STATE OF FLORIDA
DEPARTMENT OF ENVIRONMENTAL REGULATION
NOTICE OF PERMITS

In the matter of an
Application for Permit by:

Mr. Selwyn Presnell
Agrico Chemical Company
P. O. Box 1110
Mulberry, Florida 33860

DER File No. AC 53-201152
AC 53-199112
Polk County

Enclosed are Permit Numbers AC 53-201152 and 53-199112 (PSD-FL-179) for modifications to the molten sulfur storage and handling facility and Nos. 10 and 11 sulfuric acid plants at Agrico's South Pierce facility located on SR 630 near Fort Meade, Polk County, Florida, issued pursuant to Section(s) 403, Florida Statutes.

Any party to this Order (permit) has the right to seek judicial review of the permits pursuant to Section 120.68, Florida Statutes, by the filing of a Notice of Appeal pursuant to Rule 9.110, Florida Rules of Appellate Procedure, with the Clerk of the Department in the Office of General Counsel, 2600 Blair Stone Road, Tallahassee, Florida 32399-2400; and by filing a copy of the Notice of Appeal accompanied by the applicable filing fees with the appropriate District Court of Appeal. The Notice of Appeal must be filed within 30 days from the date this Notice is filed with the Clerk of the Department.

Executed in Tallahassee, Florida.

STATE OF FLORIDA DEPARTMENT
OF ENVIRONMENTAL REGULATION

C. H. Fancy, P.E., Chief
Bureau of Air Regulation
2600 Blair Stone Road
Tallahassee, FL 32399-2400
904-488-1344

CERTIFICATE OF SERVICE

The undersigned duly designated deputy agency clerk hereby certifies that this NOTICE OF PERMITS and all copies were mailed before the close of business on 4-17-92 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) 4-17-92 (Date)

Copies furnished to:
Bill Thomas, SWD
Jewell Harper, EPA
John Koogler, P.E.
Chris Shaver, NPS

Florida Department of Environmental Regulation

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

Lawton Chiles, Governor

Carol M. Browner, Secretary

PERMITTEE:

Agrico Chemical Company
Post Office Box 1110
Mulberry, Florida 33860

Permit Number: AC 53-199112
PSD-FL-179
Expiration Date: Jan. 1, 1994*
County: Polk
Latitude/Longitude: 27°45'52"N
81°56'19"W
Project: Sulfuric Acid Plants Nos. 10 & 11 - Production Increases to 2700 TPD Per Plant (5400 TPD total)

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

For the modifications to the existing Nos. 10 and 11 sulfuric acid plants that will increase each plant's production to 2700 TPD 100% sulfuric acid (5400 TPD total for both plants). The plant modifications include installing a new turbogenerator, using more efficient economizer units, replacing the tower and acid coolers with heat recovery systems, and adding more catalyst to the converters. These sources are located at the permittee's South Pierce phosphate fertilizer manufacturing facility on SR 630 near Fort Meade, Polk County, Florida 33841. The UTM coordinates of this facility are Zone 17, 407.5 km E and 3071.3 km N.

*This permit is void if construction does not commence within 18 months of its issuance, if construction is discontinued for more than 18 months, or if construction is not completed and the modified plant placed in operation within a reasonable time.

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

Attachments are listed below:
1. Agrico's application received June 28, 1991.
2. DER's letter dated June 26, 1991.
3. Koogler & Associates' letter dated October 22, 1991.
4. Koogler & Associates' letter dated February 27, 1992.
5. Koogler & Associates' letter dated April 10, 1992.
6. U.S. Department of Interior's letter dated April 10, 1992

GENERAL CONDITIONS:

records of all data used to complete the application 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 each of the sulfuric acid plants (Nos. 10 & 11) shall not exceed 2700 tons per day based on 100% H_2SO_4 (5400 TPD for both plants).

2. Sulfur dioxide emissions from each plant shall not exceed 4 lbs/ton of 100% sulfuric acid produced, 450.0 lbs/hr, and 1971.0 tons/yr.

3. Sulfuric acid mist emissions from each plant shall not exceed 0.15 lb/ton of 100% sulfuric acid produced, 16.9 lbs/hr, and 73.9 tons/yr.

4. Nitrogen oxides emissions from each plant shall not exceed 0.12 lb/ton of 100% sulfuric acid produced, 13.5 lbs/hr, and 59.1 tons/yr.

The nitrogen oxides limits are subject to revision if sufficient test data indicate that the emission factor is improper.

PERMITTEE:
Agrico Chemical Company

Permit Number: AC 53-199112
Expiration Date: January 1, 1994

SPECIFIC CONDITIONS:

5. Visible emissions from each plant shall not exceed 10% opacity.

6. A continuous emission monitor shall be used to monitor sulfur dioxide emissions from each plant in accordance with 40 CFR 60, Subpart H (July 1, 1991), Standards of Performance for Sulfuric Acid Plants. Initial and annual compliance tests shall be conducted using: EPA Method 7E for nitrogen oxides, EPA Method 8 for sulfur dioxide and acid mist, and EPA Method 9 for visible emissions as described in 40 CFR 60, Appendix A (July 1, 1991).

7. The compliance tests shall be conducted at 90 to 100% of the permitted capacity (2430 - 2700 TPH sulfuric acid production) and within 30 days after operating the plant at a rate above 2000 TPH. The Department's Southwest District office shall be notified in writing 15 days prior to source testing. Written reports of the tests shall be submitted to that office within 45 days of test completion.

8. The permittee, for good cause, may request that this construction permit be extended. Such a request shall be submitted to the Bureau of Air Regulation prior to 60 days before the expiration of the permit (F.A.C. Rule 17-4.090).

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

Issued this 17 day
of April, 1992

STATE OF FLORIDA DEPARTMENT
OF ENVIRONMENTAL REGULATION

Howard L. Rhodes
for Carol M. Browner, Secretary

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 DER:

Control Technology	Double Absorption/Fiber Mist Eliminators
Pollutant	Emission Limits
SO_2	4.0 lb/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

DER's BACT determination is the same as that proposed by the applicant, determinations 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.

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DEPARTMENT OF ENVIRONMENTAL REGULATION
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Application for Permit by:

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Polk County

Enclosed are Permit Numbers AC 53-201152 and 53-199112 (PSD-FL-179) for modifications to the molten sulfur storage and handling facility and Nos. 10 and 11 sulfuric acid plants at Agrico's South Pierce facility located on SR 630 near Fort Meade, Polk County, Florida, issued pursuant to Section(s) 403, Florida Statutes.

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Executed in Tallahassee, Florida.

STATE OF FLORIDA DEPARTMENT
OF ENVIRONMENTAL REGULATION

C. H. Fancy, P.E., Chief
Bureau of Air Regulation
2600 Blair Stone Road
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904-488-1344

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acknowledged.

(Clerk) 4-17-92 (Date)

Copies furnished to:
Bill Thomas, SWD
Jewell Harper, EPA
John Koogler, P.E.
Chris Shaver, NPS

Final Determination

Agrico Chemical Company
South Pierce, Polk County, Florida

SULFURIC ACID PRODUCTION MODIFICATION

Molten Sulfur Storage and Handling Facility
File No.: AC 53-201152

Sulfuric Acid Plants Nos. 10 and 11 Modification
File No.: AC 53-199112 (PSD-FL-179)

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

April 17, 1992

Final Determination

The Technical Evaluation and Preliminary Determination for the permits to construct (modify) the existing molten sulfur storage and handling system (AC 53-201152) and the Nos. 10 and 11 sulfuric acid plants (AC 53-199112/PSD-FL-179), was distributed on March 11, 1992. The Notice of Intent to Issue was published in the Polk County Democrat on March 12, 1992. Copies of the evaluation were available for public inspection at the Department's Tampa and Tallahassee offices. The only comments received on the Department's Intent to Issue the permits were from the applicant and the National Park Service (NPS).

The applicant noted that the description on the first page of the permit for the molten sulfur storage and handling system has a typographical error in it and asked the Department to revise Specific Condition No. 8 to require only those changes likely to increase emissions be reported to the Department. The applicant also reported typographical errors in Specific Condition No. 7 for the sulfuric acid plant modifications and asked that no compliance tests be required on the modified plants until 60 days after a plant exceeds the production of 2200 TPD. Under the current Permits to Operate, each plant can produce up to 2200 TPD.

The above requests are acceptable to the Department. In response to the comments, the Department has:

1. Changed the description on the first sheet of permit No. AC 53-201152 to show that the correct capacity of the truck pit is 670 ST.

2. Clarified Specific Condition No. 8 of permit No. AC 53-201152 to require only the changes that are likely to increase emissions be reported to the Department.

3. Changed the units for the sulfuric acid production capacity in Specific Condition No. 7 of permit No. AC 53-199112 from TPH to TPD.

4. Changed Specific Condition No. 7 of permit No. AC 53-199112 to require the initial compliance test be done in 60 days after exceeding the production capacity of 2200 TPD.

The NPS noted that the actual emissions listed in the evaluation were inconsistent and recommended that the allowable emissions proposed in the BACT (new source performance standard for sulfuric acid plants) be reduced to the actual emissions reported for the affected plants. They also requested additional modeling to further refine the ambient air impact of this modification on the Chassahowitzka Class I Area.

Koogler & Associates' April 10, 1992, letter explained that the actual emissions from the plants, in lbs/hr and lbs/ton, are consistent. However, because the hourly production rate is not consistent, the annual emissions in TPY do not correlate with the hourly emissions.

Emissions from new sulfuric acid plants will be lower than the new source performance standards. However, as the catalyst in these plants age, it becomes less efficient and emissions increase. Periodically, the catalyst is rejuvenated by removing the fines that have formed and replacing it with new catalyst. The packing in the adsorption tower is generally cleaned at the same time. This maintenance improves the efficiency and lowers the emissions. The Department believes that the NSPS standard of 4 lbs sulfur dioxide and 0.15 lbs acid mist per ton of acid produced, which can be exceeded only during plant startup, is reasonable for BACT for this plant at this time. The applicant also remodeled the plant's impact on the Class I Area as directed by the NPS. These results were the same as those contained in the preliminary determination and are acceptable to the DER and NPS.

The final action of the Department will be to issue construction permits AC 53-201152 and 53-199112 (PSD-FL-179) as proposed in the Technical Evaluation and Preliminary Determination.

KOOGLER & ASSOCIATES
ENVIRONMENTAL SERVICES
4014 NW THIRTEENTH STREET
GAINESVILLE, FLORIDA 32609
904/377-5822 ▪ FAX 377-7158

KA 124-95-02

August 21, 1995

RECEIVED
AUG 23 1995
Bureau of
Air Regulation

Mr. Clair H. Fancy
Florida Department of
Environmental Protection
Twin Towers Office Building
2600 Blair Stone Road
Tallahassee, FL 32399-2400

Subject: Additional Information for
Permit Amendment Request
IMC-Agrico Company

Dear Mr. Fancy:

This is in response to your letter dated June 7, 1995, and discussions last week between Martin Costello and Pradeep Raval regarding the permit amendments for several IMC-Agrico sources. The information provided below is in the order of the amendments evaluated by FDEP.

NEW WALES PLANT

Sulfuric Acid Plants 1-5, PSD-FL-170

1. Please provide the EPA Suggested Emissions Netting Procedure (page A. 44 of NSR Workshop Manual), to demonstrate that net emissions of NOx were below the significant levels at the time of the proposed modifications from PSD-FL-170.

RESPONSE:

Using an abbreviated version of the netting procedure outlined in the NSR Workshop Manual, utilized by FDEP in PSD-FL-170, the revised net NOx emissions increase based on 1991-1994 emission data available from source sampling (average for the period) is as follows:

Actual Emissions

SAP 1: NOx = 985,500 tpy acid x 0.079 lb NOx/ton acid x ton/2000lbs
= 38.9 tpy

SAP 2: NOx = 985,500 tpy acid x 0.083 lb NOx/ton acid x ton/2000lbs
= 40.9 tpy

SAP 3: NOx = 985,500 tpy acid x 0.072 lb NOx/ton acid x ton/2000lbs
= 35.5 tpy

SAP 4: NOx = 1,003,750 tpy acid x 0.073 lb NOx/ton acid x ton/2000lbs
= 36.6 tpy

SAP 5: NOx = 1,003,750 tpy acid x 0.079 lb NOx/ton acid x ton/2000lbs
= 39.6 tpy

Proposed Emissions

Assume that the emissions from all five plants reflect the highest NOx emission rate from above (1991-1994 test data reference period).

SAP 1-5: NOx = 5,292,500 tpy acid x 0.083 lb NOx/ton acid x ton/2000lbs
= 219.6 tpy

Net Emissions

As there were no other contemporaneous NOx emissions, the net emissions increase is simply the difference in the actual and proposed emissions:

SAP 1-5: NOx = 219.6 - (38.9 + 40.9 + 35.5 + 36.6 + 39.6) tpy
= 28.1 tpy

This net emissions increase is less than the PSD significant emission level of 40 tpy.

DAP 2 East & West Trains

The request for amendment of AC53-118671, for DAP 2 (East & West Trains), is hereby withdrawn.

SOUTH PIERCE PLANT

Sulfuric Acid Plants 10 & 11, PSD-FL-179

Using FDEP's abbreviated netting procedure (conducted above), the revised net NOx emissions increase based on 1991-1994 emission data available from source sampling (average for the period) is as follows:

Actual Emissions

SAP 10: NOx = 730,000 tpy acid x 0.092 lb NOx/ton acid x ton/2000lbs
= 33.6 tpy

SAP 11: NOx = 730,000 tpy acid x 0.086 lb NOx/ton acid x ton/2000lbs
= 31.4 tpy

Proposed Emissions

Assume that the emissions from both plants reflect the highest NOx emission rate from above (1991-1994 test data reference period),

SAP 10-11: NOx = 1,971,000 tpy acid x 0.092 lb NOx/ton acid x ton/2000lbs
= 90.7 tpy

Net Emissions

As there were no other contemporaneous NOx emissions, the net emissions increase is simply the difference in the actual and proposed emissions:

SAP 10-11: NOx = 90.7 - (33.6 + 31.4) tpy
= 25.7 tpy

This net emissions increase is less than the PSD significant emission level of 40 tpy.

NICHOLS PLANT

DAP Dryer, AC53-232681, PSD-FL-204

The request for amendment of AC53-232681, for the DAP Plant, is hereby withdrawn, except for clarification of Specific Condition No. 5.

