

# Florida Department of Environmental Regulation

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

Bob Martinez, Governor

Dale Twachtmann, Secretary

John Shearer, Assistant Secretary

January 12, 1990

CERTIFIED MAIL - RETURN RECEIPT REQUESTED

Mr. J. A. Brafford  
IMC Fertilizer, Inc.  
P. O. Box 1035  
Mulberry, Florida 33860

Dear Mr. Brafford:

Re: IMC Sulfur Permit, AC 53-163774

The Department has received your request dated December 28, 1989, for an extension of the expiration date for the above permit.

The Department is in agreement with your request. The following change shall be made in the permit:

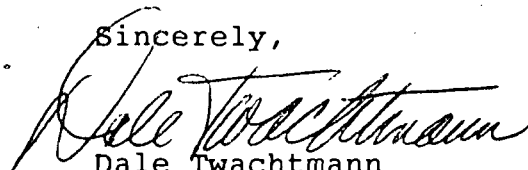
Expiration Date Change

From: April 1, 1990

To: August 1, 1990

This letter shall be attached to your construction permit AC 53-163774, and shall become a part of the permit.

Sincerely,

  
Dale Twachtmann  
Secretary

DT/plm

c: B. Thomas, SW District  
J. Koogler, P.E.



**CERTIFIED MAIL**  
**RETURN RECEIPT REQUESTED**

December 28, 1989

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

RE: AC53-163774 - Molten Sulfur System

Dear Mr. Fancy:

IMC Fertilizer, Inc., New Wales Operations, has just received Construction Permit No. AC53-163774 for the existing Molten Sulfur System with an expiration date of April 1, 1990. This permit was received at New Wales on December 19, 1989, and Specific Condition No. 11 states that an operating permit application must be submitted 90 days prior to the expiration date. We do not have time to prepare the required operating permit request and do the necessary VE's by December 31, 1989, as required by the permit. We would appreciate it if your office could extend the Construction Permit date until July 1, 1990.

Jerry Girardin of my office spoke with Pradeep and explained the situation and Pradeep mentioned that the other permits for sulfur systems had expiration dates of January, 1991. We do not feel that we need the 1991 expiration date but would appreciate an extension of our permit until July, 1990.

If there is any question regarding this request, please let me know.

Sincerely yours,

A handwritten signature in cursive script that reads 'J. M. Baretincic'.

J. M. Baretincic  
Director  
Environmental Services

JMB/dws  
(026)

CC: J. A. Brafford  
A. L. Girardin  
W. C. Thomas - DER Tampa



FERTILIZER, INC.

RECEIVED

NOV 17 1989

DER-BAQM

CERTIFIED MAIL  
RETURN RECEIPT REQUESTED

November 14, 1989

Mr. Bill Thomas  
FLORIDA DEPARTMENT OF ENVIRONMENTAL  
REGULATION  
Bureau of Air Regulation  
2600 Blair Stone Road  
Tallahassee, Florida 32399-2400

Dear Sir:

Enclosed please find a copy of the Affidavit of Publication for the Notice of Intent to issue the molten sulfur storage and handling system permit.

If you have any questions regarding this letter, please let me know.

Sincerely,

J. M. Baretincic  
Director  
Environmental Services

dws  
081/JMB#6

CC: J. A. Brafford  
A. L. Girardin, III

*P. Kaval*  
*B. Stovall, sui Dist*

# AFFIDAVIT OF PUBLICATION

**THE LEDGER**  
**Lakeland, Polk County, Florida**

Case No.....

STATE OF FLORIDA)  
COUNTY OF POLK )

Before the undersigned authority personally appeared Stephen DeWitt, who on oath says that he is Controller of The Ledger, a daily newspaper published at Lakeland in Polk County, Florida; that the attached copy of advertisement, being a .....

Notice of Intent .....

In the matter of .....

Sulfur Storage .....

In the .....

Court, was published in said newspaper in the issues of .....

October 24, 1989 .....

Affiant further says that said The Ledger is a newspaper published at Lakeland, in said Polk County, Florida, and that the said newspaper has heretofore been continuously published in said Polk County, Florida, daily, and has been entered as second class matter at the post office in Lakeland, in said Polk County, Florida, for a period of one year next preceding the first publication of the attached copy of advertisement; and affiant further says that he has neither paid nor promised any person, firm or corporation any discount, rebate, commission or refund for the purpose of securing this advertisement for publication in the said newspaper.

Signed .....

*Stephen DeWitt*  
Controller  
*for Stephen DeWitt*

Sworn to and subscribed before me this 2nd .....

day of November A.D. 19 89 .....

(Seal)

*Barbara Thejo*  
Notary Public, Florida

My Commission Expires .....

