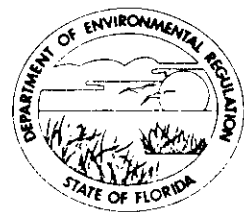


STATE OF FLORIDA
DEPARTMENT OF ENVIRONMENTAL REGULATION

TWIN TOWERS OFFICE BUILDING
2600 BLAIR STONE ROAD
TALLAHASSEE, FLORIDA 32301-8241



BOB GRAHAM
GOVERNOR
VICTORIA J. TSCHINKEL
SECRETARY

June 6, 1985

CERTIFIED MAIL-RETURN RECEIPT REQUESTED


Mr. George Townsend, Environmental Supervisor
AMAX Chemical Corporation
P.O. Drawer 790
Plant City, Florida 33566

Dear Mr. Townsend:

Attached is one copy of the revised pages for the Technical Evaluation and Preliminary Determination, and proposed permit to construct a phosphoric acid defluorination plant at your Plant city, Hillsborough County, phosphate chemical complex. Please substitute these pages for the original ones that were in the Technical Evaluation and Preliminary Determination that was mailed to you on April 26, 1985.

Before final action can be taken on your draft permit, you are required by Florida Administrative Code Rule 17-103.150 to publish the attached Notice of Proposed Agency Action in the legal advertising section of a newspaper of general circulation in Hillsborough County no later than fourteen days after receipt of this letter. The department must be provided with proof of publication within seven days of the date the notice is published. Failure to publish the notice may be grounds for denial of the permit.

Please submit, in writing, any comments which you wish to have considered concerning the department's proposed action to Mr. Bill Thomas of the Bureau of Air Quality Management.

Sincerely,

C. H. Fancy, P.E.
Deputy Chief
Bureau of Air Quality
Management

CHF/rw
Attachments
cc: Steve Gyrog ✓
Bill Thomas ✓
Reading File ✓
Willard Harker ✓

No. 0155572

RECEIPT FOR CERTIFIED MAIL

NO INSURANCE COVERAGE PROVIDED—
NOT FOR INTERNATIONAL MAIL

(See Reverse)

SENT TO		George Townsend	
STREET AND NO.		P.O. Box 790	
P.O., STATE AND ZIP CODE		Plant City, FL 34289	
POSTAGE		\$	
CONSULT POSTMASTER FOR FEES	OPTIONAL SERVICES	CERTIFIED FEE	¢
		SPECIAL DELIVERY	¢
		RESTRICTED DELIVERY	¢
	RETURN RECEIPT SERVICE	SHOW TO WHOM AND DATE DELIVERED	¢
		SHOW TO WHOM, DATE, AND ADDRESS OF DELIVERY	¢
		SHOW TO WHOM AND DATE DELIVERED WITH RESTRICTED DELIVERY	¢
	SHOW TO WHOM, DATE AND ADDRESS OF DELIVERY WITH RESTRICTED DELIVERY	¢	
TOTAL POSTAGE AND FEES		\$	
POSTMARK OR DATE			

PS Form 3800, Apr. 1976

PS Form 3811, July 1983

SENDER: Complete items 1, 2, 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 service(s) requested.

- Show to whom, date and address of delivery.
- Restricted Delivery.

3. Article Addressed to:

Mr. George Townsend
AMAX Chemical Company
P.O. Box 790
Plant City, FL 34289

4. Type of Service:

- Registered Insured
 Certified COD
 Express Mail

Article Number

0155572

Always obtain signature of addressee or agent and
DATE DELIVERED.

5. Signature - Addressee

X

6. Signature - Agent

[Handwritten Signature]

7. Date of Delivery

6/14/85

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

361 W. Reynolds St.
Plant City, FL 34289

DOMESTIC RETURN RECEIPT



BEFORE THE STATE OF FLORIDA
DEPARTMENT OF ENVIRONMENTAL REGULATION

In the Matter of an)
Application for Permit by:)
)
AMAX Chemical Corporation)
Post Office Box 790) DER File No. AC 29-091316
Plant City, Florida 33566)
)
)

INTENT TO ISSUE

The Department of Environmental Regulation hereby gives notice of its Intent to Issue and proposed order of issuance for a permit pursuant to Chapter 403, Florida Statutes, for the proposed project as detailed in the application specified above. The Department is issuing this Intent to Issue for the reasons stated in the attached Technical Evaluation and Preliminary Determination.