As worded currently, SC No. 5 requires performance testing for ammonia and subsequent air dispersion modeling of the emissions to demonstrate compliance with the FDEP Air Reference Concentration (FARC). IMC-Agrico, FDEP and EPA staff are all aware of the shortcomings of the draft ammonia sampling method and it's positive bias for a source such as the DAP plant. In response to FDEP's suggestion, IMC-Agrico is willing to conduct the required (one-time) ammonia sampling. However, it is requested that the requirement to conduct air dispersion modeling be deleted from SC No. 5 as that effort is not justified given the bias in the ammonia emission rate measurement.

Furthermore, FDEP's air toxics guidance indicates that a FARC can be exceeded so long as the pollutant emissions are controlled using BACT. In the case of the DAP Plant, the pollution controls presently in place constitute BACT pursuant to FDEP's BACT determination for PSD-FL-204.

Given the reasons stated above, it is requested that no sampling be required for ammonia. If a one-time test is required, then no subsequent air dispersion modeling should be required.

If you have any questions, please call Pradeep Raval or me.

Very truly yours,

KOOGLER & ASSOCIATES

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

JBK:par

c: Dave Turley, IMC-Agrico
Jerry Girardin, IMC-Agrico
Gerald Kissel, FDEP Tampa

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

KA 124-94-05

March 14, 1995

Mr. A. A. Linero
Florida Department of
Environmental Protection
Twin Towers Office Building
2600 Blair Stone Road
Tallahassee, FL 32399-2400

Subject: Polk County-AP
IMC-Agrico Company
South Pierce Plant
Permit Amendment Requests

Dear Mr. Linero:

During recent discussions with FDEP staff, the subject of air permit conditions had come up. Based on those discussions, it is our understanding that all emission limitations in current permits must either be based on a standard, or reflect emission limits requested by a permittee to avoid a specific rule applicability (e.g. PSD, etc.). Any emission limit which is not supported by this criteria can be removed from the permit.

It is anticipated that the removal of such emission limitations from current operation permits and source construction permits will facilitate Title V permit application compilation by IMC-Agrico as well as the compilation of Title V permit conditions by FDEP. Thus, only valid applicable requirements will remain in the source permits.

IMC-Agrico has several air operation (and the preceding construction) permits which contain emission limitations outside of the above FDEP criteria. Often, emission estimates/fuel specifications stated in the application for information purposes were then imposed as permit limitations. As a result, we are requesting FDEP to amend the permits tabulated below. A discussion on these permits is provided in the attachments. The attachment number corresponds to the item number in the table below.

In accordance with FDEP protocol, the request for permit amendment is being submitted to the office where the permit was issued. For permits issued by FDEP's Tampa office, a request for amendment is simultaneously being submitted to that office. The amendment request for construction permits issued by the Bureau of Air Regulation (BAR) is being sent to your attention. The permit listing below, however, includes all the permits to be amended so that both the FDEP District and the BAR offices are aware of the scope of the permit amendments.

It is requested that the following permits be amended:

Item	Unit/Operation	Operation Permit No.	Construction Permit No.	Other Permit No.
	Auxiliary Boiler	A053-186772 (D)	AC53-27465 (D)	A053-108906(D)
	GTSP Plant	A053-235041 (D)	AC53-2184 (D)	
1.	SAP 10	A053-221846 (DT)	**AC53-199112 (T)**	
1.	SAP 11	A053-220555 (DT)	**AC53-199112 (T)**	

NOTES:

(D) Operation permit amendment expected from FDEP District office.
(DT) Permit amendment expected from FDEP District office after the construction permit amendment is issued by BAR in Tallahassee.
(T) Construction permit amendment expected from BAR in Tallahassee.

A check in the amount of $250 (permit amendment processing fee) is enclosed.

Thank you for your kind assistance. If you have any questions, please call Pradeep Raval or me.

Very truly yours,

KOOGLER & ASSOCIATES

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

JBK:par

c: C.D. Turley, IMC-Agrico
G. Kissel, FDEP Tampa
M. Hanks
L. Royal, Polk Co.
C. Holladay
Q. Harper, EPA
Q. Bunyak, NPS

KOOGLER & ASSOCIATES

ATTACHMENT 1

Unit/Operation : Sulfuric Acid Plants 10 & 11

Permit No. : AC53-199112, PSD-FL-179

Amendment Request

The above referenced permit contains an emission limitation for nitrogen oxides. To our knowledge, the NOx limit in the permit is not based on a regulatory standard, nor does it reflect a limitation requested by IMC-Agrico to avoid a specific rule applicability (e.g. PSD, etc.).

Therefore, it is requested that the construction permit be amended as follows:

Page 5, Specific Condition No. 4:

Delete this specific condition which contains emission limits for NOx.

Page 6, Specific Condition No. 6:

Delete the NOx testing requirement from this specific condition and the corresponding reference to EPA Method 7E.

KOOGLER & ASSOCIATES

Florida Department of Environmental Regulation

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

Lawton Chiles, Governor

Carol M. Browner, Secretary

PERMITTEE:
Agrico Chemical Company
Post Office Box 1110
Mulberry, Florida 33860

Permit Number: AC 53-201152
Expiration Date: Jan. 1, 1994*
County: Polk
Latitude/Longitude: 27°45'52"N
81°56'19"W
Project: Molten Sulfur Storage and Handling System

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

For the modification to increase the sulfur throughput rate to a maximum of 2050 TPD and 650,000 TPY for the molten sulfur storage and handling facility. The facility consists of a rail and truck unloading system; two 1050 short ton (ST) molten sulfur storage tanks; one 100 ST rail pit; one 670 ST truck pit; and the associated transfer pumps and piping. The molten sulfur system is located at the Agrico's South Pierce facility on SR 630 near Fort Meade, Polk County, Florida 33841. The UTM coordinates of this facility are Zone 17, 407.5 km E and 3071.3 km N.

*This permit is void if construction does not commence within 18 months of its issuance, if construction is discontinued for more than 18 months, or if construction is not completed and the modified plant placed in operation within a reasonable time.

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

Attachments are listed below:
1. Agrico's application received August 12, 1991.
2. DER's letter dated August 26, 1991.
3. Koogler & Associates' letter dated October 22, 1991.
4. Koogler & Associates' letter dated February 27, 1992.
5. Agrico's letter dated March 19, 1992.
6. Koogler & Associates' letter dated April 10, 1992.
7. U.S. Department of Interior's letter dated April 10, 1992.

GENERAL CONDITIONS:

1. The terms, conditions, requirements, limitations, and restrictions set forth in this permit are "Permit Conditions" and are binding and enforceable pursuant to Sections 403.161, 403.727, or 403.859 through 403.861, Florida Statutes. The permittee is placed on notice that the Department will review this permit periodically and may initiate enforcement action for any violation of these conditions.

2. This permit is valid only for the specific processes and operations applied for and indicated in the approved drawings or exhibits. Any unauthorized deviation from the approved drawings, exhibits, specifications, or conditions of this permit may constitute grounds for revocation and enforcement action by the Department.

3. As provided in Subsections 403.087(6) and 403.722(5), Florida Statutes, the issuance of this permit does not convey any vested rights or any exclusive privileges. Neither does it authorize any injury to public or private property or any invasion of personal rights, nor any infringement of federal, state or local laws or regulations. This permit is not a waiver of or approval of any other Department permit that may be required for other aspects of the total project which are not addressed in the permit.

4. This permit conveys no title to land or water, does not constitute State recognition or acknowledgement of title, and does not constitute authority for the use of submerged lands unless herein provided and the necessary title or leasehold interests have been obtained from the State. Only the Trustees of the Internal Improvement Trust Fund may express State opinion as to title.

5. This permit does not relieve the permittee from liability for harm or injury to human health or welfare, animal, or plant life, or property caused by the construction or operation of this permitted source, or from penalties therefore; nor does it allow the permittee to cause pollution in contravention of Florida Statutes and Department rules, unless specifically authorized by an order from the Department.

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

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 Florida Administrative Code Rules 17-4.120 and 17-30.300, F.A.C., as applicable. The permittee shall be liable for any non-compliance of the permitted activity until the transfer is approved by the Department.

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

13. The permittee shall comply with the following:

a. Upon request, the permittee shall furnish all records and plans required under Department rules. During enforcement actions, the retention period for all records will be extended automatically unless otherwise stipulated by the Department.

b. The permittee shall hold at the facility or other location designated by this permit records of all monitoring information (including all calibration and maintenance records and all original strip chart recordings for continuous monitoring instrumentation) required by the permit, copies of all reports required by this permit, and records of all data used to complete the application for 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.

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 dates 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 corrected promptly.

SPECIFIC CONDITIONS:

1. Agrico's molten sulfur storage and handling facility shall be allowed to operate continuously (i.e., 8760 hours/year).

2. The maximum molten sulfur throughput rate shall neither exceed 2050 tons per day (TPD), nor 650,000 tons per year (TPY), based on the combined acid production capacity of 5400 TPD 100% sulfuric acid for the Nos. 10 and 11 plants.

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].

6. The permittee shall employ proper operation and maintenance procedures to control emissions from the molten sulfur storage and handling facility as specified in F.A.C. Rule 17-2.600(11).

SPECIFIC CONDITIONS:

7. Initial compliance tests shall be conducted in accordance with the July 1, 1991, version of 40 CFR 60, Appendix A, using EPA Method 9, for visible emissions. Test run duration shall not be less than 30 minutes. The tests for the vents of the storage tanks and sulfur pits shall be conducted while the tanks and pits are being filled (filling does not have to be continuous during the entire test). Routine VE tests shall be at the frequency specified in any permit to operate this facility issued by the Southwest District.

8. 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 DER's Southwest District office for approval.

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

Source		Estimated Emissions				
		PM/PM_{10}	SP	SO_2	TRS/H_2S	VOC
East Tank	lb/hr (max)	0.50	0.25	0.65	0.38	0.46
	lb/hr (avg)	0.32	0.16	0.41	0.24	0.29
(No. 1)	TPY	1.40	0.70	1.79	1.06	1.28
West Tank	lb/hr (max)	0.50	0.25	0.65	0.38	0.46
	lb/hr (avg)	0.32	0.16	0.41	0.24	0.29
(No. 2)	TPY	1.40	0.70	1.79	1.06	1.28
Truck Pit	lb/hr (max)	0.92	0.46	1.19	0.70	0.85
	TPY	4.06	2.03	5.22	3.07	3.71
Rail Pit	lb/hr (max)	0.22	0.11	0.28	0.16	0.20
	lb/hr (avg)	0.02	0.01	0.02	0.01	0.02
	TPY	0.08	0.04	0.10	0.06	0.07

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

11. The permittee, for good cause, may request that this construction permit be extended. Such a request shall be submitted

SPECIFIC CONDITIONS:

to the Bureau of Air Regulation prior to 60 days before the expiration of the permit (F.A.C. Rule 17-4.090).

12. 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. Rules 17-4.055 and 17-4.220).

Issued this 17th day
of April, 1992

STATE OF FLORIDA DEPARTMENT OF ENVIRONMENTAL REGULATION

Steve Smallwood

STEVE SMALLWOOD, P.E., Director
Division of Air Resources Management

Florida Department of Environmental Regulation

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

Lawton Chiles, Governor — Carol M. Browner, Secretary

PERMITTEE:

Agrico Chemical Company
Post Office Box 1110
Mulberry, Florida 33860

Permit Number: AC 53-199112
PSD-FL-179
Expiration Date: Jan. 1, 1994*
County: Polk
Latitude/Longitude: 27°45'52"N
81°56'19"W
Project: Sulfuric Acid Plants Nos. 10 & 11 - Production Increases to 2700 TPD Per Plant (5400 TPD total)

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

For the modifications to the existing Nos. 10 and 11 sulfuric acid plants that will increase each plant's production to 2700 TPD 100% sulfuric acid (5400 TPD total for both plants). The plant modifications include installing a new turbogenerator, using more efficient economizer units, replacing the tower and acid coolers with heat recovery systems, and adding more catalyst to the converters. These sources are located at the permittee's South Pierce phosphate fertilizer manufacturing facility on SR 630 near Fort Meade, Polk County, Florida 33841. The UTM coordinates of this facility are Zone 17, 407.5 km E and 3071.3 km N.

*This permit is void if construction does not commence within 18 months of its issuance, if construction is discontinued for more than 18 months, or if construction is not completed and the modified plant placed in operation within a reasonable time.

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

Attachments are listed below:
1. Agrico's application received June 28, 1991.
2. DER's letter dated June 26, 1991. July
3. Koogler & Associates' letter dated October 22, 1991.
4. Koogler & Associates' letter dated February 27, 1992.
5. Koogler & Associates' letter dated April 10, 1992.
6. U.S. Department of Interior's letter dated April 10, 1992

Agrico's 3/19/92 letter

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 Florida Administrative Code Rules 17-4.120 and 17-30.300, F.A.C., as applicable. The permittee shall be liable for any non-compliance of the permitted activity until the transfer is approved by the Department.

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

13. This permit also constitutes:

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

14. The permittee shall comply with the following:

a. Upon request, the permittee shall furnish all records and plans required under Department rules. During enforcement actions, the retention period for all records will be extended automatically unless otherwise stipulated by the Department.

b. The permittee shall hold at the facility or other location designated by this permit records of all monitoring information (including all calibration and maintenance records and all original strip chart recordings for continuous monitoring instrumentation) required by the permit, copies of all reports required by this permit, and

GENERAL CONDITIONS:

records of all data used to complete the application 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 each of the sulfuric acid plants (Nos. 10 & 11) shall not exceed 2700 tons per day based on 100% H_2SO_4 (5400 TPD for both plants).

2. Sulfur dioxide emissions from each plant shall not exceed 4 lbs/ton of 100% sulfuric acid produced, 450.0 lbs/hr, and 1971.0 tons/yr.

3. Sulfuric acid mist emissions from each plant shall not exceed 0.15 lb/ton of 100% sulfuric acid produced, 16.9 lbs/hr, and 73.9 tons/yr.

4. Nitrogen oxides emissions from each plant shall not exceed 0.12 lb/ton of 100% sulfuric acid produced, 13.5 lbs/hr, and 59.1 tons/yr.

The nitrogen oxides limits are subject to revision if sufficient test data indicate that the emission factor is improper.

PERMITTEE:
Agrico Chemical Company

Permit Number: AC 53-199112
Expiration Date: January 1, 1994

SPECIFIC CONDITIONS:

5. Visible emissions from each plant shall not exceed 10% opacity.

6. A continuous emission monitor shall be used to monitor sulfur dioxide emissions from each plant in accordance with 40 CFR 60, Subpart H (July 1, 1991), Standards of Performance for Sulfuric Acid Plants. Initial and annual compliance tests shall be conducted using: EPA Method 7E for nitrogen oxides, EPA Method 8 for sulfur dioxide and acid mist, and EPA Method 9 for visible emissions as described in 40 CFR 60, Appendix A (July 1, 1991).