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 EMC Fertilizer, Inc., Post Office Box 1035, Aubrey, FL 33660, for the existing motion sulfur storage and handling system located at EMC's New Wales facility in Polk County, Florida. A determination of the Best Available Control Technology (BACT) was not required. The Department is issuing this intent to issue for the reasons stated in the Technical Evaluation and Preliminary Determination of Significant

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 the General Counsel of the Department at 2600 Bob 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 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;
- (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 the proceeding. Any subsequent intervention will only be of the approval of the presiding officer upon motion filed pursuant to Rule 283.201, 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 Bob Stone Road  
Tallahassee, Florida 32399-2400  
Dept. of Environmental Regulation  
Southwest District Office  
4520 Oak For Boulevard  
Tampa, Florida 336107347

Any person may send written comments to the proposed action to Mr. Bill Thomas at the Department's Tallahassee address. All comments mailed within 14 days of the publication of this notice will be considered in the Department's final determination.  
E640 - 1074, 1989



**CERTIFIED MAIL**  
**RETURN RECEIPT REQUESTED**

October 9, 1989

Mr. W. A. Thomas  
Florida Department of Environmental  
Regulation  
2600 Blair Stone Road  
Tallahassee, Florida 32399-2400

Dear Sir:

There are several items in proposed construction permit AC53-163774, Molten Sulfur Storage and Handling System, which we are concerned about.

The first, and most critical, is Item #2 under Specific Conditions.

Jerry Girardin called your office today and spoke with Pradeep Ravel regarding this clause. As he explained to Pradeep, due to scheduling problems with sulfur deliveries it is possible to run short for several days and not receive sufficient sulfur. In order to make up the differences, we would then order larger amounts of sulfur than normal and could receive up to 6500 TPD. As an alternative to the existing wording we would suggest that the clause read as follows: "The maximum molten sulfur throughput rate shall not exceed 1,650,000 tons per year (TPY), based on the combined maximum permitted sulfuric acid production rate of 13,600 TPD 100% sulfuric acid."

The above suggested change in this clause will control the sulfur use at a rate consistent with our current permits but will not penalize us with respect to deliveries.

J. M. Baretincic



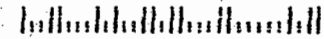
FERTILIZER, INC.

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



CERTIFIED MAIL  
RETURN RECEIPT REQUESTED

Mr. W. A. Thomas  
FLORIDA DEPARTMENT OF ENVIRONMENTAL  
REGULATION  
2600 Blair Stone Road  
Tallahassee, Florida 32399-2400



Mr. W. A. Thomas  
October 9, 1989  
Page Two

Our second concern is the VE requirement. How do we read and report the VE's? How many VE's must be performed at the storage vessels?

For example, the combined vessels have a total of 28 vents. Must we perform a separate VE for each vent or do we do a VE for each of the seven sources? The permit does not give us any guidance and we would appreciate some.

Due to the small nature of these sources, we would appreciate it if you could give some consideration to allowing VE's to be read every five years, prior to permit renewal, instead of annually.

Finally, on page one of the Technical Evaluation, the last paragraph refers to "rated" production tonnages. We suggest that the word "permitted" would be more suitable.

Thank you for the opportunity to comment on this permit and we will look forward to hearing from you regarding these concerns.

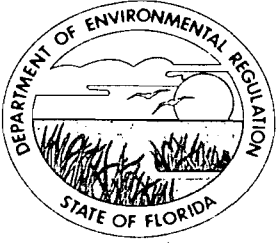
Sincerely,



J. M. Baretincic  
Director  
Environmental Services

JMB/d  
(071/JMB#6)

CC: J. A. Brafford  
A. L. Girardin  
G. D. Loughrie  
E. M. Newberg  
*P. Raval*  
*B. Thomas*  
CHP/BT



# Florida Department of Environmental Regulation

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

Bob Martinez, Governor

Dale Twachtmann, Secretary

John Shearer, Assistant Secretary

September 27, 1989

CERTIFIED MAIL-RETURN RECEIPT REQUESTED

Mr. J. A. Brafford  
IMC Fertilizer, Inc.  
Post Office Box 1035  
Mulberry, Florida 33860

Dear Mr. Brafford:

Attached is one copy of the Technical Evaluation and Preliminary Determination and proposed permit for IMC's molten sulfur storage and handling system at IMC's New Wales facility in Polk County, Florida.

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

Sincerely,

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

CHF/pr

Attachments

cc: B. Thomas, SW District  
J. Koogler, PE



BEFORE THE STATE OF FLORIDA  
DEPARTMENT OF ENVIRONMENTAL REGULATION

In the Matter of  
Application for Permit by:

IMC Fertilizer, Inc.  
Post Office Box 1035  
Mulberry, FL 33860

DER File No. AC 53-163774

---

INTENT TO ISSUE

The Department of Environmental Regulation hereby gives notice of its intent to issue a 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, Inc., applied on April 21, 1989, to the Department of Environmental Regulation for a construction permit for the existing molten sulfur storage and handling system located at IMC's New Wales facility in Polk County, Florida.

The Department has permitting jurisdiction under Chapter 403, Florida Statutes, and Florida Administrative Code Rules 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;

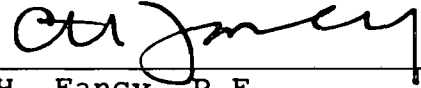
- (a) The name, address, and telephone number of each petitioner, the applicant's name and address, the Department Permit File Number and the county in which the project is proposed;
- (b) A statement of how and when each petitioner received notice of the Department's action or proposed action;
- (c) 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 applicant 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



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

Copies furnished to:

B. Thomas SW District  
J. Koogler, PE

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 9/27/89.

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

Kim D. Jaker  
Clerk

9/27/89  
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., Post Office Box 1035, Mulberry, FL 33860, for the existing molten sulfur storage and handling system located at IMC's New Wales facility in Polk County, Florida. A determination of the Best Available Control Technology (BACT) was not required. 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 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

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

Any person may send written comments on the proposed action to Mr. Bill Thomas at the Department's Tallahassee address. All comments mailed within 14 days of the publication of this notice will be considered in the Department's final determination.

