	\$
Postmark or Date 5-22-91 AC 53-192221 PSD-FI-170	

PS Form 3800, June 1985

SENDER: Complete items 1 and 2 when additional services are desired, and complete items 3 and 4.

Put your address in the "RETURN TO" Space on the reverse side. Failure to do this will prevent this card from being returned to you. The return receipt fee will provide you the name of the person delivered to and the date of delivery. For additional fees the following services are available. Consult postmaster for fees and check box(es) for additional service(s) requested.

1. Show to whom delivered, date, and addressee's address. (Extra charge) 2. Restricted Delivery (Extra charge)

3. Article Addressed to: Mr. John A. Brafford Vice President & Gen. Mgr. Imc Fertilizer, Inc P.O. Box 1035 Mulberry, Fl 33860	4. Article Number P 407 852 706
5. Signature - Addressee X	Type of Service: <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
6. Signature - Agent X D. Perkins	Always obtain signature of addressee or agent and DATE DELIVERED .
7. Date of Delivery 5-28-91	8. Addressee's Address (ONLY if requested and fee paid)

BEFORE THE STATE OF FLORIDA
DEPARTMENT OF ENVIRONMENTAL REGULATION

In the Matter of
Application for Permit by:

IMC Fertilizer, Inc.
P. O. Box 1035
Mulberry, Florida 33860

DER File No. AC 53-192221
PSD-FL-170

INTENT TO ISSUE

The Department of Environmental Regulation hereby gives notice of its intent to issue an air construction permit (copy attached) for the proposed project as detailed in the application specified above. The Department is issuing this Intent to Issue for the reasons stated in the attached Technical Evaluation and Preliminary Determination.

The applicant, IMC Fertilizer, applied on February 4, 1991, to the Department of Environmental Regulation for a permit to increase the production rates of sulfuric acid plants Nos. 1-5 at their facility near Mulberry, Polk County, Florida.

The Department has permitting jurisdiction under Chapter 403, Florida Statutes, and Florida Administrative Code Chapters 17-2 and 17-4. The project is not exempt from permitting procedures. The Department has determined that an air construction permit is required for the proposed work.

Pursuant to Section 403.815, F.S. and DER 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, at the address specified 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 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:

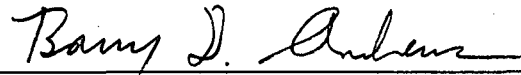
- (a) The name, address, and telephone number of each petitioner, the applicant's name and address, the Department Permit File Number and the county in which the project is proposed;
- (b) A statement of how and when each petitioner received notice of the Department's action or proposed action;
- (c) 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 notice. Persons whose substantial interests will be affected by any decision of the Department with regard to the application(s) 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 in 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



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

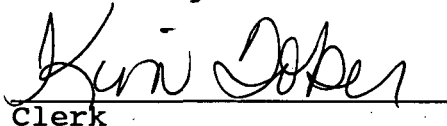
Copies furnished to:

B. Thomas, SW Dist.
J. Harper, EPA
C. Shaver, NPS
J. Koogler, P.E.

CERTIFICATE OF SERVICE

The undersigned duly designated deputy clerk hereby certifies that this NOTICE OF INTENT TO ISSUE and all copies were mailed before the close of business on 5-22-91.

FILING AND ACKNOWLEDGEMENT
FILED, on this date, pursuant to §120.52(9), Florida Statute, with the designated Department Clerk, receipt of which is hereby acknowledged.


Clerk

5-22-91
Date

State of Florida
Department of Environmental Regulation
Notice of Intent to Issue

The Department of Environmental Regulation hereby gives notice of its intent to issue a permit to IMC Fertilizer, Inc., State Road 640 and County Line Road, PO Box 1035, Mulberry, Florida 33860, to increase the production rates of sulfuric acid plants Nos. 1-5 at their facility near Mulberry, Polk 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 actual sulfuric acid production at the IMC facility by approximately 15.8% and is not expected to result in significant deterioration of the environment. Modeling results showed that increases in ambient ground-level concentrations for all averaging times are less than the PSD significant impact levels for SO₂. The impact of this project on the nearest Class I area, Chassahowitzka National Wilderness Area, was not a consideration since this area is over 100 kilometers from the applicant's facility. 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 fourteen (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(s) 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 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. Barry Andrews at the Department's Tallahassee address. All comments mailed 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

IMC Fertilizer, Inc.
Polk County
Mulberry, Florida

Sulfuric Acid Plants (Nos. 1-5)
Production Increases to 2,900 TPD

Permit No. AC 53-192221
PSD-FL-170

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

May 22, 1991

I. Application Information

A. Applicant

IMC Fertilizer, Inc.
P. O. Box 1035
Mulberry, Florida 33860

B. Request

The Department received an application on February 4, 1991, for a permit to increase the production rate of the five sulfuric acid plants at the applicant's phosphate complex near Mulberry, Florida. After receiving additional information on March 18, the application was deemed complete.

C. Classification/Location

The applicant's facility (SIC Code 2819) is located off State Road 640 and County Line Road near Mulberry, Florida, with latitude of 27°49'56"N and longitude of 82°02'60"W. The UTM coordinates of the site are: Zone 17, 396.6 km E and 3078.9 km N.