7. The compliance tests shall be conducted at 90 to 100% of the permitted capacity (2430 - 2700 TPH sulfuric acid production) and within 30 days after operating the plant at a rate above 2000 TPH. The Department's Southwest District office shall be notified in writing 15 days prior to source testing. Written reports of the tests shall be submitted to that office within 45 days of test completion.

8. The permittee, for good cause, may request that this construction permit be extended. Such a request shall be submitted to the Bureau of Air Regulation prior to 60 days before the expiration of the permit (F.A.C. Rule 17-4.090).

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

Issued this 17 day
of April, 1992

STATE OF FLORIDA DEPARTMENT
OF ENVIRONMENTAL REGULATION

Howard L. Rhodes
for Carol M. Browner, Secretary

Best Available Control Technology (BACT) Determination
Agrico Chemical Company
Polk County

The applicant proposes to increase sulfuric acid production to 2700 tons per day each for the Nos. 10 and 11 sulfuric acid plants (5400 TPD total) that are located at the South Pierce phosphate fertilizer manufacturing facility on SR 630 near Fort Meade, Polk County, Florida 33841.

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 F.A.C. Rule 17-2.500(5).

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

Date of Receipt of a BACT Application: June 28, 1991.

The BACT determination requested by the applicant is presented below:

Control Technology: Double Absorption/Fiber Mist Eliminators

Pollutant	Emission Limits
SO_2	4 lb/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 Bureau of Air Regulation.

BACT Determination Procedure:

In accordance with Florida Administrative Code Chapter 17-2, Air Pollution, this BACT determination is based on the maximum degree of reduction of each pollutant emitted which the Department, on a case by case basis, taking into account energy, environmental and economic impacts, and other costs, determines is achievable through application of production processes and available methods, systems, and techniques. In addition, the regulations state that in making the BACT determination the Department shall give consideration to:

(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 DER:

Control Technology	Double Absorption/Fiber Mist Eliminators
Pollutant	Emission Limits
SO_2	4.0 lb/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

DER's BACT determination is the same as that proposed by the applicant, determinations 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.

Agrico Chemical Co.
BACT

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)	Deminimus (ug/m^3)	Predicted Ambient Air Quality Impact (ug/m^3)	Fla. AAQS (ug/m^3)
Annual	6.8	N/A	38.9	60
24-hr	80.2	13.0	255.8	260
3-hr	266.6	N/A	544.1	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:

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

Recommended by:

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

April 17, 1992
Date

Approved by:

for Carol M. Browner, Secretary
Dept. of Environmental Regulation

April 17 1992
Date

Florida Department of Environmental Regulation

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

Lawton Chiles, Governor

Carol M. Browner, Secretary

March 10, 1992

CERTIFIED MAIL-RETURN RECEIPT REQUESTED

Mr. Selwyn Presnell, Environmental Manager
Agrico Chemical Company
P. O. Box 1110
Mulberry, Florida 33860

Dear Mr. Presnell:

Attached is one copy of the Technical Evaluation and Preliminary Determination and proposed permits for the modifications to the molten sulfur storage and handling facility and the Nos. 10 and 11 sulfuric acid plants at Agrico's phosphate fertilizer plant located on State Road 630 near Fort Meade, Polk County, Florida.

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

Sincerely,

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

CHF/WH/plm

Attachments

c: Bill Thomas, SWD
Jewell Harper, EPA
John Koogler, P.E.
Chris Shaver, NPS

Sent Fed. Express to Agrico & SW Dist. 3/11/92

STATE OF FLORIDA
DEPARTMENT OF ENVIRONMENTAL REGULATION

CERTIFIED MAIL

In the Matter of an
Application for Permits by:

DER File No. AC 53-201152
AC 53-199112
PSD-FL-179

Mr. Selwyn Presnell
Agrico Chemical Company
P. O. Box 1110
Mulberry, Florida 33860

_____/

INTENT TO ISSUE

The Department of Environmental Regulation gives notice of its intent to issue permits (copies attached) for the proposed projects as detailed in the application specified above for the reasons stated in the attached Technical Evaluation and Preliminary Determination.

The applicant, Agrico Chemical Company, applied on August 12, 1991, to the Department of Environmental Regulation for permits to modify the molten sulfur storage and handling facility and on June 28, 1991, for permits to modify the Nos. 10 and 11 sulfuric acid plants at Agrico's South Pierce phosphate fertilizer manufacturing plant on State Road 630 near Fort Meade, Polk County, Florida.

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

Pursuant to Section 403.815, Florida Statutes and Rule 17-103.150, F.A.C., you (the applicant) are required to publish at your own expense the enclosed Notice of Intent to Issue Permits. 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 permits.

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

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

The Petition shall contain the following information;

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

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

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

Executed in Tallahassee, Florida.

STATE OF FLORIDA DEPARTMENT
OF ENVIRONMENTAL REGULATION

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 3-11-92 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

3-11-92
Date

Copies furnished to:
Bill Thomas, SWD
Jewell Harper, EPA
John Koogler, P.E.
Chris Shaver, NPS

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

The Department of Environmental Regulation gives notice of its intent to issue construction permits to Agrico Chemical Company, P. O. Box 1110, Mulberry, Florida 33860. The permits will allow the applicant to modify (increase production) the existing molten sulfur storage and handling facility (AC 53-201152) and the Nos. 10 and 11 sulfuric acid plants (AC 53-199112 and PSD-FL-179) at Agrico's South Pierce phosphate fertilizer manufacturing plant on State Road 630 near Fort Meade, Polk County, Florida 33841. The modification to the sulfuric acid plants require a Best Available Control Technology (BACT) determination for sulfur dioxide and acid mist. The ambient air impact of the emissions for sulfur dioxide from this facility are estimated to be 38.9 ug/m^3 (annual), 255.8 ug/m^3 (24 hr), and 544.1 ug/m^3 (3 hr). The PSD increments for sulfur dioxide consumed by this facility in the Class II area are estimated to be 6.8 ug/m^3 (annual) or 34% of the available increment, 80.2 ug/m^3 (24 hr) or 88% of the available increment, and 266.6 ug/m^3 (3 hr) or 52% of the available increment. The sulfur dioxide emissions from this modification will have no significant impact in the Class I Chassahowitzka National Wilderness Area. These emissions will not cause 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. The petition must contain the information set forth below and must be filed (received) in the Office of General Counsel of the Department at 2600 Blair Stone Road, Tallahassee, Florida 32399-2400, within 14 days of publication of this notice. Petitioner shall mail a copy of the petition to the applicant at the address indicated above at the time of filing. Failure to file a petition within this time period shall constitute a waiver of any right such person may have to request an administrative determination (hearing) under Section 120.57, Florida Statutes.

The Petition shall contain the following information; (a) The name, address, and telephone number of each petitioner, the

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

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

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

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

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

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

Further, 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

Agrico Chemical Company
South Pierce, Polk County, Florida

SULFURIC ACID PRODUCTION MODIFICATION

Molten Sulfur Storage and Handling Facility
File No.: AC 53-201152

Sulfuric Acid Plants Nos. 10 and 11 Modification
File No.: AC 53-199112 (PSD-FL-179)

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

March 10, 1992

I. General Information

A. Applicant

Agrico Chemical Company
P. O. Box 1110
Mulberry, Florida 33860

B. Request

On August 12, 1991, Agrico Chemical Company submitted an application for permit to construct (modify) their existing molten sulfur storage and handling facility (SIC 2819). On June 28, 1991, the applicant submitted an application for permit to construct (modify) the existing Nos. 10 and 11 sulfuric acid plants (SIC 2819). These applications were considered complete on March 2, 1992, when the Department received Koogler & Associates' letter providing the additional information on the project requested by the Department. All of these sources are located at the applicant's South Pierce phosphate fertilizer manufacturing plant on State Road 630 near Fort Meade, Polk County, Florida 33841. The UTM coordinates for this facility are Zone 17, 407.5 km E and 3071.3 km N.

C. Project

The applicant proposes to increase the production of the Nos. 10 and 11 sulfuric acid plants from 2000 TPD to 2700 TPD each (5400 TPD total). The basic sulfuric acid process is not being changed. No additional air pollution control equipment will be installed on the plants. The plant modifications include installing a new turbogenerator, using more efficient economizer units, replacing the tower and acid coolers with heat recovery systems, and adding more catalyst to the converters. Waste heat will be recovered to produce a total of 47.8 MW of electricity from the existing No. 1 and a new No. 2 turbine generator. The additional sulfuric acid produced will be sold to the Sulfuric Acid Trading Company (SATCO) in Tampa and not used to increase fertilizer production at the South Pierce plant.

The molten sulfur storage and handling facility consists of a railcar receiving pit, a truck receiving pit, a west storage tank, an east storage tank, and associated piping, pumps, etc. Additional sulfur will be required to increase the production of the sulfuric acid plants. The sulfur throughput rate to the existing molten sulfur storage and handling facility will increase from 550,000 tons per year to 650,000 tons per year. Up to 75 TPH will be handled by the system. Approximately 90% of this sulfur will be brought to the plant in trucks. The remaining sulfur will be delivered by rail. No physical modifications to the system are needed to handle the additional sulfur.

D. Emissions

The molten sulfur storage and handling facility will increase its throughput from 550,000 to 650,000 TPY. Table I summarizes the estimated emissions from the sulfur storage and handling facility. Table II summarizes the net emission increase from the sulfur facility.

Table I
Molten Sulfur Storage and Handling Facility

	Source Emissions							
	Rail Pit		Truck Pit		West Tank		East Tank	
Pollutant/Emission Factor	Max. lbs/hr	TPY	Max. lbs/hr	TPY	Max. lbs/hr	TPY	Max. lbs/hr	TPY
PM/PM_{10} 0.4 gr/cu. ft.	0.22	0.08	0.92	4.06	0.50	1.40	0.50	1.40
Sulfur Particulate (SP) 0.2 gr/cu. ft.	0.11	0.04	0.46	2.03	0.25	0.70	0.25	0.70
Sulfur Dioxide 0.515 gr/cu. ft.	0.28	0.10	1.19	5.22	0.65	1.79	0.65	1.79
TRS as H_2S 0.303 gr/cu. ft.	0.16	0.06	0.70	3.07	0.38	1.06	0.38	1.06
VOC 5.224E-5 lbs/cu. ft.	0.20	0.07	0.85	3.71	0.46	1.28	0.46	1.28

Table II
Molten Sulfur Storage and Handling Facility

Pollutant	PM/PM_{10}	SP	SO_2	TRS/H_2S	VOC
Proposed Emission (TPY)	6.9	3.5	8.9	5.3	6.3
Present Emission (TPY)	5.8	2.9	7.1	4.2	5.2
Net Increase (TPY)	1.1	0.6	1.8	1.1	1.1

SP = Sulfur Particulate

Each sulfuric acid plant will increase its allowable production from 2000 to 2700 TPD of 100% acid. Tables III and IV summarizes the changes in emissions from sulfuric acid plants Nos. 10 and 11, respectively.

Table III
Sulfuric Acid Plant No. 10 Emissions

	Production (TPD)	Sulfur Dioxide lbs Ton Acid	Sulfur Dioxide lbs/hr	Sulfur Dioxide TPY	Acid Mist lbs Ton Acid	Acid Mist lbs/hr	Acid Mist TPY	NO_x TPY
Proposed	2700	4	450.0	1971.0	0.15	16.9	73.9	59.1
Present	2000	3.21*	306.8	1097.2	0.104*	11.0	35.5	41.0
Increase	700	0.79	143.2	873.8	0.046	5.9	38.4	18.1

* Actual

Table IV
Sulfuric Acid Plant No. 11 Emissions

	Production (TPD)	Sulfur Dioxide lbs Ton Acid	Sulfur Dioxide lbs/hr	Sulfur Dioxide TPY	Acid Mist lbs Ton Acid	Acid Mist lbs/hr	Acid Mist TPY	NO_x TPY
Proposed	2700	4	450.0	1971.0	0.15	16.9	73.9	59.1
Present	2000	3.5*	297.7	1205.1	0.127*	10.3	43.4	41.0
Increase	700	0.5	152.3	765.9	0.023	6.6	30.5	18.1

* Actual

From the previous four tables, it can be seen that the increase in emissions resulting for this project are: 1.1 TPY PM/PM_{10}; 0.6 TPY sulfur particulate; 1641.5 TPY SO_2; 1.1 TPY TRS; 1.1 TPY VOC; 68.9 TPY acid mist; and 36.2 TPY NO_x. The increase in emissions of sulfur dioxide and acid mist exceed the significant emissions rates listed in Table 2 of F.A.C. Rule 17-2.

II. Rule Applicability

The proposed projects, modification of the molten sulfur storage and handling facility and the Nos. 10 and 11 sulfuric acid plants at a phosphate fertilizer plant, are subject to preconstruction review requirements under the provisions of Chapter 403, Florida Statutes, and Chapter 17-2, Florida Administrative Code (F.A.C.).

The sources are in Polk County, an area designated attainment for all criteria pollutants (F.A.C. Rule 17-2.420).

The facility (SIC 2874) is a major source of particulate matter, sulfur dioxide, and fluorides because the potential emission of each of these pollutants exceeds 100 TPY. Chemical process plants are listed in Table 500-1, Major Facility Categories.

The proposed project is subject to the Prevention of Significant Deterioration Regulations, F.A.C. Rule 17-2.500, because the contemporaneous emissions increases of sulfur dioxide and acid mist from the sulfuric acid plants exceed the significant emission rates listed in Table 500-2 of F.A.C. Rule 17-2. The emission limits for these pollutants for the sulfuric acid plants will be established by a Best Available Control Technology (BACT) determination pursuant to F.A.C. Rule 17-2.500(5). The applicant is also subject to the other preconstruction review requirements listed in F.A.C. Rule 17-2.500.

In addition, the proposed modifications are subject to 40 CFR 60, Subpart H, Standards of Performance for Sulfuric Acid Plants, and F.A.C. Rule 17-2.600(11), Sulfur Storage and Handling Facilities.

III. Technical Evaluation

The applicant assumes that the increased throughput for the molten sulfur storage and handling facility with cause a proportional increase in air emissions. These emissions will comply with the applicable regulations.

The emission limits proposed as BACT for the sulfuric acid plants and accepted by the Department are equivalent to the new source performance standards listed in 40 CFR 60, Subpart H. Emission test results on a similar modified plant showed that it had met these emission limits.