The applicant, AMAX Chemical Corporation, applied on January 11, 1985, to the Department of Environmental Regulation for a permit to construct a phosphoric acid defluorination plant at their phosphate chemical complex located on Coronet Road in Plant City, Hillsborough County, Florida.

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

This intent to issue shall be placed before the Secretary for final action unless an appropriate petition for a hearing pursuant to the provisions of Section 120.57, Florida Statutes, is filed within fourteen (14) days from receipt of this letter or

publication of the public notice (copy attached) required pursuant to Rule 17-103.150, Florida Administrative Code, whichever occurs first. The petition must comply with the requirements of Section 17-103.155 and Rule 28-5.201, Florida Administrative Code (copy attached) and be filed pursuant to Rule 17-103.155(1) in the Office of General Counsel of the Department of Environmental Regulation at 2600 Blair Stone Road, Tallahassee, Florida 32301.

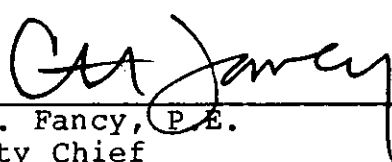
Petitions which are not filed in accordance with the above provisions are subject to dismissal by the Department. In the event a formal hearing is conducted pursuant to Section 120.57(1), all parties shall have an opportunity to respond, to present evidence and argument on all issues involved, to conduct cross-examination of witnesses and submit rebuttal evidence, to submit proposed findings of facts and orders, to file exceptions to any order or hearing officer's recommended order, and to be represented by counsel. If an informal hearing is requested, the agency, in accordance with its rules of procedure, will provide affected persons or parties or their counsel an opportunity, at a convenient time and place, to present to the agency or hearing officer, written or oral evidence in opposition to the agency's action or refusal to act, or a written statement challenging the grounds upon which the agency has chosen to justify its action or inaction, pursuant to Section 120.57(2), Florida Statutes.

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 proposed agency action. Therefore, persons who may not wish to file a petition, may wish to intervene in the proceeding. A petition for intervention must be filed pursuant to Model Rule 28-5.207 at least five (5) days before the final hearing and be filed with the hearing officer if one has been assigned at the Division of

Administrative Hearings, 2009 Apalachee Parkway, Tallahassee, Florida 32301. If no hearing officer has been assigned, the petition is to be filed with the Department's Office of General Counsel, 2600 Blair Stone Road, Tallahassee, Florida 32301. Failure to petition to intervene within the allowed time frame constitutes a waiver of any right such person has to request a hearing under Section 120.57, Florida Statutes.

Executed the 6 day of June, 1985, in Tallahassee, Florida.

STATE OF FLORIDA DEPARTMENT
OF ENVIRONMENTAL REGULATION


C. H. Fancy, P.E.
Deputy Chief
Bureau of Air Quality
Management

Copies furnished to:

Mr. Steve Gyrog
Hillsborough County Environmental
Protection Commission
1900 9th Avenue
Tampa, Florida 33605

Mr. Bill Thomas
Department of Environmental Regulation
Southwest District
7601 Highway 301 North
Tampa, Florida 33610

Mr. George Townsend
Environmental Supervisor
AMAX Chemical Corporation
P.O. Drawer 790
Plant City, Florida 33566

State of Florida
Department of Environmental Regulation
Notice of Proposed Agency Action
on Permit Application

The Department of Environmental Regulation gives notice of its intent to issue a permit to AMAX Chemical Corporation to construct a phosphoric acid defluorination plant at their phosphate chemical complex located on Coronet Road in Plant City, Hillsborough County, Florida. A determination of best available control technology (BACT) was required.

Persons 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 conform to the requirements of Chapters 17-103 and 28-5, Florida Administrative Code, and must be filed (received) in the Office of General Counsel of the Department at 2600 Blair Stone Road, Twin Towers Office Building, Tallahassee, Florida 32301, within fourteen (14) days of publication of this notice. Failure to file a request for hearing 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.

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 preliminary statement. Therefore, persons who may not object to the proposed agency action may wish to intervene in the proceeding. A petition for intervention must be filed pursuant to Model Rule 28-5.207 at least five (5) days before the final hearing and be filed with the hearing officer if one has been assigned at the Division of Administrative Hearings, Department of Administration, 2009, Apalachee Parkway, Tallahassee, Florida 32301. If no hearing officer has been assigned, the petition is to be filed with the Department's Office of General Counsel, 2600 Blair Stone Road, Tallahassee, Florida 32301. Failure to petition to intervene within the allowed time frame constitutes a waiver of any right such person has to request a hearing under Section 120.57, Florida Statutes.