Technical Evaluation  
and  
Preliminary Determination

IMC Fertilizer, Inc.  
Mulberry, Polk County  
Florida

Molten Sulfur Storage and Handling System

Permit Number: AC 53-163774

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

September 22, 1989

## I. Application

### A. Applicant

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

### B. Project and Location

The applicant proposes to permit the existing molten sulfur storage and handling system at IMC's New Wales phosphate processing facility in Polk County, Florida.

The UTM coordinates of this facility are Zone 17, 396.5 km East and 3078.9 km North.

### C. Facility Category

IMC's New Wales facility is major in accordance with Rule 17-2.100 of the Florida Administrative Code (F.A.C.). The molten sulfur storage and handling system consists of several existing minor sources within the facility. The Standard Industrial Classification (SIC) Code is Industry No. 2819, Sulfuric Acid/Phosphate Processing.

The NEDs Source Classification Code (SCC) is 3-01-070-02, Storage and Transfer, Industrial Inorganic Chemicals Production.

IMC applied for a construction permit on April 21, 1989, and the application was deemed complete on August 3, 1989.

## II. Project Description

IMC's molten sulfur storage and handling system consists of one 800 ton (T) railcar unloading pit; one 1500 T and one 350 T truck unloading pits; one 80 T transfer pit; one 5000 T molten sulfur storage tank; two 2000 T tanks; and the associated transfer pumps and piping. All the molten sulfur received is used in the manufacture of sulfuric acid.

There are five sulfuric acid plants at the IMC facility. Three are rated at 2700 tons per day (TPD) of 100% sulfuric acid, and the other two are rated at 2750 TPD. The annual molten sulfur requirement for these acid plants is about 1,615,000 tons per year (TPY).



The molten sulfur is delivered by 100 T capacity railcars at the rate of about six to ten cars every other day. Sulfur is also delivered by 25 T capacity trucks at the rate of about 160 trucks per day. The trucks are unique in that after sulfur is delivered to IMC, the trucks deliver granular fertilizer from IMC (dual purpose trucks). Of all the molten sulfur received at the IMC facility, about 60% is received in the No. 1 Truck Pit, about 30% is received in the No. 2 Truck Pit, and about 10% is received in the Rail Pit. The molten sulfur is either transferred from the receiving pits straight to the acid plants, or the sulfur is stored in the three storage tanks (depending upon the demand and the supply rates). The tanks and pits are steam heated to keep the sulfur molten.

The physical dimensions and the venting configuration of the tanks and pits are tabulated below:

Table 1 - Physical Description of Sources

<u>Source</u>	<u>Capacity</u>	<u>Dimensions</u>	<u>Vents</u>
No.1 Truck Pit	1500 T	100'x 36'x 9'	5
No.2 Truck Pit	350 T	51'x 21'x 8'	2
Rail Pit	800 T	146'x 12'x 8'	5
Transfer Pit	80 T	15'x 10'x 10'	1
No.1 Storage Tank	2000 T	40' dia. x 33'	4 rim, 1 center
No.2 Storage Tank	2000 T	40' dia. x 33'	4 rim, 1 center
No.3 Storage Tank	5000 T	60' dia. x 32'	4 rim, 1 center

Emissions of sulfur particulate matter (PM) and particulates less than 10 microns in size (PM<sub>10</sub>) from the individual tanks and pits are expected to be in the range of about 1 ton per year (TPY). Small amounts of sulfur dioxide (SO<sub>2</sub>), volatile organic compounds (VOCs), hydrogen sulfide (H<sub>2</sub>S), and reduced sulfur compounds (TRS) will also be emitted.

### III. Rule Applicability

The existing IMC New Wales facility is major in accordance with F.A.C. Rule 17-2.100. The molten sulfur storage and handling system emits primarily particulate matter and will be permitted in accordance with F.A.C. Rules 17-2 and 17-4; and, Chapter 403 of the Florida Statutes.

The facility is located in Polk County, an area designated as attainment for all the criteria pollutants, in accordance with F.A.C. Rule 17-2.420.

The project is not subject to the new source review requirements of F.A.C. Rule 17-2.500(5), Prevention of Significant Deterioration-Preconstruction Review Requirements, because the projected emissions do not exceed significance levels in Table 500-2.

The project is subject to F.A.C. Rule 17-2.520, Sources Not Subject to PSD or Nonattainment Requirements.

The project is subject to F.A.C. Rule 17-2.600(11), Specific Emission Limiting and Performance Standards for Sulfur Storage and Handling Facilities, which lists specific operational emission reduction procedures that are to be followed. Visible emissions (VE) will be limited to 20% opacity. The sources are not subject to a weight emission limiting standard, in accordance with F.A.C. Rule 17-2.600(11)(a)3, because the sources are not in a particulate matter air quality maintenance area or within five kilometers of such an area.

The project is subject to F.A.C. Rule 17-2.620, General Pollutant Emission Limiting Standards, which prohibits objectionable odors.

The project is subject to compliance testing and reporting requirements in accordance with F.A.C. Rule 17-2.700. Compliance testing for the sources shall be conducted using EPA Method 9 for visible emissions in accordance with F.A.C. Rule 17-2.700(6)(b)9.