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 F.A.C. Rule 17-2.500. 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 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 SO_2 is given below:

PSD de minimus concentration (ug/m^3)	13
Averaging Time	24-hr
Maximum Predicted Impact (ug/m^3)	10

There are no monitoring de minimus concentrations for H_2SO_4 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 for the sulfuric acid plant stacks since both 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. Direction-specific downwash parameters were used for the sulfur storage and handling system. 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 SO_2. 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: 0.5, 0.75, 1.0, 1.5, 2.0, 2.5, 3.0, 5.0, 7.5, 10.0 and 12.5 km. The receptor ring at 0.5 km corresponds to the nearest property boundary. The results of this modeling showed that the increases in ambient ground-level concentrations for all averaging times are greater than the PSD significant impact levels for SO_2, thus requiring the applicant to do a full impact analysis for comparison with the AAQS and the PSD Class II SO_2 increments. The significant impact area extended to 12.5 km. The results of these analyses for SO_2 are shown below:

AAQS Analysis (ug/m^3)

Avg. Time	Annual	3-hr	24-hr
Maximum Predicted Concentration	39	544	256
AAQS	60	1300	260

PSD Class II Increment Analysis (ug/m^3)

Avg. Time	Annual	3-hr	24-hr
Maximum Predicted Consumption Concentration	7	267	80
Increment	20	512	91

The maximum predicted SO_2 concentrations are all less than the appropriate AAQS and PSD Class II increments.

The nearest PSD Class I area is the Chassahowitzka National Wilderness Area located 104 km northwest of the facility. The impact of all of the increment consuming sources on this Class I area was evaluated using ISCST. ISCST modeling predicted exceedances of the 24-hour Class I SO_2 increment. The National Park Service (NPS) and the Department directed the applicant to further evaluate the SO_2 impacts on the Class I area by using the long range transport model, Mesopuff, which is a more applicable model for distances greater than 100 km. The results from this model showed that the impact of increased SO_2 emissions from the project on days of predicted exceedances of the SO_2 increment is less than the NPS proposed significant impact level of 0.07 ug/m^3.

Sulfuric acid mist is a non-criteria pollutant, which means that neither a national ambient air quality standard nor a PSD

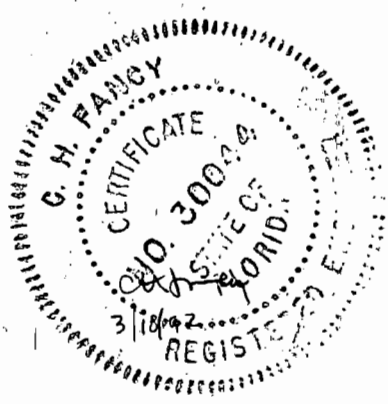
Significant Impact has been defined for this pollutant. However, the Department does have a draft Air Toxics Permitting Strategy which defines a no-threat level of 2.4 ug/m^3, 24-hour average for sulfuric acid mist. The Department used the same modeling procedure described above to evaluate the maximum ground level concentration of sulfuric acid mist due to the facility. The result was 3.5 ug/m^3. 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 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 104 km to the northwest. 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 Agrico Chemical Company the Department has reasonable assurance that the proposed projects, 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

Lawton Chiles, Governor

Carol M. Browner, Secretary

PERMITTEE:
Agrico Chemical Company
Post Office Box 1110
Mulberry, Florida 33860

Permit Number: AC 53-201152
Expiration Date: Jan. 1, 1994
County: Polk
Latitude/Longitude: 27°45'52"N
81°56'19"W
Project: Molten Sulfur Storage and Handling System

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

For the modification to increase the sulfur throughput rate to a maximum of 2050 TPD and 650,000 TPY for the molten sulfur storage and handling facility. The facility consists of a rail and truck unloading system; two 1050 short ton (ST) molten sulfur storage tanks; one 100 ST rail pit; one 600 ST truck pit; and the associated transfer pumps and piping. The molten sulfur system is located at the Agrico's South Pierce facility on SR 630 near Fort Meade, Polk County, Florida 33841. The UTM coordinates of this facility are Zone 17, 407.5 km E and 3071.3 km N.

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

Attachments are listed below:

1. Agrico's application received August 12, 1991.
2. DER's letter dated August 26, 1991.
3. Koogler & Associates' letter dated October 22, 1991.
4. Koogler & Associates' letter dated February 27, 1992.

GENERAL CONDITIONS:

1. The terms, conditions, requirements, limitations, and restrictions set forth in this permit are "Permit Conditions" and are binding and enforceable pursuant to Sections 403.161, 403.727, or 403.859 through 403.861, Florida Statutes. The permittee is placed on notice that the Department will review this permit periodically and may initiate enforcement action for any violation of these conditions.

2. This permit is valid only for the specific processes and operations applied for and indicated in the approved drawings or exhibits. Any unauthorized deviation from the approved drawings, exhibits, specifications, or conditions of this permit may constitute grounds for revocation and enforcement action by the Department.

3. As provided in Subsections 403.087(6) and 403.722(5), Florida Statutes, the issuance of this permit does not convey any vested rights or any exclusive privileges. Neither does it authorize any injury to public or private property or any invasion of personal rights, nor any infringement of federal, state or local laws or regulations. This permit is not a waiver of or approval of any other Department permit that may be required for other aspects of the total project which are not addressed in the permit.

4. This permit conveys no title to land or water, does not constitute State recognition or acknowledgement of title, and does not constitute authority for the use of submerged lands unless herein provided and the necessary title or leasehold interests have been obtained from the State. Only the Trustees of the Internal Improvement Trust Fund may express State opinion as to title.

5. This permit does not relieve the permittee from liability for harm or injury to human health or welfare, animal, or plant life, or property caused by the construction or operation of this permitted source, or from penalties therefore; nor does it allow the permittee to cause pollution in contravention of Florida Statutes and Department rules, unless specifically authorized by an order from the Department.

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

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 Florida Administrative Code Rules 17-4.120 and 17-30.300, F.A.C., as applicable. The permittee shall be liable for any non-compliance of the permitted activity until the transfer is approved by the Department.

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

13. The permittee shall comply with the following:

a. Upon request, the permittee shall furnish all records and plans required under Department rules. During enforcement actions, the retention period for all records will be extended automatically unless otherwise stipulated by the Department.

b. The permittee shall hold at the facility or other location designated by this permit records of all monitoring information (including all calibration and maintenance records and all original strip chart recordings for continuous monitoring instrumentation) required by the permit, copies of all reports required by this permit, and records of all data used to complete the application for 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.

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 dates 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 corrected promptly.

SPECIFIC CONDITIONS:

1. Agrico's molten sulfur storage and handling facility shall be allowed to operate continuously (i.e., 8760 hours/year).

2. The maximum molten sulfur throughput rate shall neither exceed 2050 tons per day (TPD), nor 650,000 tons per year (TPY), based on the combined acid production capacity of 5400 TPD 100% sulfuric acid for the Nos. 10 and 11 plants.

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].

6. The permittee shall employ proper operation and maintenance procedures to control emissions from the molten sulfur storage and handling facility as specified in F.A.C. Rule 17-2.600(11).

SPECIFIC CONDITIONS:

7. Initial compliance tests shall be conducted in accordance with the July 1, 1991, version of 40 CFR 60, Appendix A, using EPA Method 9, for visible emissions. Test run duration shall not be less than 30 minutes. The tests for the vents of the storage tanks and sulfur pits shall be conducted while the tanks and pits are being filled (filling does not have to be continuous during the entire test). Routine VE tests shall be at the frequency specified in any permit to operate this facility issued by the Southwest District.

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

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

Source		Estimated Emissions				
		PM/PM_{10}	SP	SO_2	TRS/H_2S	VOC
East Tank	lb/hr (max)	0.50	0.25	0.65	0.38	0.46
	lb/hr (avg)	0.32	0.16	0.41	0.24	0.29
(No. 1)	TPY	1.40	0.70	1.79	1.06	1.28
West Tank	lb/hr (max)	0.50	0.25	0.65	0.38	0.46
	lb/hr (avg)	0.32	0.16	0.41	0.24	0.29
(No. 2)	TPY	1.40	0.70	1.79	1.06	1.28
Truck Pit	lb/hr (max)	0.92	0.46	1.19	0.70	0.85
	TPY	4.06	2.03	5.22	3.07	3.71
Rail Pit	lb/hr (max)	0.22	0.11	0.28	0.16	0.20
	lb/hr (avg)	0.02	0.01	0.02	0.01	0.02
	TPY	0.08	0.04	0.10	0.06	0.07

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

11. The permittee, for good cause, may request that this construction permit be extended. Such a request shall be submitted

SPECIFIC CONDITIONS:

to the Bureau of Air Regulation prior to 60 days before the expiration of the permit (F.A.C. Rule 17-4.090).

12. 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. Rules 17-4.055 and 17-4.220).

Issued this _____ day
of _____, 1992

STATE OF FLORIDA DEPARTMENT OF ENVIRONMENTAL REGULATION

_____

STEVE SMALLWOOD, P.E., Director
Division of Air Resources
Management

Florida Department of Environmental Regulation

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

Lawton Chiles, Governor

Carol M. Browner, Secretary

PERMITTEE:

Agrico Chemical Company
Post Office Box 1110
Mulberry, Florida 33860

Permit Number: AC 53-199112
PSD-FL-179
Expiration Date: Jan. 1, 1994
County: Polk
Latitude/Longitude: 27°45'52"N
81°56'19"W
Project: Sulfuric Acid Plants Nos. 10 & 11 - Production Increases to 2700 TPD Per Plant (5400 TPD total)

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

For the modifications to the existing Nos. 10 and 11 sulfuric acid plants that will increase each plant's production to 2700 TPD 100% sulfuric acid (5400 TPD total for both plants). The plant modifications include installing a new turbogenerator, using more efficient economizer units, replacing the tower and acid coolers with heat recovery systems, and adding more catalyst to the converters. These sources are located at the permittee's South Pierce phosphate fertilizer manufacturing facility on SR 630 near Fort Meade, Polk County, Florida 33841. The UTM coordinates of this facility are Zone 17, 407.5 km E and 3071.3 km N.

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

Attachments are listed below:

1. Agrico's application received June 28, 1991.
2. DER's letter dated June 26, 1991.
3. Koogler & Associates' letter dated October 22, 1991.
4. Koogler & Associates' letter dated February 27, 1992.

GENERAL CONDITIONS:

1. The terms, conditions, requirements, limitations, and restrictions set forth in this permit are "Permit Conditions" and are binding and enforceable pursuant to Sections 403.161, 403.727, or 403.859 through 403.861, Florida Statutes. The permittee is placed on notice that the Department will review this permit periodically and may initiate enforcement action for any violation of these conditions.

2. This permit is valid only for the specific processes and operations applied for and indicated in the approved drawings or exhibits. Any unauthorized deviation from the approved drawings, exhibits, specifications, or conditions of this permit may constitute grounds for revocation and enforcement action by the Department.

3. As provided in Subsections 403.087(6) and 403.722(5), Florida Statutes, the issuance of this permit does not convey any vested rights or any exclusive privileges. Neither does it authorize any injury to public or private property or any invasion of personal rights, nor any infringement of federal, state or local laws or regulations. This permit is not a waiver of or approval of any other Department permit that may be required for other aspects of the total project which are not addressed in the permit.

4. This permit conveys no title to land or water, does not constitute State recognition or acknowledgement of title, and does not constitute authority for the use of submerged lands unless herein provided and the necessary title or leasehold interests have been obtained from the State. Only the Trustees of the Internal Improvement Trust Fund may express State opinion as to title.

5. This permit does not relieve the permittee from liability for harm or injury to human health or welfare, animal, or plant life, or property caused by the construction or operation of this permitted source, or from penalties therefore; nor does it allow the permittee to cause pollution in contravention of Florida Statutes and Department rules, unless specifically authorized by an order from the Department.

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

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 Florida Administrative Code Rules 17-4.120 and 17-30.300, F.A.C., as applicable. The permittee shall be liable for any non-compliance of the permitted activity until the transfer is approved by the Department.

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

13. This permit also constitutes:

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

14. The permittee shall comply with the following:

a. Upon request, the permittee shall furnish all records and plans required under Department rules. During enforcement actions, the retention period for all records will be extended automatically unless otherwise stipulated by the Department.

b. The permittee shall hold at the facility or other location designated by this permit records of all monitoring information (including all calibration and maintenance records and all original strip chart recordings for continuous monitoring instrumentation) required by the permit, copies of all reports required by this permit, and

GENERAL CONDITIONS:

records of all data used to complete the application 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 each of the sulfuric acid plants (Nos. 10 & 11) shall not exceed 2700 tons per day based on 100% H_2SO_4 (5400 TPD for both plants).

2. Sulfur dioxide emissions from each plant shall not exceed 4 lbs/ton of 100% sulfuric acid produced, 450.0 lbs/hr, and 1971.0 tons/yr.

3. Sulfuric acid mist emissions from each plant shall not exceed 0.15 lb/ton of 100% sulfuric acid produced, 16.9 lbs/hr, and 73.9 tons/yr.

4. Nitrogen oxides emissions from each plant shall not exceed 0.12 lb/ton of 100% sulfuric acid produced, 13.5 lbs/hr, and 59.1 tons/yr.

The nitrogen oxides limits are subject to revision if sufficient test data indicate that the emission factor is improper.

SPECIFIC CONDITIONS:

5. Visible emissions from each plant shall not exceed 10% opacity.

6. A continuous emission monitor shall be used to monitor sulfur dioxide emissions from each plant in accordance with 40 CFR 60, Subpart H (July 1, 1991), Standards of Performance for Sulfuric Acid Plants. Initial and annual compliance tests shall be conducted using: EPA Method 7E for nitrogen oxides, EPA Method 8 for sulfur dioxide and acid mist, and EPA Method 9 for visible emissions as described in 40 CFR 60, Appendix A (July 1, 1991).

7. The compliance tests shall be conducted at 90 to 100% of the permitted capacity (2430 - 2700 TPH sulfuric acid production) and within 30 days after operating the plant at a rate above 2000 TPH. The Department's Southwest District office shall be notified in writing 15 days prior to source testing. Written reports of the tests shall be submitted to that office within 45 days of test completion.

8. The permittee, for good cause, may request that this construction permit be extended. Such a request shall be submitted to the Bureau of Air Regulation prior to 60 days before the expiration of the permit (F.A.C. Rule 17-4.090).

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

Issued this _____ day
of _____, 1992

STATE OF FLORIDA DEPARTMENT
OF ENVIRONMENTAL REGULATION

_____
Carol M. Browner, Secretary

Best Available Control Technology (BACT) Determination
Agrico Chemical Company
Polk County

The applicant proposes to increase sulfuric acid production to 2700 tons per day each for the Nos. 10 and 11 sulfuric acid plants (5400 TPD total) that are located at the South Pierce phosphate fertilizer manufacturing facility on SR 630 near Fort Meade, Polk County, Florida 33841.

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 F.A.C. Rule 17-2.500(5).