I. Project Description

A. Applicant

AMAX Chemical Corporation
P.O. Box 790
Plant City, Florida 34289

B. Project and Location

The company submitted an application for a permit to construct a phosphoric acid defluorination plant (SIC 2048) to the department on January 11, 1985. The information furnished in a letter dated March 7, 1985, (received March 11, 1985) provided enough data for the department to process the application.

The defluorination plant consists of two 12,000 gallon reactor tanks, one diatomaceous earth slurry mixer tank, a 3,000 ACFM Rigidome upflow, counter current scrubber, and associated process equipment. It will be located at the applicant's existing phosphate chemical plant on Coronet Road in Plant City, Hillsborough County, Florida. The UTM coordinates of this site are 17, 393.8 Km East and 3096.3 Km North.

C. Process and Emissions

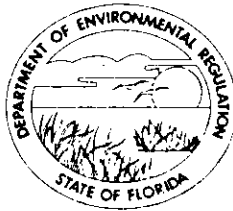
A diatomaceous earth slurry and caustic solution are added to each 12,000 gallon tank of heated phosphoric acid (50% P₂O₅) and the mixture is sparged with air and steam. Some of the fluoride compounds in the mixture are precipitated and settle in the tank during the 4 hour batch operation. The precipitate is then pumped to another process. Some of the fluoride compounds are stripped from the phosphoric acid and carried off with the air used to sparge the mixture to the upflow counter current scrubber. Approximately 1,000 ACFM will be drawn from each reaction tank and the slurry mixer tank for a total of 3,000 ACFM. The scrubber handles 3,000 ACFM and uses well water to remove the pollutants.

Company test data shows that the air coming from the reaction tanks and going to the scrubber will contain 1.825 grains of fluoride per cubic foot. A gas flow of 2,000 ACFM (1,000 ACFM for each reaction tank) will contain 31.3 lb F/hr.

The department has reviewed this process and concluded that the best available control technology (BACT) determination should be 0.02 lb F/ton P₂O₅ avg. which is equivalent to 0.44 lb F/hr being discharged from the scrubber to the atmosphere. The scrubber will have to be 94.6 percent efficient to meet this standard. The company has stated that the Model 4837 Rigidome scrubber they propose to use is over 99 percent efficient in removing fluorides.

STATE OF FLORIDA
DEPARTMENT OF ENVIRONMENTAL REGULATION

TWIN TOWERS OFFICE BUILDING
2600 BLAIR STONE ROAD
TALLAHASSEE, FLORIDA 32301-8241



BOB GRAHAM
GOVERNOR

VICTORIA J. TSCHINKEL
SECRETARY

PERMITTEE:
AMAX Chemical Corporation
P.O. Box 790
Plant City, Florida 34289

Permit Number: AC29-091316
Expiration Date: December 31, 1985
County: Hillsborough
Latitude/Longitude: 27° 59' 21" N/
82° 04' 48" W
Project: Phosphoric Acid
Defluorination Plant

This permit is issued under the provisions of Chapter 403, Florida Statutes, and Florida Administrative Code Rule(s) 17-2 and 27-4. The above named permittee is hereby authorized to perform the work or operate the facility shown on the application and approved drawing(s), plans, and other documents attached hereto or on file with the department and made a part hereof and specifically described as follows:

For the construction of a 172 TPD P₂O₅ batch phosphoric acid defluorination plant consisting of one Kennite slurry mixer, two 12 foot diameter (12,000 gallon) acid reaction tanks, and a 3,000 ACFM Model 4837 Rigidome upflow, counter-current scrubber equipped with a Beco pad demister that uses well water to reduce particulate matter and fluoride emissions.

The UTM coordinates of the site are Zone 17, 393.8 Km East and 3096.3 Km North.

Construction shall be in accordance with the application for permit to construct a Phosphoric Acid Defluorinating Plant with Upflow, Counter-Current Scrubber that was signed by Mr. J.J. Lewis on December 27, 1984, and the additional information submitted by the applicant in the letters dated December 18, 1984, and March 7, 1985, except for the changes listed as specific conditions in this permit.

Attachments are as follows:

1. Application.
2. DER's letter, dated 9/7/84.
3. Applicant's letter, dated 12/18/84.
4. DER's letter, dated 1/28/85.
5. Applicant's letter, dated 3/7/85.
6. Applicant's letter, dated 4/5/85.