#### IV. Source Impact Analysis

##### A. Emission Limitations

The maximum emissions from the molten sulfur system are estimated to be as follows, based on tests conducted on similar sources:

Table 2 - Emission Estimates

Source		PM/PM <sub>10</sub>	SO <sub>2</sub>	TRS/H <sub>2</sub> S	VOC
NO.1 Truck Pit	lb/hr	0.2	0.3	0.1	0.2
	TPY	0.8	1.2	0.6	0.7
No.2 Truck Pit	lb/hr	0.1	0.1	0.1	0.1
	TPY	0.3	0.5	0.2	0.3
Rail Pit	lb/hr	0.2	0.3	0.1	0.2
	TPY	0.8	1.2	0.6	0.7
Transfer Pit	lb/hr	0.1	0.1	0.1	0.1
	TPY	0.2	0.4	0.2	0.2
No.1 Storage Tank	lb/hr	0.6	0.5	0.2	0.3
	TPY	1.2	2.1	1.0	1.2
No.2 Storage Tank	lb/hr	0.6	0.5	0.2	0.3
	TPY	1.2	2.1	1.0	1.2
No.3 Storage Tank	lb/hr	0.6	0.5	0.2	0.3
	TPY	1.1	2.2	1.0	1.0

Visible emissions will be limited to 20% opacity.

## B. Air Quality Impacts

The technical evaluation of this project determined that ambient air monitoring or modeling would not be required to provide reasonable assurance that Florida's air quality standards would not be violated.

## V. Conclusion

Based on the information provided by IMC, the Department has reasonable assurance that the existing molten sulfur storage and handling system, 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 Chapter 17-2 of the Florida Administrative Code.





## Florida Department of Environmental Regulation

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

Bob Martinez, Governor

Dale Twachtmann, Secretary

John Shearer, Assistant Secretary

**PERMITTEE:**

IMC Fertilizer, Inc.  
Post Office Box 1035  
Mulberry, FL 33860

Permit Number: AC 53-163774  
Expiration Date: April 1, 1990  
County: Polk  
Latitude/Longitude: 27°49'56"N  
82°03'04"W

Project: Molten Sulfur Storage  
and Handling System

This permit is issued under the provisions of Chapter 403, Florida Statutes, and Florida Administrative Code Rule(s) 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 drawing(s), plans, and other documents attached hereto or on file with the Department and made a part hereof and specifically described as follows:

For the permitting of the IMC molten sulfur storage and handling system consisting of one 800 ton (T) railcar unloading pit; one 1500 T and one 350 T truck unloading pits; one 80 T transfer pit; one 5000 T molten sulfur storage tank; two 2000 T tanks; and the associated transfer pumps and piping. The molten sulfur system is located at the IMC New Wales facility in Polk County, Florida.

The UTM coordinates of this facility are Zone 17, 396.5 km East and 3078.9 km North.

The source shall be 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. IMC's application received April 21, 1989.
2. DER's letter dated May 17, 1989.
3. IMC's response received August 3, 1989.
4. DER's Preliminary Determination dated September 22, 1989.

PERMITTEE:  
IMC Fertilizer, Inc.

Permit Number: AC 53-163774  
Expiration Date: April 1, 1990

GENERAL CONDITIONS:

1. The terms, conditions, requirements, limitations, and restrictions set forth herein are "Permit Conditions" and as such are binding upon the permittee and enforceable pursuant to the authority of Sections 403.161, 403.727, or 403.859 through 403.861, Florida Statutes. The permittee is hereby placed on notice that the Department will review this permit periodically and may initiate enforcement action for any violation of the "Permit Conditions" by the permittee, its agents, employees, servants or representatives.

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. Nor 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 does not constitute 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, plant or aquatic life or property and penalties therefor caused by the construction or operation of this permitted source, 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.

PERMITTEE:  
IMC Fertilizer, Inc.

Permit Number: AC 53-163774  
Expiration Date: April 1, 1990

**GENERAL CONDITIONS:**

6. The permittee shall at all times properly operate and maintain the facility and systems of treatment and control (and related appurtenances) that are installed or used by the permittee to achieve compliance with the conditions of this permit, as required by Department rules. This provision includes the operation of backup or auxiliary facilities or similar systems when necessary to achieve compliance with the conditions of the permit and when required by Department rules.

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, access to the premises, at reasonable times, where the permitted activity is located or conducted for the purpose of:

- a. Having access to and copying any records that must be kept under the conditions of the permit;
- b. Inspecting the facility, equipment, practices, or operations regulated or required under this permit; and
- c. Sampling or monitoring 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 notify and provide the Department with the following information:

- a. a description of and cause of non-compliance; and
- b. the period of noncompliance, including exact 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 revocation of this permit.

PERMITTEE:  
IMC Fertilizer, Inc.

Permit Number: AC 53-163774  
Expiration Date: April 1, 1990

**GENERAL CONDITIONS:**

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 arising under the Florida Statutes or Department rules, except where such use is proscribed by Sections 403.73 and 403.111, Florida Statutes.

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 17-4.12 and 17-30.30, 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 is required to be kept at the work site of the permitted activity during the entire period of construction or operation.