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

Date of Receipt of a BACT Application: June 28, 1991.

The BACT determination requested by the applicant is presented below:

Control Technology: Double Absorption/Fiber Mist Eliminators

Pollutant	Emission Limits
SO_2	4 lb/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 Bureau of Air Regulation.

BACT Determination Procedure:

In accordance with Florida Administrative Code Chapter 17-2, Air Pollution, this BACT determination is based on the maximum degree of reduction of each pollutant emitted which the Department, on a case by case basis, taking into account energy, environmental and economic impacts, and other costs, determines is achievable through application of production processes and available methods, systems, and techniques. In addition, the regulations state that in making the BACT determination the Department shall give consideration to:

(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 DER:

Control Technology	Double Absorption/Fiber Mist Eliminators
Pollutant	Emission Limits
SO_2	4.0 lb/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

DER's BACT determination is the same as that proposed by the applicant, determinations 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.

Agrico Chemical Co.
BACT

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)	Deminimus (ug/m^3)	Predicted Ambient Air Quality Impact (ug/m^3)	Fla. AAQS (ug/m^3)
Annual	6.8	N/A	38.9	60
24-hr	80.2	13.0	255.8	260
3-hr	266.6	N/A	544.1	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:

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

Recommended by:

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

_____1991
Date

Approved by:

Carol M. Browner, Secretary
Dept. of Environmental Regulation

_____1991
Date

Florida Department of Environmental Regulation

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

Lawton Chiles, Governor

Carol M. Browner, Secretary

November 20, 1991

CERTIFIED MAIL - RETURN RECEIPT REQUESTED

Mr. Selwyn Presnell, Env. Mgr.
Agrico Chemical Company
Post Office Box 1110
Mulberry, Florida 33860

Dear Mr. Presnell:

Re: File Number AC 53-199112 Sulfuric Acid Plants Nos. 10 & 11
File Number AC 53-201152 Molten Sulfur Storage System

The Department has reviewed your response received on October 23, 1991 to its incompleteness letters of July 26, 1991 and August 26, 1991. In addition, the National Park Service has communicated its concerns to the Department about the impact this project may have on the Chassahowitzka Class I area located to the northwest of your facility. Before this application can be processed further, the Department will need the following information:

Please evaluate the impact of this project on the Class I Chassahowitzka National Wilderness Area. This evaluation should include a cumulative SO_2 PSD Class I increment analysis, a visibility analysis, and an air quality related values analysis (AQRV). The AQRV analysis includes impacts to soils, vegetation, and wildlife.

Please send the requested information to Cleve Holladay at the above address. The processing of your application will continue as soon as this information is received.

Sincerely,

Barry D. Andrews

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

CHF/kt

cc: B. Thomas, SW District
J. Koogler, P.E.
J. Harper, EPA
C. Shaver, NPS

P 617 884 189

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

UNITED STATES POSTAL SERVICE

Sent to Selwyn Presnell	
Street & No. Agrico Chem. Co	
P.O., State & ZIP Code Mulberry, Fl	
Postage	$
Certified Fee	
Special Delivery Fee	
Restricted Delivery Fee	
Return Receipt Showing to Whom & Date Delivered	
Return Receipt Showing to Whom, Date, & Address of Delivery	
TOTAL Postage & Fees	$
Postmark or Date AC 53-199112 201152 11-20-91	

PS Form **3800**, June 1990

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

I also wish to receive the following services (for an extra fee):
1. ☐ Addressee's Address
2. ☐ Restricted Delivery

Consult postmaster for fee.

3. Article Addressed to:
Mr. Selwyn Presnell, Env. Mgr
Agrico Chemical Co
P.O. Box 1110
Mulberry, Fl 33860

4a. Article Number P 617 884 189

4b. Service Type
☐ Registered ☐ Insured
☒ Certified ☐ COD
☐ Express Mail ☐ Return Receipt for Merchandise

7. Date of Delivery 11-25-91

5. Signature (Addressee)

6. Signature (Agent)

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

PS Form **3811**, October 1990 ☆U.S. GPO: 1990—273-861 **DOMESTIC RETURN RECEIPT**

Florida Department of Environmental Regulation

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

Lawton Chiles, Governor

Carol M. Browner, Secretary

August 26, 1991

CERTIFIED MAIL - RETURN RECEIPT REQUESTED

Mr. Selwyn Presnell, Environmental Manager
Agrico Chemical Company
Post Office Box 1110
Mulberry, Florida 33860

Dear Mr. Presnell:

Re: AC 53-201152, Molten Sulfur Storage and Handling System

The Department has made a preliminary review of your application for permit to modify the molten sulfur storage and handling system at Agrico Chemical Company's South Pierce plant. Before this application can be processed, the Department will need the following information:

1. Please clarify the process rate for this system. The 150,000 lbs/hr process rate for sulfur listed in Section III B. of the application is not equivalent to the maximum process rate of 2,050 TPD listed in Attachment II.

2. What is the basis of the pollutant concentrations listed in Attachment 1? What is the ventilation rate for the system?

3. Please provide a copy of the Koogler and Enviroplan data that the 0.2 grains/dscf sulfur particle concentration is based on.

4. What is the basis of the equilibrium concentrations for H_2S, SO_2, and VOC? What is the relationship between the equilibrium concentrations, concentrations in Attachment 1, and the emission estimates?

5. Please provide a copy of the 3 references for emission estimates prepared by Dr. John B. Koogler.

6. What is the basis for the wind induced ventilation for the 5 vents on the storage tanks (Attach. 3c, 4.c.)?

We will resume processing the application after the requested information is received. If you have any questions on this matter, please write to me or call Willard Hanks at 904-488-1344.

Sincerely,

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

CHF/WH/plm

c: Bill Thomas, SW Dist.
Pradeep Raval, P.E.

P 832 538 939

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

UNITED STATES POSTAL SERVICE

Sent to Mr. Selwyn Presnell	
Street & No. Agrico Chem. Co.	
P.O. State & ZIP Code Mulberry, FL	
Postage	$
Certified Fee	
Special Delivery Fee	
Restricted Delivery Fee	
Return Receipt Showing to Whom & Date Delivered	
Return Receipt Showing to Whom, Date, & Address of Delivery	
TOTAL Postage & Fees	$
Postmark or Date AC 53-201152 8-26-91	

PS Form **3800**, June 1990

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. Selwyn Presnell, Env. Mgr.
Agrico Chem. Co.
P.O. Box 1110
Mulberry, FL 33860

4. Article Number
P 832 538 939

Type of Service:
☐ Registered ☐ Insured
☒ Certified ☐ COD
☐ Express Mail

Always obtain signature of addressee or agent and DATE DELIVERED.

5. Signature – Addressee
X

6. Signature – Agent
X Kay Holloway

7. Date of Delivery
8-29-91

8. Addressee's Address *(ONLY if requested and fee paid)*

PS Form **3811**, Mar. 1987 ★ U.S.G.P.O. 1987-178-268 **DOMESTIC RETURN RECEIPT**

KOOGLER & ASSOCIATES
ENVIRONMENTAL SERVICES
4014 NW THIRTEENTH STREET
GAINESVILLE, FLORIDA 32609
904/377-5822 ▪ FAX 377-7158

RECEIVED
DER - MAIL ROOM
1991 AUG 12 AM 9:02

KA 261-91-01

July 29, 1991

RECEIVED
AUG 12 1991
Division of Air
Resources Management

Mr. Willard Hanks
Florida Department of
Environmental Regulation
Twin Towers Office Building
2600 Blair Stone Road
Tallahassee, FL 32399-2400

Subject: Application for Modification of Molten Sulfur System
Agrico Chemical Company
Mulberry, Florida

Dear Mr. Hanks:

Enclosed are four signed copies of the modification application and a check for $1,000 (permit application fee) for Agrico Chemical Company's molten sulfur system in Mulberry, Polk County, Florida.

If you have any questions concerning this application, please do not hesitate to contact me.

Very truly yours,

KOOGLER & ASSOCIATES

Pradeep A. Raval /wa

Pradeep A. Raval

PAR:wa
Enc.

c: Mr. Phillip Steadham
H. Hanks
B. Thomas, SW Dist.

1031

Air Req.

AGRICO
Division of Freeport-McMoRan Resource Partners

Agrico Chemical Company
P. O. Box 1110
Mulberry, FL 33860
(813) 428-1431

To Whom It May Concern:

Please be advised that the undersigned is Senior Vice President, Florida Operations, of Agrico Chemical Company, a division of Freeport-McMoRan Resource Partners Limited Partnership, with its principal office at 1615 Poydras Street, New Orleans, Louisiana 70112, hereinafter called "Agrico".

The Environmental Manager of Agrico is authorized to make, execute and submit to any appropriate federal, state or local government authority, in behalf of Agrico, any statement, application, request or the like, that is or shall be necessary, appropriate, or useful, for normal business activities.

Very truly yours,

AGRICO CHEMICAL COMPANY

By T. P. Fowler

T. P. Fowler
Senior Vice President,
Florida Operations

[redacted]

AGRICO
Division of Freeport-McMoRan Resource Partners
Agrico Chemical Company

JULY 17, 1991

Pay ********1000*DOLLARS AND 00*CENTS $1,000.00

To The Order Of
FLORIDA DEPT OF ENVIRONMENTAL REGULATION
2600 BLAIR STONE ROAD
TALLAHASSEE, FL 323992405

Two Signatures Required over $10,000

FREEPORT Lawrence Huber

Chase Manhattan Bank, Syracuse, New York

[redacted]

$1,000 pd.
8-12-91
Receipt #151295

STATE OF FLORIDA

DEPARTMENT OF ENVIRONMENTAL REGULATION

AC 53-201152

APPLICATION TO ~~XXXXXXX~~/CONSTRUCT AIR POLLUTION SOURCES

SOURCE TYPE: Molten Sulfur Storage & Handling System [ ] New[1] [X] Existing[1]

APPLICATION TYPE: [ ] Construction [ ] Operation [X] Modification

COMPANY NAME: Agrico Chemical Company - South Pierce COUNTY: Polk

Identify the specific emission point source(s) addressed in this application (i.e. Lime Kiln No. 4 with Venturi Scrubber; Peaking Unit No. 2, Gas Fired) See Attachment 7

SOURCE LOCATION: Street S.R. 630 City Mulberry

UTM: East (17) 407.5 km North 3071.3 km

Latitude 27 ° 45 ' 52 "N Longitude 81 ° 56 ' 19 "W

APPLICANT NAME AND TITLE: Selwyn Presnell, Environmental Manager

APPLICANT ADDRESS: P.O. Box 1110, Mulberry, Florida 33860

SECTION I: STATEMENTS BY APPLICANT AND ENGINEER

A. APPLICANT

I am the undersigned owner or authorized representative* of Agrico Chemical Company

I certify that the statements made in this application for a construction permit are true, correct and complete to the best of my knowledge and belief. Further I agree to maintain and operate the pollution control source and pollution control facilities in such a manner as to comply with the provision of Chapter 403, Florida Statutes, and all the rules and regulations of the department and revisions thereof. I also understand that a permit, if granted by the department, will be non-transferable and I will promptly notify the department upon sale or legal transfer of the permitted establishment.

*Attach letter of authorization

Signed: Selwyn Presnell

Selwyn Presnell, Environmental Manager
Name and Title (Please Type)

Date: 8-5-91 Telephone No. (813) 428-1431

B. PROFESSIONAL ENGINEER REGISTERED IN FLORIDA (where required by Chapter 471, F.S.)

This is to certify that the engineering features of this pollution control project have been ~~designed~~/examined by me and found to be in conformity with modern engineering principles applicable to the treatment and disposal of pollutants characterized in the permit application. There is reasonable assurance, in my professional judgment, that

[1] See Florida Administrative Code Rule 17-2.100(57) and (104)

the pollution control facilities, when properly maintained and operated, will discharge an effluent that complies with all applicable statutes of the State of Florida and the rules and regulations of the department. It is also agreed that the undersigned will furnish, if authorized by the owner, the applicant a set of instructions for the proper maintenance and operation of the pollution control facilities and, if applicable, pollution sources.

Signed _____

John B. Koogler, Ph.D., P.E.
Name (Please Type)

Koogler & Associates, Environmental Services
Company Name (Please Type)

4014 N.W. 13th Street, Gainesville, FL 32609
Mailing Address (Please Type)

Florida Registration No. 12925 Date: 7/29/91 Telephone No. (904) 377-5822

SECTION II: GENERAL PROJECT INFORMATION

A. Describe the nature and extent of the project. Refer to pollution control equipment, and expected improvements in source performance as a result of installation. State whether the project will result in full compliance. Attach additional sheet if necessary.

Application for an increase in the molten sulfur throughput rate from 550,000 tons per year to 650,000 tons per year for the existing molten sulfur storage and handling system at the Agrico South Pierce facility. The project will be in full compliance with all of the applicable regulations.

B. Schedule of project covered in this application (Construction Permit Application Only)

Start of Construction October 1991 Completion of Construction October 1992

C. Costs of pollution control system(s): (Note: Show breakdown of estimated costs only for individual components/units of the project serving pollution control purposes. Information on actual costs shall be furnished with the application for operation permit.)

None

D. Indicate any previous DER permits, orders and notices associated with the emission point, including permit issuance and expiration dates.

AC53-167779 issued: 12/14/89 expired: 01/01/91

AO53-187290, issued: 12/05/90 expires: 12/1/95

E. Requested permitted equipment operating time: hrs/day 24 ; days/wk 7 ; wks/yr 52 ;

if power plant, hrs/yr ____; if seasonal, describe: _____

F. If this is a new source or major modification, answer the following questions. (Yes or No) Not Applicable

1. Is this source in a non-attainment area for a particular pollutant? _____

   a. If yes, has "offset" been applied? _____

   b. If yes, has "Lowest Achievable Emission Rate" been applied? _____

   c. If yes, list non-attainment pollutants. _____

2. Does best available control technology (BACT) apply to this source? If yes, see Section VI. _____

3. Does the State "Prevention of Significant Deterioriation" (PSD) requirement apply to this source? If yes, see Sections VI and VII. _____

4. Do "Standards of Performance for New Stationary Sources" (NSPS) apply to this source? _____

5. Do "National Emission Standards for Hazardous Air Pollutants" (NESHAP) apply to this source? _____

H. Do "Reasonably Available Control Technology" (RACT) requirements apply to this source? No

   a. If yes, for what pollutants? _____

   b. If yes, in addition to the information required in this form, any information requested in Rule 17-2.650 must be submitted.

Attach all supportive information related to any answer of "Yes". Attach any justification for any answer of "No" that might be considered questionable.