PERMITTEE:
AMAX Chemical Corporation

Permit Number: AC29-091316
Expiration Date: December 31, 1985

GENERAL CONDITIONS:

1. The terms, conditions, requirements, limitations, and restrictions set forth herein are "Permit Conditions" and as such are binding upon the permittee and enforceable pursuant to the authority of Sections 403.161, 403.727, or 403.859 through 403.861, Florida Statutes. The permittee is hereby placed on notice that the department will review this permit periodically and may initiate enforcement action for any violation of the "Permit Conditions" by the permittee, its agents, employees, servants or representatives.
2. This permit is valid only for the specific processes and operations applied for and indicated in the approved drawings or exhibits. Any unauthorized deviation from the approved drawings, exhibits, specifications, or conditions of this permit may constitute grounds for revocation and enforcement action by the department.
3. As provided in Subsections 403.087(6) and 403.722(5), Florida Statutes, the issuance of this permit does not convey any vested rights or any exclusive privileges. Nor does it authorize any injury to public or private property or any invasion of personal rights, nor any infringement of federal, state or local laws or regulations. This permit does not constitute a waiver of or approval of any other department permit that may be required for other aspects of the total project which are not addressed in the permit.
4. This permit conveys no title to land or water, does not constitute state recognition or acknowledgement of title, and does not constitute authority for the use of submerged lands unless herein provided and the necessary title or leasehold interests have been obtained from the state. Only the Trustees of the Internal Improvement Trust Fund may express state opinion as to title.
5. This permit does not relieve the permittee from liability for harm or injury to human health or welfare, animal, plant or aquatic life or property and penalties therefore caused by the construction or operation of this permitted source, nor does it allow the permittee to cause pollution in contravention of Florida Statutes and department rules, unless specifically authorized by an order from the department.

PERMITTEE:
AMAX Chemical Corporation

Permit Number: AC29-091316
Expiration Date: December 31, 1985

GENERAL CONDITIONS:

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

7. The permittee, by accepting this permit, specifically agrees to allow authorized department personnel, upon presentation of credentials or other documents as may be required by law, access to the premises, at reasonable times, where the permitted activity is located or conducted for the purpose of:

- a. Having access to and copying any records that must be kept under the conditions of the permit;
- b. Inspecting the facility, equipment, practices, or operations regulated or required under this permit; and
- c. Sampling or monitoring any substances or parameters at any location reasonably necessary to assure compliance with this permit or department rules.

Reasonable time may depend on the nature of the concern being investigated.

8. If, for any reason, the permittee does not comply with or will be unable to comply with any condition or limitation specified in this permit, the permittee shall immediately notify and provide the department with the following information:

- a. a description of and cause of non-compliance; and
- b. the period of noncompliance, including exact dates and times; or, if not corrected, the anticipated time the noncompliance is expected to continue, and steps being taken to reduce, eliminate, and prevent recurrence of the noncompliance.

PERMITTEE:
AMAX Chemical Corporation

Permit Number: AC29-091316
Expiration Date: December 31, 1985

GENERAL CONDITIONS:

The permittee shall be responsible for any and all damages which may result and may be subject to enforcement action by the department for penalties or revocation of this permit.

9. In accepting this permit, the permittee understands and agrees that all records, notes, monitoring data and other information relating to the construction or operation of this permitted source, which are submitted to the department, may be used by the department as evidence in any enforcement case arising under the Florida Statutes or department rules, except where such use is proscribed by Sections 403.73 and 403.111, Florida Statutes.

10. The permittee agrees to comply with changes in department rules and Florida Statutes after a reasonable time for compliance, provided however, the permittee does not waive any other rights granted by Florida Statutes or department rules.

11. This permit is transferable only upon department approval in accordance with Florida Administrative Code Rules 17-4.12 and 17-30.30, as applicable. The permittee shall be liable for any non-compliance of the permitted activity until the transfer is approved by the department.

12. This permit is required to be kept at the work site of the permitted activity during the entire period of construction or operation.

13. This permit also constitutes:

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

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

- a. Upon request, the permittee shall furnish all records and plans required under department rules. The retention period for all records will be extended automatically, unless otherwise stipulated by the department, during the course of any unresolved enforcement action.

PERMITTEE:
AMAX Chemical Corporation

Permit Number: AC29-091316
Expiration Date: December 31, 1985

GENERAL CONDITIONS:

- b. The permittee shall retain at the facility or other location designated by this permit records of all monitoring information (including all calibration and maintenance records and all original strip chart recordings for continuous monitoring instrumentation), copies of all reports required by this permit, and records of all data used to complete the application for this permit. The time period of retention shall be at least three years from the date of the sample, measurement, report or application unless otherwise specified by department rule.
- c. Records of monitoring information shall include:
- the date, exact place, and time of sampling or measurements;
 - the person responsible for performing the sampling or measurements;
 - the date(s) analyses were performed;
 - the person responsible for performing the analyses;
 - the analytical techniques or methods used; and
 - the results of such analyses.