13. The permittee shall comply with the following monitoring and record keeping requirements:

- a. Upon request, the permittee shall furnish all records and plans required under Department rules. The retention period for all records will be extended automatically, unless otherwise stipulated by the Department, during the course of any unresolved enforcement action.
- b. The permittee shall retain 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), copies of all reports required by this permit, and records of all data used to complete the application for this permit. The time period of retention shall be at least three years from the date of the sample, measurement, report or application unless otherwise specified by Department rule.

PERMITTEE:  
IMC Fertilizer, Inc.

Permit Number: AC 53-163774  
Expiration Date: April 1, 1990

**GENERAL CONDITIONS:**

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 date(s) analyses were performed;
- the person responsible for performing the analyses;
- the analytical techniques or methods used; and
- the results of such analyses.

14. 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 submitted or corrected promptly.

**SPECIFIC CONDITIONS:**

1. IMC's molten sulfur storage and handling system shall be allowed to operate continuously (i.e. 8760 hours/year).
2. The maximum molten sulfur throughput rate shall neither exceed 4500 tons per day (TPD), nor 1,625,000 tons per year (TPY), based on the combined maximum permitted sulfuric acid production rate of 13,600 TPD 100% sulfuric acid.
3. Visible emissions (VE) shall not exceed 20% opacity from any source in the molten sulfur system.
4. The permittee shall employ procedures to minimize emissions, from the molten sulfur system pursuant to the applicable requirements of F.A.C. Rule 17-2.600(11)(a) [Molten Sulfur Storage and Handling Facilities]. The permittee shall also comply with other applicable provisions of F.A.C. Chapters 17-2 and 17-4.
5. No objectionable odors shall be allowed, in accordance with F.A.C. Rule 17-2.620(2) [Objectionable Odor Prohibited].



PERMITTEE:  
IMC Fertilizer, Inc.

Permit Number: AC 53-163774  
Expiration Date: April 1, 1990

**SPECIFIC CONDITIONS:**

6. Initial and annual compliance tests shall be conducted in accordance with the July 1, 1988 version of 40 CFR 60, Appendix A, using EPA Method 9, for visible emissions.

7. Any change in the method of operation, equipment or operating hours shall be submitted to DER's Southwest District office for approval.

8. For emission inventory and PSD purposes, the estimated maximum emissions from the sources in the molten sulfur storage and handling system are:

Source		PM/PM <sub>10</sub>	SO <sub>2</sub>	TRS/H <sub>2</sub> S	VOC
NO.1 Truck Pit	lb/hr	0.2	0.3	0.1	0.2
	TPY	0.8	1.2	0.6	0.7
No.2 Truck Pit	lb/hr	0.1	0.1	0.1	0.1
	TPY	0.3	0.5	0.2	0.3
Rail Pit	lb/hr	0.2	0.3	0.1	0.2
	TPY	0.8	1.2	0.6	0.7
Transfer Pit	lb/hr	0.1	0.1	0.1	0.1
	TPY	0.2	0.4	0.2	0.2
No.1 Storage Tank	lb/hr	0.6	0.5	0.2	0.3
	TPY	1.2	2.1	1.0	1.2
No.2 Storage Tank	lb/hr	0.6	0.5	0.2	0.3
	TPY	1.2	2.1	1.0	1.2
No.3 Storage Tank	lb/hr	0.6	0.5	0.2	0.3
	TPY	1.1	2.2	1.0	1.0

9. A minimum of 15 days prior written notification of the compliance tests shall be given to the Southwest District office. The compliance test results shall be submitted to the district office within 45 days of test completion.

10. 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 (BAR) prior to 60 days before the expiration of the permit (F.A.C. 17-4.090).

PERMITTEE:  
IMC Fertilizer, Inc.

Permit Number: AC 53-163774  
Expiration Date: April 1, 1990

**SPECIFIC CONDITIONS:**

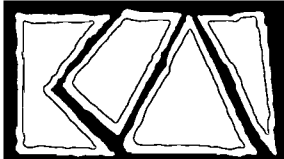
11. An application for an operation permit must be submitted to the Southwest District office at least 90 days prior to the expiration date of this construction permit or within 45 days after completion of compliance testing, whichever occurs first. To properly apply for an operation permit, the applicant 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. 17-4.220).

Issued this \_\_\_\_\_ day  
of \_\_\_\_\_, 1989

STATE OF FLORIDA DEPARTMENT  
OF ENVIRONMENTAL REGULATION

---

Dale Twachtmann, Secretary



**KOUGLER & ASSOCIATES**  
**ENVIRONMENTAL SERVICES**  
4014 NW THIRTEENTH STREET  
GAINESVILLE, FLORIDA 32609  
904/377-5822 • FAX 377-7158

**RECEIVED**

AUG 3 1989

DER-BAQM

KA 124-89-02

August 2, 1989

Mr. C.H. Fancy  
Bureau of Air Quality Management  
Florida Department of  
Environmental Regulation  
2600 Blair Stone Road  
Tallahassee, FL 32399-2400

Re: IMC Fertilizer, Inc.-New Wales Operations  
Molten Sulfur Facility Permitting  
Permit AC53-163774

Dear Mr. Fancy:

The following information has been prepared in response to your letter of May 17, 1989, requesting additional information related to the existing molten sulfur handling system at IMC Fertilizer, Inc.-New Wales Operations. In the following paragraphs, the requests for information are repeated, followed by our responses.