SECTION III: AIR POLLUTION SOURCES & CONTROL DEVICES (Other than Incinerators)

A. Raw Materials and Chemicals Used in your Process, if applicable:

Description	Contaminants		Utilization Rate - lbs/hr	Relate to Flow Diagram
	Type	% Wt		
Molten Sulfur	Ash	0.005	150,000	

(See also Attachment 1)

B. Process Rate, if applicable: (See Section V, Item 1)

1. Total Process Input Rate (lbs/hr): 150,000

2. Product Weight (lbs/hr): 150,000

C. Airborne Contaminants Emitted: (Information in this table must be submitted for each emission point, use additional sheets as necessary)

See Attachments 3A, 3B, and 3C

Name of Contaminant	Emission[1]		Allowed[2] Emission Rate per Rule 17-2	Allowable[3] Emission lbs/hr	Potential[4] Emission		Relate to Flow Diagram
	Maximum lbs/hr	Actual T/yr			lbs/yr	T/yr	

[1]See Section V, Item 2.

[2]Reference applicable emission standards and units (e.g. Rule 17-2.600(5)(b)2. Table II, E. (1) - 0.1 pounds per million BTU heat input)

[3]Calculated from operating rate and applicable standard.

[4]Emission, if source operated without control (See Section V, Item 3).

D. Control Devices: (See Section V, Item 4) NONE

Name and Type (Model & Serial No.)	Contaminant	Efficiency	Range of Particles Size Collected (in microns) (If applicable)	Basis for Efficiency (Section V Item 5)

E. Fuels NONE

Type (Be Specific)	Consumption*		Maximum Heat Input (MMBTU/hr)
	avg/hr	max./hr	

*Units: Natural Gas--MMCF/hr; Fuel Oils--gallons/hr; Coal, wood, refuse, other--lbs/hr.

Fuel Analysis:

Percent Sulfur: _____ Percent Ash: _____

Density: _____ lbs/gal Typical Percent Nitrogen: _____

Heat Capacity: _____ BTU/lb _____ BTU/gal

Other Fuel Contaminants (which may cause air pollution): _____

F. If applicable, indicate the percent of fuel used for space heating. NA

Annual Average _____ Maximum _____

G. Indicate liquid or solid wastes generated and method of disposal.

Small spills of molten sulfur may occur from time to time. The sulfur solidifies upon cooling and is then recovered and sold for recycling.

H. Emission Stack Geometry and Flow Characteristics (Provide data for each stack): NA

Stack Height: _____ ft. Stack Diameter: _____ ft.

Gas Flow Rate: _____ ACFM _____ DSCFM Gas Exit Temperature: _____ °F.

Water Vapor Content: _____ % Velocity: _____ FPS

SECTION IV: INCINERATOR INFORMATION

NA

Type of Waste	Type 0 (Plastics)	Type I (Rubbish)	Type II (Refuse)	Type III (Garbage)	Type IV (Pathological)	Type V (Liq.& Gas By-prod.)	Type VI (Solid By-prod.)
Actual lb/hr Incinerated							
Uncontrolled (lbs/hr)							

Description of Waste _____

Total Weight Incinerated (lbs/hr) _____ Design Capacity (lbs/hr) _____

Approximate Number of Hours of Operation per day _____ day/wk _____ wks/yr. _____

Manufacturer _____

Date Constructed _____ Model No. _____

	Volume $(ft)^3$	Heat Release (BTU/hr)	Fuel		Temperature (°F)
			Type	BTU/hr	
Primary Chamber					
Secondary Chamber					

Stack Height: _____ ft. Stack Diamter: _____ Stack Temp. _____

Gas Flow Rate: _____ ACFM _____ DSCFM* Velocity: _____ FPS

*If 50 or more tons per day design capacity, submit the emissions rate in grains per standard cubic foot dry gas corrected to 50% excess air.

Type of pollution control device: [ ] Cyclone [ ] Wet Scrubber [ ] Afterburner

[ ] Other (specify) _____

Brief description of operating characteristics of control devices: _____

Ultimate disposal of any effluent other than that emitted from the stack (scrubber water, ash, etc.):

NOTE: Items 2, 3, 4, 6, 7, 8, and 10 in Section V muat be included where applicable.

SECTION V: SUPPLEMENTAL REQUIREMENTS

Please provide the following supplements where required for this application.

1. Total process input rate and product weight -- show derivation [Rule 17-2.100(127)]
   SEE ATTACHMENT 2
2. To a construction application, attach basis of emission estimate (e.g., design calculations, design drawings, pertinent manufacturer's test data, etc.) and attach proposed methods (e.g., FR Part 60 Methods 1, 2, 3, 4, 5) to show proof of compliance with applicable standards. To an operation application, attach test results or methods used to show proof of compliance. Information provided when applying for an operation permit from a construction permit shall be indicative of the time at which the test was made.
   SEE ATTACHMENTS 3A, 3B and 3C.
3. Attach basis of potential discharge (e.g., emission factor, that is, AP42 test).
   SEE ATTACHMENTS 3A, 3B and 3C.
4. With construction permit application, include design details for all air pollution control systems (e.g., for baghouse include cloth to air ratio; for scrubber include cross-section sketch, design pressure drop, etc.)
   NA
5. With construction permit application, attach derivation of control device(s) efficiency. Include test or design data. Items 2, 3 and 5 should be consistent: actual emissions = potential (1-efficiency). NA
6. An 8 1/2" x 11" flow diagram which will, without revealing trade secrets, identify the individual operations and/or processes. Indicate where raw materials enter, where solid and liquid waste exit, where gaseous emissions and/or airborne particles are evolved and where finished products are obtained.
   SEE ATTACHMENT 4
7. An 8 1/2" x 11" plot plan showing the location of the establishment, and points of airborne emissions, in relation to the surrounding area, residences and other permanent structures and roadways (Example: Copy of relevant portion of USGS topographic map).
   SEE ATTACHMENT 5
8. An 8 1/2" x 11" plot plan of facility showing the location of manufacturing processes and outlets for airborne emissions. Relate all flows to the flow diagram.
   SEE ATTACHMENT 6

9. The appropriate application fee in accordance with Rule 17-4.05. The check should be made payable to the Department of Environmental Regulation. $1,000 (similar sources)

10. With an application for operation permit, attach a Certificate of Completion of Construction indicating that the source was constructed as shown in the construction permit. NA

SECTION VI: BEST AVAILABLE CONTROL TECHNOLOGY

NOT APPLICABLE

A. Are standards of performance for new stationary sources pursuant to 40 C.F.R. Part 60 applicable to the source?

[ ] Yes [ ] No

Contaminant	Rate or Concentration

B. Has EPA declared the best available control technology for this class of sources (If yes, attach copy)

[ ] Yes [ ] No

Contaminant	Rate or Concentration

C. What emission levels do you propose as best available control technology?

Contaminant	Rate or Concentration

D. Describe the existing control and treatment technology (if any).

1. Control Device/System:
2. Operating Principles:
3. Efficiency:*
4. Capital Costs:

*Explain method of determining

5. Useful Life:

6. Operating Costs:

7. Energy:

8. Maintenance Cost:

9. Emissions:

Contaminant	Rate or Concentration

10. Stack Parameters

a. Height: ft.

b. Diameter: ft.

c. Flow Rate: ACFM

d. Temperature: °F.

e. Velocity: FPS

E. Describe the control and treatment technology available (As many types as applicable, use additional pages if necessary).

1.

a. Control Device:

b. Operating Principles:

c. Efficiency:[1]

d. Capital Cost:

e. Useful Life:

f. Operating Cost:

g. Energy:[2]

h. Maintenance Cost:

i. Availability of construction materials and process chemicals:

j. Applicability to manufacturing processes:

k. Ability to construct with control device, install in available space, and operate within proposed levels:

2.

a. Control Device:

b. Operating Principles:

c. Efficiency:[1]

d. Capital Cost:

e. Useful Life:

f. Operating Cost:

g. Energy:[2]

h. Maintenance Cost:

i. Availability of construction materials and process chemicals:

[1]Explain method of determining efficiency.
[2]Energy to be reported in units of electrical power - KWH design rate.

j. Applicability to manufacturing processes:

k. Ability to construct with control device, install in available space, and operate within proposed levels:

3.

a. Control Device:

b. Operating Principles:

c. Efficiency:[1]

d. Capital Cost:

e. Useful Life:

f. Operating Cost:

g. Energy:[2]

h. Maintenance Cost:

i. Availability of construction materials and process chemicals:

j. Applicability to manufacturing processes:

k. Ability to construct with control device, install in available space, and operate within proposed levels:

4.

a. Control Device:

b. Operating Principles:

c. Efficiency:[1]

d. Capital Costs:

e. Useful Life:

f. Operating Cost:

g. Energy:[2]

h. Maintenance Cost:

i. Availability of construction materials and process chemicals:

j. Applicability to manufacturing processes:

k. Ability to construct with control device, install in available space, and operate within proposed levels:

F. *Describe the control technology selected:*

1. Control Device:

2. Efficiency:[1]

3. Capital Cost:

4. Useful Life:

5. Operating Cost:

6. Energy:[2]

7. Maintenance Cost:

8. Manufacturer:

9. Other locations where employed on similar processes:

a. (1) Company:

(2) Mailing Address:

(3) City:

(4) State:

[1]Explain method of determining efficiency.
[2]Energy to be reported in units of electrical power - KWH design rate.

(5) Environmental Manager:

(6) Telephone No.:

(7) Emissions:[1]

Contaminant	Rate or Concentration

(8) Process Rate:[1]

b. (1) Company:

(2) Mailing Address:

(3) City: (4) State:

(5) Environmental Manager:

(6) Telephone No.:

(7) Emissions:[1]

Contaminant	Rate or Concentration

(8) Process Rate:[1]

10. Reason for selection and description of systems:

[1]Applicant must provide this information when available. Should this information not be available, applicant must state the reason(s) why.

SECTION VII - PREVENTION OF SIGNIFICANT DETERIORATION

NOT APPLICABLE

A. Company Monitored Data

1. _____no. sites _____ TSP _____( ) SO^{2}* _____ Wind spd/dir

Period of Monitoring _____/_____/_____ to _____/_____/_____
month day year month day year

Other data recorded _____

Attach all data or statistical summaries to this application.

*Specify bubbler (B) or continuous (C).

2. Instrumentation, Field and Laboratory

a. Was instrumentation EPA referenced or its equivalent? [ ] Yes [ ] No

b. Was instrumentation calibrated in accordance with Department procedures?

[ ] Yes [ ] No [ ] Unknown

B. Meteorological Data Used for Air Quality Modeling

1. _____ Year(s) of data from ____/____/____ to ____/____/____
month day year month day year

2. Surface data obtained from (location)_____

3. Upper air (mixing height) data obtained from (location)_____

4. Stability wind rose (STAR) data obtained from (location)_____

C. Computer Models Used

1. _____ Modified? If yes, attach description.

2. _____ Modified? If yes, attach description.

3. _____ Modified? If yes, attach description.

4. _____ Modified? If yes, attach description.

Attach copies of all final model runs showing input data, receptor locations, and principle output tables.

D. Applicants Maximum Allowable Emission Data

Pollutant	Emission Rate	
TSP	_____	grams/sec
SO^2	_____	grams/sec

E. Emission Data Used in Modeling

Attach list of emission sources. Emission data required is source name, description of point source (on NEDS point number), UTM coordinates, stack data, allowable emissions, and normal operating time.

F. Attach all other information supportive to the PSD review.

G. Discuss the social and economic impact of the selected technology versus other applicable technologies (i.e., jobs, payroll, production, taxes, energy, etc.). Include assessment of the environmental impact of the sources.

H. Attach scientific, engineering, and technical material, reports, publications, journals, and other competent relevant information describing the theory and application of the requested best available control technology.

ATTACHMENT 1

MOLTEN SULFUR CONTAMINANTS

The following contaminants are present in the vapor space above molten sulfur in the concentrations shown:

	Concentration, lb/acf
Sulfur Particulate	1.757×10^{-5}
Hydrogen Sulfide	$1.719 \times 10^{-2} \times (V^{-0.938})$*
Sulfur Dioxide	5.472×10^{-6}
Volatile Organic Compounds	5.224×10^{-5}
Total Reduced Sulf. Compounds	$1.719 \times 10^{-2} \times (V^{-0.938})$*

* where V - ventilation rate (acf) to the -0.938 power

ATTACHMENT 2

SECTION V.I: SULFUR THROUGHPUT RATES

All the molten sulfur received by the molten sulfur system is supplied to the sulfuric acid plants. The molten sulfur throughput rates for the purpose of permitting are as follows:

TRUCK RECEIVING THROUGHPUT	=	585,000 TPY
RAIL RECEIVING THROUGHPUT	=	65,000 TPY
TOTAL SYSTEM THROUGHPUT	=	650,000 TPY
MAXIMUM DAILY RECEIVING RATE	=	2050 TPD

Individual transfer operation rates are presented in Attachment 3.

ATTACHMENT 3A

BASIS OF EMISSIONS ESTIMATE FOR TRUCK RECEIVING PIT

ASSUMPTIONS

1. Plant sulfur throughput is 650,000 tpy based on two sulfuric acid plants operating at 2700 tpd, 365 dpy.

   = (2 plants x 2700 tpd)(365 dpy)(0.329 ton S/ton H2SO4)
   = 648,459 tpy ~ 650,000 tpy

2. Truck receiving pit throughput is 90% of plant throughput, or 585,000 tpy.

3. Rail receiving pit throughput is 10% of plant throughput, or 65,000 tpy.

4. Truck pit has forced ventilation rate of 2700 cfm, by two fans, 1350 cfm each and a capacity of 600 tons.

5. The head space over the molten sulfur is 3000 cu. ft., based on dimensions of the pit and freeboard.

6. Sulfur particle concentration in vent gas when pit is being filled is 0.2 grains/dscf (based on data obtained from Koogler and Enviroplan).

7. Sulfur vapor concentration in the truck pit at a 300 minute/turnover ventilation rate is at equilibrium with an equilibrium concentration of 0.2 grains/cu. ft. At a 0 minute/turnover ventilation rate (infinite dilution), the sulfur vapor concentration would be 0 grains/cu. ft. The sulfur vapor concentration was approximated with a first order equation (see attached curve), which uses the above boundary conditions and forces the concentration to 10% of the equilibrium value at a one minute/turnover ventilation rate.