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 submitted or corrected promptly.

SPECIFIC CONDITIONS:

1. Not more than 48,000 gallons of phosphoric acid will be treated in one day without prior approval of the Southwest District.
2. Production shall be limited to 8 hr/day, 5 day/wk, and 52 wk/yr, unless prior approval is obtained from the Southwest District.

PERMITTEE:
AMAX Chemical Corporation

Permit Number: AC29-091316
Expiration Date: December 31, 1985

SPECIFIC CONDITIONS:

3. Total fluoride emissions shall not exceed 0.44 lb/hr and the quantity determined by the following formula:

$$\text{Allowable fluoride emissions (lb/hr)} = \frac{0.02 \text{ (Actual tons of P}_2\text{O}_5 \text{ per batch)}}{\text{(time in hours per batch)}}$$

Compliance tests will be conducted during the first three hours of a batch (24,000 gallons) by Method 13B (Appendix A of 40 CFR 60) as described in the BACT determination.

4. Scrubber parameters (gas pressure drop, scrubber water pressure, and flow) shall be monitored during the compliance tests and a summary of the parameters shall be included in the test report.

5. Particulate matter emissions shall not exceed 0.015 grains per DSCF as determined by Method 5 (Appendix A of 40 CFR 60). After the initial compliance tests, the Southwest District may waive periodic compliance tests for particulate matter if the visible emissions from the scrubber, as determined by Method 9 which is described in Appendix A of 40 CFR 60, are less than 5 percent opacity.

6. The applicant shall submit a complete application for a permit to operate the phosphoric acid defluorination plant, which will include an emissions test report, to the Hillsborough County Environmental Protection Commission at least 90 days prior to the expiration date of this construction permit. The company may continue to operate this plant if the emissions are in compliance with the permit conditions.

7. Upon obtaining a permit to operate, the company will be required to submit annual operation reports to the Hillsborough County Environmental Protection Commission.

Issued this _____ day of _____,
19____.

STATE OF FLORIDA DEPARTMENT
OF ENVIRONMENTAL REGULATION

VICTORIA J. TSCHINKEL, Secretary

_____ pages attached.

Best Available Control Technology (BACT) Determination
AMAX Chemical Corporation
Hillsborough County

The applicant plans to construct a phosphoric acid defluorination plant at their facility located near Plant City, Florida. The process involves reacting phosphoric acid with a diatomaceous earth slurry and a caustic solution followed by sparging with compressed air and steam. The mechanics of the reaction produce fluoride compounds as a wasted gaseous overhead effluent and a precipitated by-product. The defluorination plant will have two primary reactors, each with an approximate processing time of four hours. The defluorination plant is scheduled to operate on an eight hour day, five day per week basis.

Fluoride compounds emitted to the atmosphere from the proposed defluorination plant are regulated air pollutants, Table 500-2, Rule 17-2.500. The maximum amount of fluoride compounds allowed to discharge to the atmosphere is to be determined by a BACT review as set forth in the Florida Administrative Code Rule 17-2.600(3)(a)9. - Emission Limiting and Performance Standards.

BACT Requested by the Applicant:

Fluoride emissions will not exceed 0.04 lb/ton of P₂O₅ input.

Date of Receipt of a BACT Application:

December 13, 1984

Date of Publication in the Florida Administrative Weekly:

February 1, 1985

Review Group Members:

The determination was based upon comments received from the Stationary Source Control Section, the Southwest District Office, and the Hillsborough County Environmental Protection Commission.

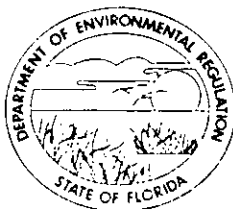
BACT Determined by DER:

Fluorides (water soluble or gaseous atomic weight 19) shall not exceed 0.02 pounds per ton of P₂O₅ input averaged over the first 3 hours of one normal defluorination plant operation.