1. **What is the typical capacity of the sulfur delivery vehicle(s)? What is the typical delivery frequency? Please estimate the expected emissions from the sulfur delivery vehicle(s) while at IMC's facility.**

Molten sulfur is delivered to IMC Fertilizers, Inc. (IMCF) by railcar and by truck. Nominally, 161,700 tons per year of sulfur are delivered by rail in 100 ton (net load) railcars. The cars are nominally delivered every other day with six to 10 cars being received at a time. The truck delivery of molten sulfur is nominally 1.45 million tons per year, with the sulfur being received in 25 ton (net load) trucks. The sulfur is delivered daily by trucks with approximately 160 truckloads a day arriving at IMCF. The trucks that deliver the sulfur are dual-purpose trucks; delivering molten sulfur on the trip to IMCF and delivering granular fertilizer products or animal feed ingredients on the return from IMCF.

The sulfur particle emissions and the sulfur gas emissions from the delivery vehicles has been accounted for in the emission estimates from the truck receiving pits and the rail receiving pit.

Mr. C.H. Fancy  
Re: IMCF Permitting

August 2, 1989  
Page 2

2. Please submit air emission estimates for any other source/equipment/process within (or associated with) the sulfur facility which has not yet been permitted by FDER.

The emission estimates submitted with the original permit application and the emission estimates addressed in response to the Department's Request No. 3 are the only air pollutants associated with the molten sulfur facility at IMCF.

3. Submit air emission estimates for all the air pollutants emitted by the sources in the sulfur facility.

The attached sheets document emission estimates for total reduced sulfur compounds, including hydrogen sulfide (TRS), sulfur dioxide (SO<sub>2</sub>) and volatile organic compounds (VOCs). These emission estimates plus the sulfur particle emission estimates addressed in the original application account for all air pollutants associated with the molten sulfur system at IMCF.

The estimates for TRS, SO<sub>2</sub> and VOCs are based on measurements made at Frasch sulfur terminals in the Tampa area in the head space of molten sulfur tanks that are air-purged. Because of the air-purging, the size of the storage tanks and other factors addressed in the attached documentation of emission estimates, the reported emission estimates are high by some unknown factor. Rather than to arbitrarily lower the emission estimates without a sound basis, the attached estimates are presented as the current best estimates of emissions of TRS, VOCs and SO<sub>2</sub>.

If there is any additional information required to facilitate the processing of the IMC permit application or if there are any questions regarding the enclosed information, please do not hesitate to contact me.

Very truly yours,

KOOGLER & ASSOCIATES

  
John B. Koogler, Ph.D, P.E.

JBK:mab

cc: Mr. Bill Thomas, FDER, Southwest District  
Mr. Joe Baretincic, IMCF  
Mr. Jerry Girardin, IMCF

Pradeep Raval } 4-4-89 RRN  
CHF/BT/PA



EMISSION ESTIMATES - TRS, SO<sub>2</sub>, VOC  
IMC FERTILIZER, INC. - NEW WALES OPERATIONS  
POLK COUNTY, FLORIDA

Estimates have been made of emission rates of total reduced sulfur compounds, sulfur dioxide and volatile organic compounds from the molten sulfur handling system at IMC Fertilizers, New Wales Operations (IMCF). Because of factors cited in the following paragraphs, the emission estimates are high by some unknown factor. Rather than arbitrarily lowering the emission estimates without a sound rationale, these estimates are presented as the current best estimates.

Air vented from molten sulfur storage tanks and pits is expected to contain small quantities of total reduced sulfur compounds--including H<sub>2</sub>S (TRS), sulfur dioxide and volatile organic compounds (VOCs). The volatile organic compounds result from small quantities of petroleum products contained in Frasch sulfur (approximately 0.25%), and the vaporization of these compounds at the storage temperature of molten sulfur. The reduced sulfur compounds result from the reduction of elemental sulfur in the presence of carbon supplied by the petroleum products and the SO<sub>2</sub> results from the oxidation of elemental sulfur.

A limited number of measurements have been made on molten sulfur storage tanks at Frasch sulfur terminals in the Tampa area to determine TRS, SO<sub>2</sub>, and VOC concentrations in the head space of the tanks, over molten sulfur. These measurements have been made on molten sulfur storage tanks with capacities in the range of 10,000 tonnes and tanks that are air purged at

rates between 10 and 63 cfm. Because of the size of the tanks, the fact that they are air purged, and the fact that the sulfur most probably has a higher fraction of VOCs (due to the fact that there has been less time for the volatile fraction of the petroleum products to vaporize), measurements made in Tampa will overestimate TRS, SO<sub>2</sub>, and VOC emissions from facilities in Polk County. However, as no other data are available, the Tampa data have been used to estimate TRS (including H<sub>2</sub>S), SO<sub>2</sub> and VOC emissions from molten sulfur storage tanks and molten sulfur pits at IMCF. In reviewing these emission estimates, even though they are small, it should be recognized that they overstate the actual emissions by some unknown amount.

The emission factors used for TRS, SO<sub>2</sub>, and VOCs are summarized below:

TRS

Measurements made in November 1983 by TRC and reported in the FDER "Sulfur Report" (February 1984) show the following:

<u>Tank Purge Rate (cfm)</u>	<u>TRS in Head Space over Molten Sulfur (ppm, vol)</u>
43	200
63	403

Measurements made by Enviroplan, Inc. in 1987 in the head space over molten sulfur in a tank purged at the rate of 10 cfm showed an average TRS concentration of 638 ppm (vol).