II. Project Description/Emissions

It is proposed to increase the allowable annual production rate of the applicant's five sulfuric acid plants from 4,881,500 to 5,292,500 TPY. The proposed project will increase each plant's daily sulfuric acid capacity to 2900 TPD as shown below:

Plant	Present Capacity (TPD)	Present Hours	New Capacity (TPD)	New Hours
1	2700	8760	2900	8760
2	2700	8760	2900	8760
3	2700	8760	2900	8760
4	2750	8400	2900	8760
5	2750	8400	2900	8760

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

Pollutant	Emissions (tons/yr)			Significant Increase
	Present	Proposed	Net Increase	
SO ₂	7530	10,585	3055	40
Acid Mist	93	397	304	7
NO _x	?*	214	Over 40	40

*The applicant states that their NO_x emission factor of 1.15(10)⁻⁶ lbs/dscf is based on testing of the No. 5 plant. However, the

application contains no raw data nor is there any indication of the number of tests done. Without sufficient results to show otherwise, the Department believes that the prior generic emission factor of $2.1(10)^{-6}$ lbs/dscf, being based on several tests, would indicate that this production increase will probably cause a greater than significant increase in NOx emissions. Also, if a BACT-based NOx emission limit of 0.12 lb/ton is applied to the actual vs. proposed allowable tonnage increase, it is clear that the NOx emissions increase will be significant: $(0.12 \text{ lb NOx/ton}) (721,909 \text{ tons/yr}) (\text{ton}/2000 \text{ lbs}) = 43.3 \text{ tons NOx/yr}$. Therefore, for this production increase, the Department will not require a NOx air quality analysis but will impose a BACT-based limit for NOx emissions.

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 attainment for each of the regulated air pollutants. 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 increases in SO₂, acid mist, and NOx emissions exceed significant levels 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 60.80, and 17-2.700, Table 700-1, apply to this production increase. Emissions will be limited by the federal new source performance standards for sulfur dioxide, acid mist, and visible emissions, and a BACT determination for NOx.

IV. Air Quality Analysis

a. Introduction

The production rate increases at the five existing sulfuric acid plants will result in emissions increases which are projected to be greater than the PSD significant rate. 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 the pollutant, which includes:

- o An analysis of existing air quality.
- o A PSD increment analysis for SO₂.
- 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 projected production rate increases, 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 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 SO₂ is given below:

PSD de minimus concentration (ug/m ³)	13
Averaging Time	24-hr
Maximum Predicted Impact (ug/m ³)	4.84

There are no monitoring de minimus concentrations for H₂SO₄ mist. As shown above, the predicted impact is less than the corresponding de minimus concentration; therefore, no preconstruction monitoring is necessary for either pollutant subject to PSD review.

c. Modeling Method

The EPA-approved Industrial Source Complex Short-Term (ISCST) dispersion model was used by the applicant to predict the impact of the proposed project on the surrounding ambient air. All recommended EPA default options were used. No downwash analysis was performed since all of the stacks are less than 65 meters in height, but are high enough (2.5 times the building heights) to be above the influence of nearby structures. 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. Modeling Results

The applicant first evaluated the potential increase in ambient ground-level concentrations associated with the project to determine if these predicted ambient concentration increases would be greater than the specified PSD significant impact levels for SO₂. 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: 1.5, 1.75, 2.0, 3.0, and 4.0 km. The receptor ring at 1.5 km corresponds to the nearest property boundary. The results of this modeling presented below show that the increases in ambient ground-level concentrations for all averaging times are less than the PSD significant impact levels for SO₂.

Averaging Time	SO ₂		
	Annual	3-hr	24-hr
PSD Significance Level (ug/m ³)	1.0	25.0	5.0
Ambient Concentration Increase (ug/m ³)	0.93	18.83	4.84

Therefore, further dispersion modeling for comparison with AAQS and PSD increment consumption was not required in this case. The impact of this project on the Class I SO₂ increments in the Chassahowitzka National Wilderness Area (the nearest Class I area) was not evaluated by the applicant or the Department since this area is located 104 km away from the facility.

Sulfuric acid mist is a non-criteria pollutant, which means that neither a national ambient air quality standard nor a PSD Significant Impact has been defined for this pollutant. However, the Department does have a draft Air Toxics Permitting Strategy which defines a no-threat level of 2.4 ug/m³, 24-hour average for sulfuric acid mist. The Department used the same modeling procedure described above to evaluate the maximum ground level concentration of sulfuric acid mist due to the facility. The result was 4.96 ug/m³. Even though the maximum predicted acid mist ground-level concentration due to the facility is greater than the no-threat level, the sulfuric acid plants are subject to federal New Source Performance Standards and stringent "top-down" BACT emission limits for controlling the emissions of sulfuric acid mist. The use of double absorption technology and high efficiency mist eliminators is representative of the best sulfuric acid mist control available.

e. Additional Impacts Analysis

The increased emissions at the sulfuric acid plants are not expected to affect the visibility in the Chassahowitzka National Wilderness Area located 104 km from the project. Because the impacts from the proposed pollutants are predicted to be less than PSD significance levels, no harmful effects on soils and vegetation

are 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 IMC 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.