EMISSIONS

Sulfur Particulate

= (2 vents x 1350 cfm) x 60 min/hr x 0.2 grains/cu ft

x 0.1 x 1/7000 lb/grain

= 0.46 lb/hr

x 8760 hrs/yr x ton/2000 lbs

= 2.03 tpy

Hydrogen Sulfide, Sulfur Dioxide, and Volatile Organics

Equilibrium concentrations:

H2S = 0.303 grains/cu ft
SO2 = 0.515 grains/cu ft
VOC = 5.224×10^{-5} lb/cu ft

Total ventilation = 2700 cu ft/min

H2S Emissions = 2700 cu ft/min x 60 min/hr x 0.303 grains/cu ft

x 0.1 x 1/7000 lb/grain

= 0.70 lb/hr

x 8760 hrs/yr x ton/2000 lbs

= 3.07 tpy

SO2 Emissions = 2700 cu ft/min x 60 min/hr x 0.515 grains/cu ft

x 0.1 x 1/7000 lb/grain

= 1.19 lb/hr

x 8760 hrs/yr x ton/2000 lbs

= 5.22 tpy

VOC Emissions = 2700 cu ft/min x 60 min/hr x 5.224×10^{-5} lb/cu ft

x 0.1

= 0.85 lb/hr

x 8760 hrs/yr x ton/2000 lbs

= 3.71 tpy

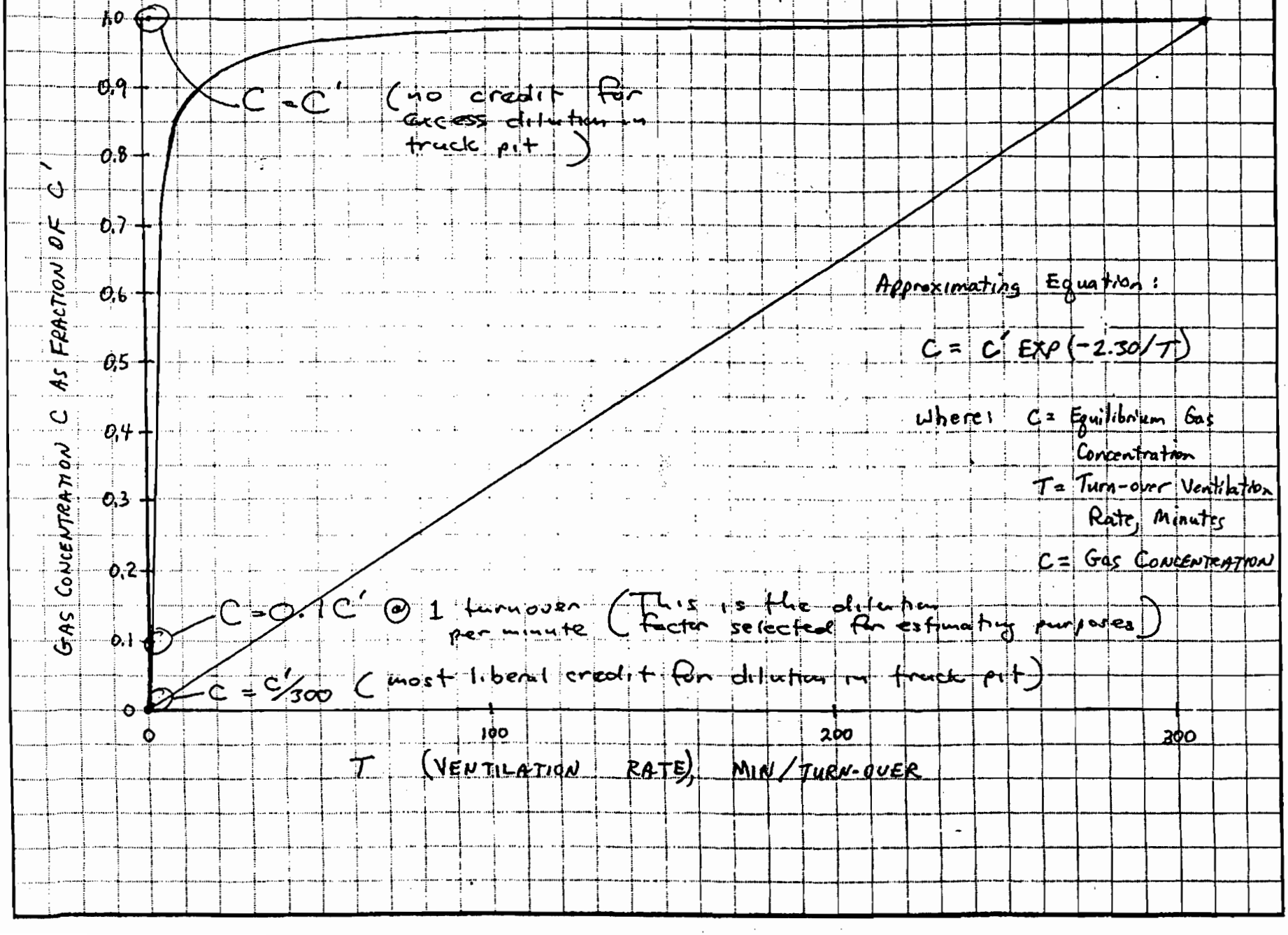
REFERENCES FOR EMISSION ESTIMATES

1. SULFUR PARTICULATE -- prepared by Dr. John B. Koogler, Koogler & Associates, Gainesville, Florida, for Agrico Chemical Company using actual measurements of a similar system and data obtained from Enviroplan, Inc.

2. HYDROGEN SULFIDE, SULFUR DIOXIDE and VOLATILE ORGANICS -- prepared by Dr. John B. Koogler for Agrico Chemical Company using data collected at Sulfur Terminals (Tampa) in November 1983 and other data collected by Enviroplan, Inc.

3. VOLATILE ORGANIC COMPOUNDS -- prepared by Dr. John B. Koogler for Agrico Chemical Company using concentration data obtained from Enviroplan, Inc.

GAS CONCENTRATION AS FUNCTION OF VENTILATION RATE DILUTION EFFECTS



Approximating Equation:

$$C = C' \exp(-2.30/T)$$

Where: C = Equilibrium Gas Concentration

T = Turn-over Ventilation Rate, Minutes

C = Gas Concentration

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

JOB _____

CALCULATED BY _____ DATE _____

SHEET NO. _____ OF _____

ATTACHMENT 3B

BASIS OF EMISSION ESTIMATES FOR RAIL RECEIVING PIT

ASSUMPTIONS

Applicable assumptions incorporated by reference from Attachment 3A.

In addition, the following assumptions are noted:

1. Rail receiving pit capacity is 100 tons.

2. The pit has two vents with a ventilation rate of 18 cu ft/min/vent plus the volume of air displaced during filling of the pit.

3. Sulfur is transferred from a 90 ton rail car at a rate of one car/hr. Sulfur is pumped to the west storage tank at a rate of 90 tph.

4. The rail pit is empty when sulfur transfer is not occurring.

5. The ventilation rate during filling is 3767 cu ft/hr. This is based on the following:

   = (2 vents x 18 cfm/vent x 60 min/hr) + volume displaced by the sulfur during filling of the pit.

   = 2160 + 1607 = 3767 cu ft/hr

6. The sulfur particulate concentration = 0.2 grains/cu ft.

7. Annual use of the pit is about 65,000 tpy/90 tph, or about 722 hrs/yr.

EMISSIONS

Sulfur Particulate

= 3767 cu ft/hr x 0.2 grains/cu ft

x 1/7000 lb/grain

= 0.11 lb/hr

x 722 hrs/yr x ton/2000 lbs

= 0.04 tpy

x 2000/8760

= 0.01 lb/hr, average

Hydrogen Sulfide, Sulfur Dioxide and Volatile Organics

Equilibrium concentrations:

H2S = 0.303 grains/cu ft
SO2 = 0.515 grains/cu ft
VOC = 5.224×10^{-5} lb/cu ft

Total Ventilation = 3767 cu ft/hr

Transfer Time = 722 hrs/yr

H2S Emissions = 3767 cu ft/hr x 0.303 grains/cu ft

x 1/7000 lb/grain

= 0.16 lb/hr

x 722 hrs/yr x ton/2000 lbs

= 0.06 tpy

x 2000/8760

= 0.01 lb/hr, average

SO2 Emissions = 3767 cu ft/hr x 0.515 grains/cu ft

x 1/7000 lb/grain

= 0.28 lb/hr

x 722 hrs/yr x ton/2000 lbs

= 0.10 tpy

x 2000/8760

= 0.02 lb/hr, average

VOC Emissions = 3767 cu ft/hr x 5.224×10^{-5} lb/cu ft

= 0.20 lb/hr

x 722 hrs/yr x ton/2000 lbs

= 0.07 tpy

x 2000/8760

= 0.02 lb/hr, average

REFERENCES

1. SULFUR PARTICULATE -- prepared by Dr. John B. Koogler, Koogler & Associates, Gainesville, Florida, for Agrico Chemical Company using actual measurements of a similar system and data obtained from Enviroplan, Inc.

2. HYDROGEN SULFIDE, SULFUR DIOXIDE and VOLATILE ORGANICS -- prepared by Dr. John B. Koogler for Agrico Chemical Company using data collected at Sulfur Terminals (Tampa) in November 1983 and other data collected by Enviroplan, Inc.

3. VOLATILE ORGANIC COMPOUNDS -- prepared by Dr. John B. Koogler for Agrico Chemical Company using concentration data obtained from Enviroplan, Inc.

ATTACHMENT 3C

BASIS OF EMISSION ESTIMATE FOR STORAGE TANKS

ASSUMPTIONS

Applicable assumptions incorporated by reference from Attachment 3A.

In addition, the following assumptions are noted:

1. All sulfur delivered by rail and 20% delivered by truck is transferred to storage tanks. This is about:

   = 65,000 + (0.2 x 585,000) = 182,000 tpy

2. The transfer rate from truck pit to storage tanks is 425 gpm, or about 190 tph.

   = 425 gpm x 60 min/hr x 1/7.5 gal/cu ft x 112 lb sulfur/cu ft

   x 1/2000 ton/lb

   = 190 tph

3. Sulfur throughput is divided evenly between the two tanks.

4. Ventilation rates are:

   a. 65,000 tpy from rail cars is transferred at a rate of 90 tph, which displaces 27 cu ft/min.

   b. 117,000 tpy from truck pit is transferred at a rate of 190 tph, which displaces about 57 cu ft/min.

   c. Wind induced ventilation from each 5 vent tank is about 90 cu ft/min (5 vents x 18 cfm/vent).

EMISSIONS

Sulfur Particulate

A. During filling from truck pit, based on 57 + 90 = 147 cu ft/min total ventilation rate and a sulfur particle concentration of 0.2 grains/cu ft:

Transfer time = 117,000 tons/190 tph = 616 hrs/yr

Time per tank = 616/2 = 308 hrs/yr

Emissions = 147 cu ft/min x 60 min/hr

x 0.2 grains/cu ft x 1/7000 lb/grain

= 0.25 lb/hr

x 308 hrs/yr x ton/2000 lbs

= 0.04 tpy

B. During filling from rail pit, based on 27 + 90 = 117 cu ft total ventilation rate and a sulfur particle concentration of 0.2 grains/cu ft:

Transfer time = 65,000 tons/90 tph = 722 hrs/yr

Time per tank = 722/2 = 361 hrs/yr

Emissions = 117 cu ft/min x 60 min/hr

x 0.2 grains/cu ft x 1/7000 lb/grain

= 0.20 lb/hr

x 361 hrs/yr x ton/2000 lbs

= 0.04 tpy

C. During withdrawal or when idle, based on a 90 cu ft total ventilation rate and a sulfur particle concentration of 0.2 grains/cu ft:

Time = 8760 hrs/yr - (308 + 361) = 8091 hrs/yr

Emissions = 90 cu ft/min x 60 min/hr

x 0.2 grains/cu ft x 1/7000 lb/grain

= 0.15 lb/hr

x 8091 hrs/yr x ton/2000 lbs

= 0.62 tpy

Total Tank Emissions:

= 0.04 + 0.04 + 0.62 = 0.70 tpy, for each tank

x 2000/8760

= 0.16 lb/hr, average, for each tank

Hydrogen Sulfide, Sulfur Dioxide and Volatile Organics

Equilibrium concentrations:

H2S = 0.303 grains/cu ft
SO2 = 0.515 grains/cu ft
VOC = 5.224 x 10^{-5} lb/cu ft

A. Emissions from tank during filling from truck pit:

Total ventilation = 147 cu ft/min

Transfer Time = 308 hrs/yr (per tank)

H2S Emissions = 147 cu ft/min x 60 min/hr

x 0.303 grains/cu ft x 1/7000 lb/grain

= 0.38 lb/hr

x 308 hrs/yr x ton/2000 lbs

= 0.06 tpy

On the same basis, using equilibrium concentrations shown above, the emissions of SO2 and VOCs may be calculated.

SO2 Emissions = 147 cu ft/min x 60 min/hr

x 0.515 grains/cu ft x 1/7000 lb/grain

= 0.65 lb/hr

x 308 hrs/yr x ton/2000 lbs

= 0.10 tpy

VOC Emissions = 147 cu ft/min x 60 min/hr

x 5.224 X 10^{-5} lb/cu ft

= 0.46 lb/hr

x 308 hrs/yr x ton/2000 lbs

= 0.07 tpy

B. Emissions from tank during filling from rail pit:

Total ventilation = 117 cu ft/min

Transfer Time = 361 hrs/yr (per tank)

H2S Emissions = 117 cu ft/min x 60 min/hr

x 0.303 grains/cu ft x 1/7000 lb/grain

= 0.30 lb/hr

x 361 hrs/yr x ton/2000 lbs

= 0.05 tpy

On the same basis, using equilibrium concentrations shown above, the emissions of SO2 and VOCs may be calculated.

SO2 Emissions = 117 cu ft/min x 60 min/hr

x 0.515 grains/cu ft x 1/7000 lb/grain

= 0.52 lb/hr

x 361 hrs/yr x ton/2000 lbs

= 0.09 tpy

VOC Emissions = 117 cu ft/min x 60 min/hr

x 5.224×10^{-5} lb/cu ft

= 0.37 lb/hr

x 361 hrs/yr x ton/2000 lbs

= 0.07 tpy

C. Emissions from tank when idle or sulfur is withdrawn:

Total ventilation = 90 cu ft/min

Ventilation Time = 8091 hrs/yr (per tank)

H2S Emissions = 90 cu ft/min x 60 min/hr

x 0.303 grains/cu ft x 1/7000 lb/grain

= 0.23 lb/hr

x 8091 hrs/yr x ton/2000 lbs

= 0.95 tpy

On the same basis, using equilibrium concentrations shown above, the emissions of SO2 and VOCs may be calculated.