A "typical" concentration of TRS (including H<sub>2</sub>S) in the head space over molten sulfur was estimated from these data:

$$\begin{aligned} [280 + 403 + 2(638)]/4 &= 490 \text{ ppm (vol)} \\ &= 4.3 \times 10^{-5} \text{ lb/ft}^3 \end{aligned}$$

### SO<sub>2</sub>

Measurements made by TRC (1983) in the tanks reported in the previous section showed SO<sub>2</sub> concentrations in the head space of the two tanks that average 55 ppm (vol) or  $9.1 \times 10^{-5}$  lb/ft<sup>3</sup>.

### VOC

Measurements made by Enviroplan, Inc. (1987) in the head space over molten sulfur in tanks as STI in Tampa showed VOC concentrations that averaged  $5.2 \times 10^{-5}$  lb/ft<sup>3</sup>.

TRUCK PIT #1

EMISSION RATE CALCULATIONS - TRS, SO<sub>2</sub>, VOC

Use ventilation rate used for particulate matter emission estimates

TRS

$$\begin{aligned} &= 10 \text{ cfm/vent} \times 5 \text{ vents} \times 60 \text{ min/hr} \times 4.3 \times 10^{-5} \text{ lb/ft}^3 \\ &= 0.13 \text{ lb/hr} \\ &\quad \times 8760 \text{ hr/yr} \times 1/2000 \text{ lb/ton} \\ &= 0.6 \text{ tpy} \end{aligned}$$

SO<sub>2</sub>

$$\begin{aligned} &= 10 \text{ cfm/vent} \times 5 \text{ vents} \times 60 \text{ min/hr} \times 9.1 \times 10^{-5} \text{ lb/ft}^3 \\ &= 0.27 \text{ lb/hr} \\ &\quad \times 8760/2000 \\ &= 1.2 \text{ tpy} \end{aligned}$$

VOC

$$\begin{aligned} &= 10 \text{ cfm/vent} \times 5 \text{ vents} \times 60 \text{ min/hr} \times 5.2 \times 10^{-5} \text{ lb/ft}^3 \\ &= 0.16 \text{ lb/hr} \\ &\quad \times 8760/2000 \\ &= 0.7 \text{ tpy} \end{aligned}$$



TRUCK PIT #2

EMISSION RATE CALCULATIONS - TRS, SO<sub>2</sub>, VOC

Use ventilation rate used for particulate matter emission estimates

TRS

$$\begin{aligned} &= 10 \text{ cfm/vent} \times 2 \text{ vents} \times 60 \text{ min/hr} \times 4.3 \times 10^{-5} \text{ lb/ft}^3 \\ &= 0.05 \text{ lb/hr} \\ &\quad \times 8760 \text{ hr/yr} \times 1/2000 \text{ lb/ton} \\ &= 0.2 \text{ tpy} \end{aligned}$$

SO<sub>2</sub>

$$\begin{aligned} &= 10 \text{ cfm/vent} \times 2 \text{ vents} \times 60 \text{ min/hr} \times 9.1 \times 10^{-5} \text{ lb/ft}^3 \\ &= 0.11 \text{ lb/hr} \\ &\quad \times 8760/2000 \\ &= 0.5 \text{ tpy} \end{aligned}$$

VOC

$$\begin{aligned} &= 10 \text{ cfm/vent} \times 2 \text{ vents} \times 60 \text{ min/hr} \times 5.2 \times 10^{-5} \text{ lb/ft}^3 \\ &= 0.06 \text{ lb/hr} \\ &\quad \times 8760/2000 \\ &= 0.3 \text{ tpy} \end{aligned}$$

RAIL PIT

EMISSION RATE CALCULATIONS - TRS, SO<sub>2</sub>, VOC

Use ventilation rate used for particulate matter emission estimates

TRS

$$\begin{aligned} &= 10 \text{ cfm/vent} \times 5 \text{ vents} \times 60 \text{ min/hr} \times 4.3 \times 10^{-5} \text{ lb/ft}^3 \\ &= 0.13 \text{ lb/hr} \\ &\quad \times 8760 \text{ hr/yr} \times 1/2000 \text{ lb/ton} \\ &= 0.6 \text{ tpy} \end{aligned}$$

SO<sub>2</sub>

$$\begin{aligned} &= 10 \text{ cfm/vent} \times 5 \text{ vents} \times 60 \text{ min/hr} \times 9.1 \times 10^{-5} \text{ lb/ft}^3 \\ &= 0.27 \text{ lb/hr} \\ &\quad \times 8760/2000 \\ &= 1.2 \text{ tpy} \end{aligned}$$

VOC

$$\begin{aligned} &= 10 \text{ cfm/vent} \times 5 \text{ vents} \times 60 \text{ min/hr} \times 5.2 \times 10^{-5} \text{ lb/ft}^3 \\ &= 0.16 \text{ lb/hr} \\ &\quad \times 8760/2000 \\ &= 0.7 \text{ tpy} \end{aligned}$$