Compliance with the fluoride standard will be determined using test Method 13B as specified in 40 CFR Part 60, Appendix A. One normal defluorination plant operation is defined to mean that period beginning when the first reaction vessel sparging cycle is

STATE OF FLORIDA
DEPARTMENT OF ENVIRONMENTAL REGULATION

TWIN TOWERS OFFICE BUILDING
2600 BLAIR STONE ROAD
TALLAHASSEE, FLORIDA 32301-8241



BOB GRAHAM
GOVERNOR
VICTORIA J. TSCHINKEL
SECRETARY

April 22, 1985

CERTIFIED MAIL-RETURN RECEIPT REQUESTED

Mr. J.J. Lewis
Plant Manager
Ward Industries, Inc.
P.O. Drawer 790
Plant City, Florida 33566

Dear Mr. Lewis:

Attached is one copy of the Technical Evaluation and Preliminary Determination, and proposed permit to construct a phosphoric acid defluorination plant at your Plant city, Hillsborough County, phosphate chemical complex.

Before final action can be taken on your draft permit, you are required by Florida Administrative Code Rule 17-103.150 to publish the attached Notice of Proposed Agency Action in the legal advertising section of a newspaper of general circulation in Hillsborough County no later than fourteen days after receipt of this letter. The department must be provided with proof of publication within seven days of the date the notice is published. Failure to publish the notice may be grounds for denial of the permit.

Please submit, in writing, any comments which you wish to have considered concerning the department's proposed action to Mr. Bill Thomas of the Bureau of Air Quality Management.

Sincerely,

Willard Hanks
for C. H. Fancy, P.E.
Deputy Chief
Bureau of Air Quality
Management

CHF/rw
Attachments
cc: Steve Gyorog
George Townsend
Bill Thomas

No. 0155552

RECEIPT FOR CERTIFIED MAIL

NO INSURANCE COVERAGE PROVIDED—
NOT FOR INTERNATIONAL MAIL

(See Reverse)

SENT TO		Mr. J. J. Lewis	
STREET AND NO.			
P.O., STATE AND ZIP CODE			
POSTAGE		\$	
CONSULT POSTMASTER FOR FEES	CERTIFIED FEE	¢	
	SPECIAL DELIVERY	¢	
	RESTRICTED DELIVERY	¢	
	RETURN RECEIPT SERVICE	SHOW TO WHOM AND DATE DELIVERED	¢
		SHOW TO WHOM, DATE, AND ADDRESS OF DELIVERY	¢
		SHOW TO WHOM AND DATE DELIVERED WITH RESTRICTED DELIVERY	¢
	SHOW TO WHOM, DATE AND ADDRESS OF DELIVERY WITH RESTRICTED DELIVERY	¢	
TOTAL POSTAGE AND FEES		\$	
POSTMARK OR DATE		4/26/85	

PS Form 3800, Apr. 1976

Receipt made 1, 2, 3 and 4.

In the PREPAID space on the envelope to do the payment this card from you. The receipt fee will provide the person to end the date of additional services are (a) requested.

Address of delivery.

Delivered to:
J. J. Lewis
Industries, Inc.
Drawer 790
City, FL 33566

Services	Article Number
<input type="checkbox"/> Insured <input checked="" type="checkbox"/> Certified Mail	015555
Signature of addressee or agent and ADDRESS DELIVERED	
Address	
Agent	
Address (ONLY if requested and fee paid)	

APR 29 1985

DOMESTIC RETURN RECEIPT

BEFORE THE STATE OF FLORIDA
DEPARTMENT OF ENVIRONMENTAL REGULATION

In the Matter of an)
Application for Permit by:)
)
Ward Industries, Inc.)
Post Office Box 790) DER File No. AC 29-091316
Plant City, Florida 33566)
)
)

INTENT TO ISSUE

The Department of Environmental Regulation hereby gives notice of its Intent to Issue and proposed order of issuance for a permit pursuant to Chapter 403, Florida Statutes, for the proposed project as detailed in the application specified above. The Department is issuing this Intent to Issue for the reasons stated in the attached Technical Evaluation and Preliminary Determination.

The applicant, Ward Industries, Inc. (formerly AMAX Chemical Corporation) applied on January 11, 1985, to the Department of Environmental Regulation for a permit to construct a phosphoric acid defluorination plant at their phosphate chemical complex located on Coronet Road in Plant City, Hillsborough County, Florida.

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

This intent to issue shall be placed before the Secretary for final action unless an appropriate petition for a hearing pursuant to the provisions of Section 120.57, Florida Statutes, is filed within fourteen (14) days from receipt of this letter or

publication of the public notice (copy attached) required pursuant to Rule 17-103.150, Florida Administrative Code, whichever occurs first. The petition must comply with the requirements of Section 17-103.155 and Rule 28-5.201, Florida Administrative Code (copy attached) and be filed pursuant to Rule 17-103.155(1) in the Office of General Counsel of the Department of Environmental Regulation at 2600 Blair Stone Road, Tallahassee, Florida 32301.