SO2 Emissions = 90 cu ft/min x 60 min/hr

x 0.515 grains/cu ft x 1/7000 lb/grain

= 0.40 lb/hr

x 8091 hrs/yr x ton/2000 lbs

= 1.6 tpy

VOC Emissions = 90 cu ft/min x 60 min/hr

x 5.224×10^{-5} lb/cu ft

= 0.28 lb/hr

x 8091 hrs/yr x ton/2000 lbs

= 1.14 tpy

D. H2S, SO2 and VOC Emissions for each tank:

H2S = 0.06 + 0.05 + 0.95 = 1.06 tpy

x 2000/8760

= 0.24 lb/hr, average

SO2 = 0.10 + 0.09 + 1.6 = 1.79 tpy

x 2000/8760

= 0.41 lb/hr, average

VOC = 0.07 + 0.07 + 1.14 = 1.28 tpy

x 2000/8760

= 0.29 lb/hr, average

MOLTEN SULFUR STORAGE AND HANDLING SYSTEM

EMISSION ESTIMATES SUMMARY

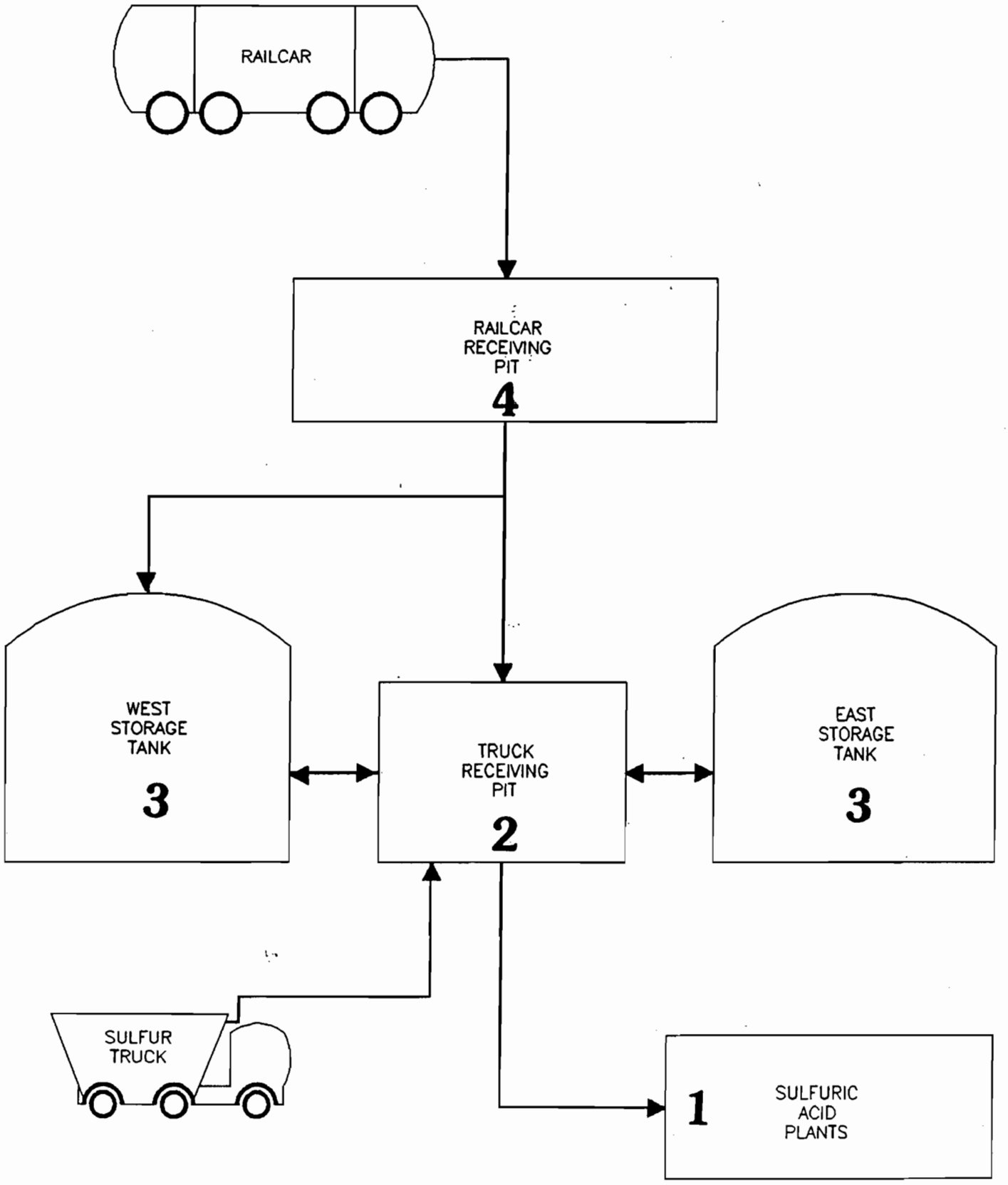
SOURCE		PM/PM10	SP	SO_2	TRS/H_2S	VOC
East Tank	lb/hr (max)	0.50	0.25	0.65	0.38	0.46
	lb/hr (avg)	0.32	0.16	0.41	0.24	0.29
(No. 1)	TPY	1.40	0.70	1.79	1.06	1.28
West Tank	lb/hr (max)	0.50	0.25	0.65	0.38	0.46
	lb/hr (avg)	0.32	0.16	0.41	0.24	0.29
(No. 2)	TPY	1.40	0.70	1.79	1.06	1.28
Truck Pit	lb/hr (max)	0.92	0.46	1.19	0.70	0.85
	TPY	4.06	2.03	5.22	3.07	3.71
Rail Pit	lb/hr (max)	0.22	0.11	0.28	0.16	0.20
	lb/hr (avg)	0.02	0.01	0.02	0.01	0.02
	TPY	0.08	0.04	0.10	0.06	0.07

NOTE: PM/PM10 emissions are assumed to be approximately double the SP (sulfur particulate) emissions as per the original air construction permit, AC53-167779.

NET EMISSIONS INCREASE

TONS PER YEAR	PM/PM10	SP	SO_2	TRS/H_2S	VOC
Permitted	5.8	2.9	7.1	4.2	5.2
Proposed	6.9	3.5	8.9	5.3	6.3
Net Change	1.1	0.6	1.8	1.1	1.1

MOLTEN SULFUR STORAGE AND HANDLING FACILITY



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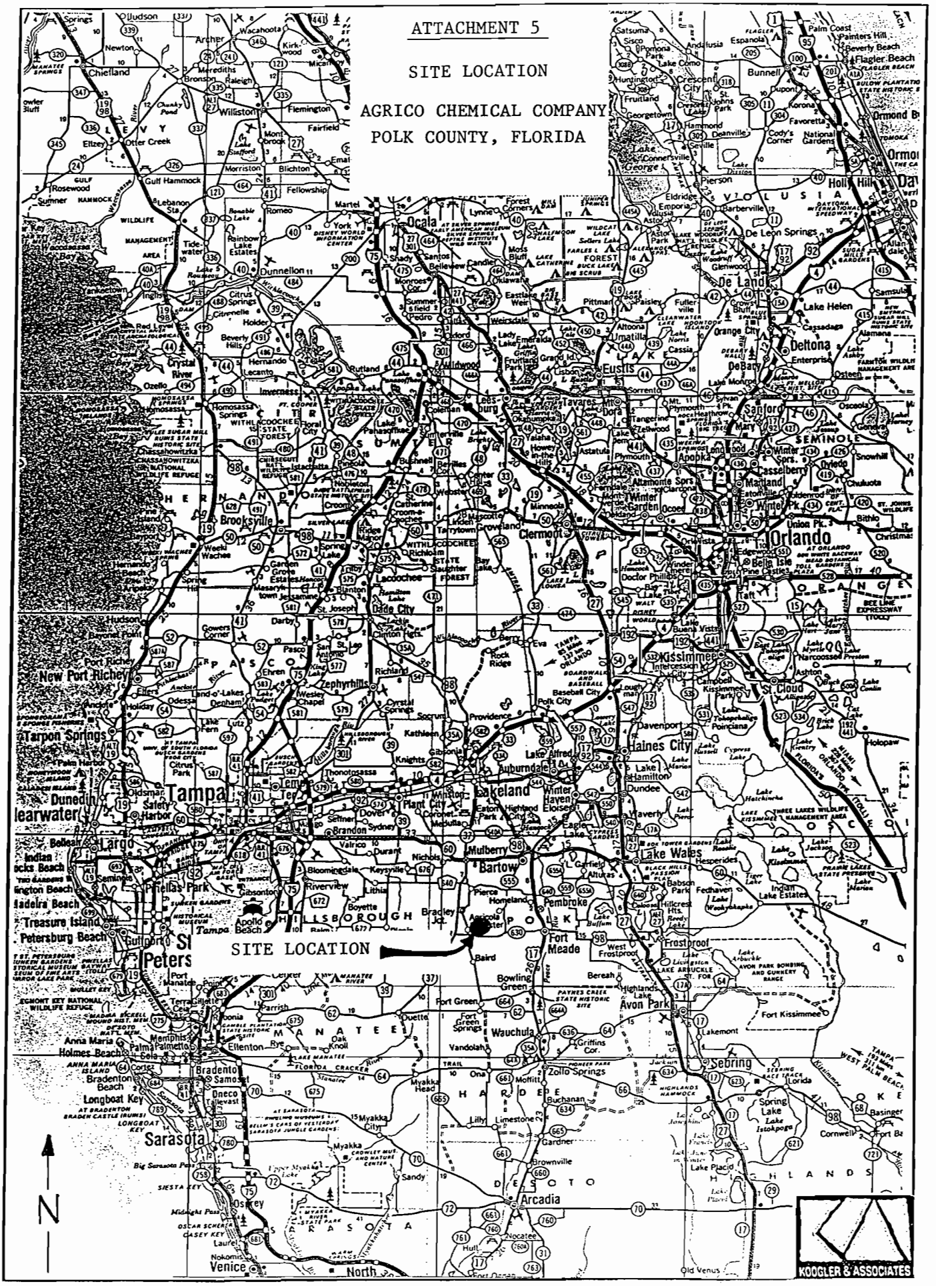
ATTACHMENT 5

SITE LOCATION

AGRICO CHEMICAL COMPANY

POLK COUNTY, FLORIDA



ATTACHMENT 6

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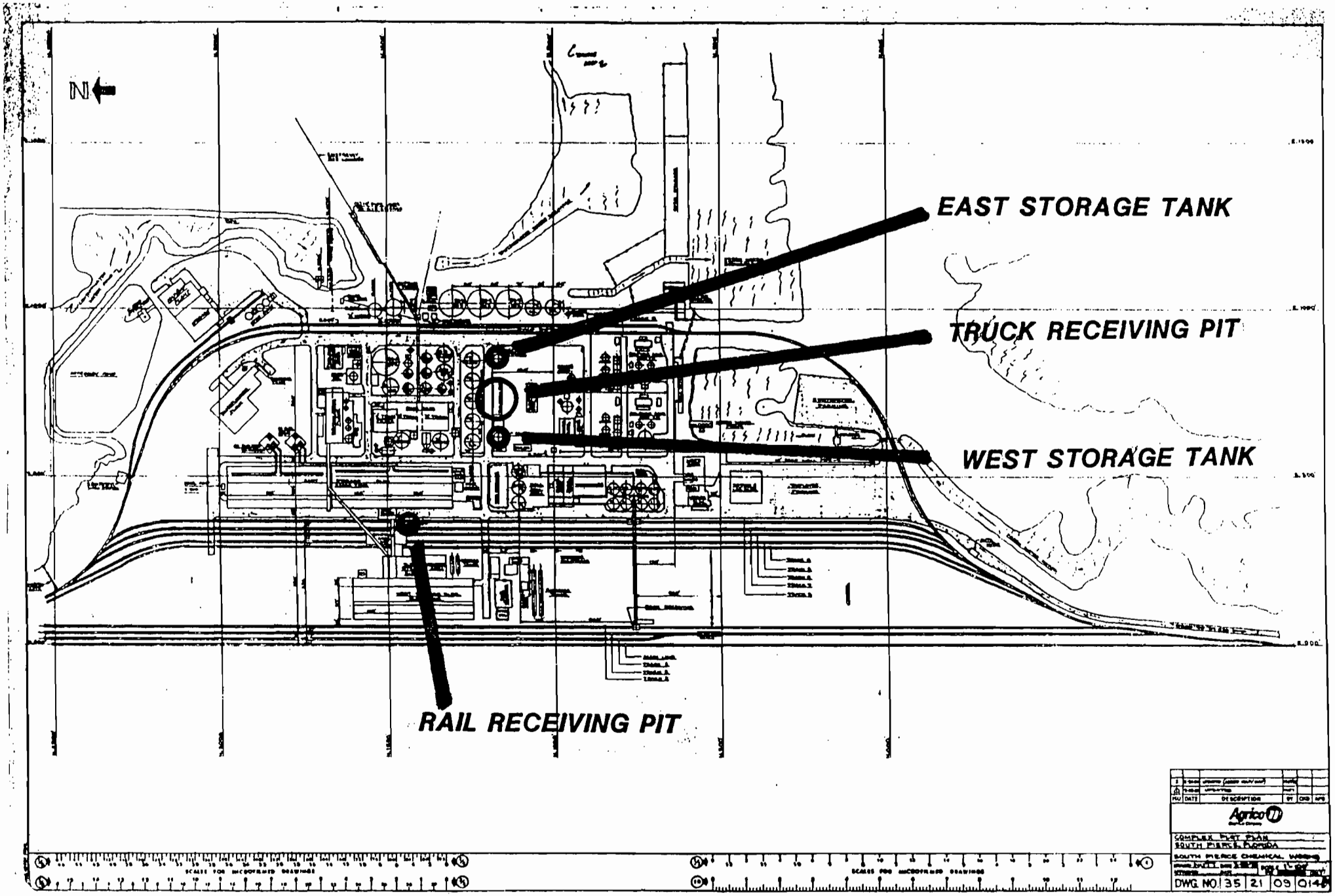

ATTACHMENT 7

PHYSICAL DESCRIPTION

The molten sulfur storage and handling facility at South Pierce consists of the following:

1. Two 1050-ton storage tanks measuring 32 feet in diameter and 24 feet in height. Each tank has five vents with no forced ventilation - one in the center and four at the periphery at 90 degree angles. Material throughput is approximately 182,000 tons per year.

2. One 670-ton truck receiving pit measuring 83 feet in length and 24 feet in width. The pit has four vents, two of which have vent fans providing ventilation at a rate of 1350 cfm. Material throughput is approximately 585,000 tons per years.

3. One 100-ton railcar receiving pit measuring 45 feet in length and seven feet in width. The pit has two vents with no forced ventilation. Material throughput is approximately 65,000 tons per year.

OPERATION PROCEDURES

Operation procedures for minimizing spills/fugitive emissions consist of the applicable work practice standards established by Chapter 17-2.600(11)(a) 1-9, FAC.