TRANSFER PIT

EMISSION RATE CALCULATIONS - TRS, SO<sub>2</sub>, VOC

Use ventilation rate used for particulate matter emission estimates

TRS

$$\begin{aligned} &= 10 \text{ cfm/vent} \times 1 \text{ vent} \times 60 \text{ min/hr} \times 4.3 \times 10^{-5} \text{ lb/ft}^3 \\ &= 0.04 \text{ lb/hr} \\ &\quad \times 8760 \text{ hr/yr} \times 1/2000 \text{ lb/ton} \\ &= 0.2 \text{ tpy} \end{aligned}$$

SO<sub>2</sub>

$$\begin{aligned} &= 10 \text{ cfm/vent} \times 1 \text{ vent} \times 60 \text{ min/hr} \times 9.1 \times 10^{-5} \text{ lb/ft}^3 \\ &= 0.08 \text{ lb/hr} \\ &\quad \times 8760/2000 \\ &= 0.4 \text{ tpy} \end{aligned}$$

VOC

$$\begin{aligned} &= 10 \text{ cfm/vent} \times 1 \text{ vent} \times 60 \text{ min/hr} \times 5.2 \times 10^{-5} \text{ lb/ft}^3 \\ &= 0.05 \text{ lb/hr} \\ &\quad \times 8760/2000 \\ &= 0.2 \text{ tpy} \end{aligned}$$

TANKS #1 & #2

EMISSION RATE CALCULATIONS - TRS, SO<sub>2</sub>, VOC

Use ventilation rate used for particulate matter emission estimates

90 cfm for 3985 hr/yr

142 cfm for 467 hr/yr

112 cfm for 1615 hr/yr

68 cfm for 2693 hr/yr

$$\text{AVG} = \frac{90(3985) + 142(467) + 112(1615) + 68(2693)}{8760}$$

$$= 90 \text{ cfm for } 8760 \text{ hr/yr}$$

TRS

$$= 90 \text{ cfm} \times 60 \text{ min/hr} \times 4.3 \times 10^{-5} \text{ lb/ft}^3$$

$$= 0.23 \text{ lb/hr}$$

$$\times 8760 \text{ hr/yr} \times 1/2000 \text{ lb/ton}$$

$$= 1.0 \text{ tpy, each tank}$$

SO<sub>2</sub>

$$= 90 \text{ cfm} \times 60 \text{ min/hr} \times 9.1 \times 10^{-5} \text{ lb/ft}^3$$

$$= 0.49 \text{ lb/hr}$$

$$\times 8760/2000$$

$$= 2.1 \text{ tpy, for each tank}$$

VOC

$$= 90 \text{ cfm} \times 60 \text{ min/hr} \times 5.2 \times 10^{-5} \text{ lb/ft}^3$$

$$= 0.28 \text{ lb/hr}$$

$$\times 8760/2000$$

$$= 1.2 \text{ tpy}$$

TANK #3

EMISSION RATE CALCULATIONS - TRS, SO<sub>2</sub>, VOC

Use ventilation rate used for particulate matter emission estimates

90 cfm for 6932 hr/yr

48 cfm for 914 hr/yr

142 cfm for 914 hr/yr

$$\text{AVG} = \frac{90(6932) + 48(914) + 142(914)}{8760}$$

$$= 91 \text{ cfm for } 8760 \text{ hr/yr}$$

TRS

$$= 91 \text{ cfm} \times 60 \text{ min/hr} \times 4.3 \times 10^{-5} \text{ lb/ft}^3$$

$$= 0.24 \text{ lb/hr}$$

$$\times 8760 \text{ hr/yr} \times 1/2000 \text{ lb/ton}$$

$$= 1.0 \text{ tpy}$$

SO<sub>2</sub>

$$= 91 \text{ cfm} \times 60 \text{ min/hr} \times 9.1 \times 10^{-5} \text{ lb/ft}^3$$

$$= 0.50 \text{ lb/hr}$$

$$\times 8760/2000$$

$$= 2.2 \text{ tpy}$$

VOC

$$= 91 \text{ cfm} \times 60 \text{ min/hr} \times 5.2 \times 10^{-5} \text{ lb/ft}^3$$

$$= 0.28 \text{ lb/hr}$$

$$\times 8760/2000$$

$$= 1.2 \text{ tpy}$$



# Florida Department of Environmental Regulation

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

Bob Martinez, Governor

Dale Twachtmann, Secretary

John Shearer, Assistant Secretary

May 17, 1989

CERTIFIED MAIL - RETURN RECEIPT REQUESTED

Mr. J. A. Brafford  
IMC Fertilizer Inc. - New Wales  
P. O. Box 1035  
Mulberry, Florida 33860

Dear Mr. Brafford:

Re: Sulfur Facility Permitting, AC 53-163774.

The Department has received your application package dated April 19, 1989, and deemed it incomplete. Please submit the following information including all assumptions, calculations and reference material:

1. What is the typical capacity of the sulfur delivery vehicle(s)? What is the typical delivery frequency? Please estimate the expected emissions from the sulfur delivery vehicle(s) while it is at IMC's facility.
2. Please submit air emission estimates for any other source/equipment/process within (or associated with) the sulfur facility which has not yet been permitted by DER.
3. Submit air emission estimates for all the air pollutants emitted by the sources in the sulfur facility.

If you have any questions please call Pradeep Raval at (904) 488-1344 or write to me at the above address.

Sincerely,

C. H. Fancy  
Deputy Chief  
Bureau of Air Quality  
Management

CHF/PR/plm

cc: B. Thomas, SW District  
J. Koogler, PE