Petitions which are not filed in accordance with the above provisions are subject to dismissal by the Department. In the event a formal hearing is conducted pursuant to Section 120.57(1), all parties shall have an opportunity to respond, to present evidence and argument on all issues involved, to conduct cross-examination of witnesses and submit rebuttal evidence, to submit proposed findings of facts and orders, to file exceptions to any order or hearing officer's recommended order, and to be represented by counsel. If an informal hearing is requested, the agency, in accordance with its rules of procedure, will provide affected persons or parties or their counsel an opportunity, at a convenient time and place, to present to the agency or hearing officer, written or oral evidence in opposition to the agency's action or refusal to act, or a written statement challenging the grounds upon which the agency has chosen to justify its action or inaction, pursuant to Section 120.57(2), Florida Statutes.

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 proposed agency action. Therefore, persons who may not wish to file a petition, may wish to intervene in the proceeding. A petition for intervention must be filed pursuant to Model Rule 28-5.207 at least five (5) days before the final hearing and be filed with the hearing officer if one has been assigned at the Division of

Administrative Hearings, 2009 Apalachee Parkway, Tallahassee, Florida 32301. If no hearing officer has been assigned, the petition is to be filed with the Department's Office of General Counsel, 2600 Blair Stone Road, Tallahassee, Florida 32301. Failure to petition to intervene within the allowed time frame constitutes a waiver of any right such person has to request a hearing under Section 120.57, Florida Statutes.

Executed the 26 day of April, 1985, in Tallahassee, Florida.

STATE OF FLORIDA DEPARTMENT
OF ENVIRONMENTAL REGULATION

for William M. Hanks
C. H. Fancy, P.E.
Deputy Chief
Bureau of Air Quality
Management

Copies furnished to:

Mr. J. J. Lewis
Plant Manager
Ward Industries, Inc.
P. O. Drawer 790
Plant City, Florida 33566

Mr. Steve Gyorog
Hillsborough County Environmental
Protection Commission
1900 9th Avenue
Tampa, Florida 33605

Mr. Bill Thomas
Department of Environmental Regulation
Southwest District
7601 Highway 301 North
Tampa, Florida 33610

Mr. George Townsend
Environmental Supervisor
Ward Industries, Inc.
P.O. Drawer 790
Plant City, Florida 33566

CERTIFICATION

This is to certify that the foregoing Intent to Issue and all copies were mailed before the close of business on April 16, 1985.

Willard M. Hanks
for C. H. Fancy, P.E.
Deputy Chief
Bureau of Air Quality
Management
2600 Blair Stone Road
Tallahassee, Florida 32301

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

Patricia G. Adams 4/20/85
Clerk Date

Technical Evaluation
and
Preliminary Determination

Ward Industries, Inc.
(Formerly AMAX Chemical Corporation)
Plant City, Florida
Hillsborough County

Phosphoric Acid Defluorination Plant

Permit Number:
AC 29-091316

Florida Department of Environmental Regulation
Bureau of Air Quality Management
Central Air Permitting
April 19, 1985

State of Florida
Department of Environmental Regulation
Notice of Proposed Agency Action on Permit Application

The Department of Environmental Regulation gives notice of its intent to issue a permit to Ward Industries, Inc. (formerly AMAX Chemical Corporation) to construct a phosphoric acid defluorination plant at their phosphate chemical complex located on Coronet Road in Plant City, Hillsborough County, Florida. A determination of best available control technology (BACT) was required.

Persons 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 conform to the requirements of Chapters 17-103 and 28-5, Florida Administrative Code, and must be filed (received) in the Office of General Counsel of the Department at 2600 Blair Stone Road, Twin Towers Office Building, Tallahassee, Florida 32301, within fourteen (14) days of publication of this notice. Failure to file a request for hearing within this time period constitutes a waiver of any right such person may have to request an administrative determination (hearing) under Section 120.57, Florida Statutes.

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 proposed agency action. Therefore, persons who may not wish to file a petition may wish to intervene in the proceeding. A petition for intervention must be filed pursuant to Model Rule 28-5.207, Florida Administrative Code, at least five (5) days before the final hearing and be filed with the hearing officer if one has been assigned at the Division of Administrative Hearings, Department of Administration, 2009, Apalachee Parkway, Tallahassee, Florida 32301. If no hearing officer has been assigned, the petition is to be filed with the department's Office of General Counsel, 2600 Blair Stone Road, Tallahassee, Florida 32301. Failure to petition to intervene within the allowed time frame constitutes a waiver of any right such person has to request a hearing under Section 120.57, Florida Statutes.

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:

Dept. of Environmental Regulation
Southwest District
7601 Highway 301 North
Tampa, Florida 33610

Hillsborough County Environmental Protection Commission
1900 Ninth Avenue
Tampa, Florida 33605

Dept. of Environmental Regulation
Bureau of Air Quality Management
2600 Blair Stone Road
Tallahassee, Florida 32301

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

RULES OF THE ADMINISTRATIVE COMMISSION
MODEL RULES OF PROCEDURE
CHAPTER 28-5
DECISIONS DETERMINING SUBSTANTIAL INTERESTS

28-5.15 Requests for Formal and Informal Proceedings

- (1) Requests for proceedings shall be made by petition to the agency involved. Each petition shall be printed typewritten or otherwise duplicated in legible form on white paper of standard legal size. Unless printed, the impression shall be on one side of the paper only and lines shall be double spaced and indented.
- (2) All petitions filed under these rules should contain:
 - (a) The name and address of each agency affected and each agency's file or identification number, if known;
 - (b) The name and address of the petitioner or petitioners;
 - (c) All disputed issues of material fact. If there are none, the petition must so indicate;
 - (d) A concise statement of the ultimate facts alleged, and the rules, regulations and constitutional provisions which entitle the petitioner to relief;
 - (e) A statement summarizing any informal action taken to resolve the issues, and the results of that action;
 - (f) A demand for the relief to which the petitioner deems himself entitled; and
 - (g) Such other information which the petitioner contends is material.

I. Project Description

A. Applicant

Ward Industries, Inc.
(Formerly AMAX Chemical Corporation)
P.O. Box 790
Plant City, Florida 34289

B. Project and Location

The company submitted an application for a permit to construct a phosphoric acid defluorination plant (SIC 2048) to the department on January 11, 1985. The information furnished in a letter dated March 7, 1985, (received March 11, 1985) provided enough data for the department to process the application.

The defluorination plant consists of two 12,000 gallon reactor tanks, one diatomaceous earth slurry mixer tank, a 3,000 ACFM Rigidome upflow, counter current scrubber, and associated process equipment. It will be located at the applicant's existing phosphate chemical plant on Coronet Road in Plant City, Hillsborough County, Florida. The UTM coordinates of this site are 17, 393.8 Km East and 3096.3 Km North.

C. Process and Emissions

A diatomaceous earth slurry and caustic solution are added to each 12,000 gallon tank of heated phosphoric acid (50% P₂O₅) and the mixture is sparged with air and steam. Some of the fluoride compounds in the mixture are precipitated and settle in the tank during the 4 hour batch operation. The precipitate is then pumped to another process. Some of the fluoride compounds are stripped from the phosphoric acid and carried off with the air used to sparge the mixture to the upflow counter current scrubber. Approximately 1,000 ACFM will be drawn from each reaction tank and the slurry mixer tank for a total of 3,000 ACFM. The scrubber handles 3,000 ACFM and uses well water to remove the pollutants.

Company test data shows that the air coming from the reaction tanks and going to the scrubber will contain 1.825 grains of fluoride per cubic foot. A gas flow of 2,000 ACFM (1,000 ACFM for each reaction tank) will contain 31.3 lb F/hr.

The department has reviewed this process and concluded that the best available control technology (BACT) determination should be 0.02 lb F/ton P₂O₅ avg. which is equivalent to 0.44 lb F/hr being discharged from the scrubber to the atmosphere. The scrubber will have to be 94.6 percent efficient to meet this standard. The company has stated that the Model 4837 Rigidome scrubber they propose to use is over 99 percent efficient in removing fluorides.

More details of this analysis are given in the BACT determination that is included in the appendix.

The primary source of the particulate matter emissions is the slurring of the diatomaceous earth. Uncontrolled particulate matter emissions from the slurry mixer tank will be 3.6 lb/hr. Based on their experience with a similar scrubber, the company estimates the maximum particulate matter emissions from the Rigidome scrubber will be 0.015 grains per ACF. A flow of 3,000 ACFM from the scrubber would contain approximately 0.39 lb/hr of particulate matter. The scrubber will have to be 89+ percent efficient in removing particulate matter to meet this standard.

II. Rule Applicability

The proposed project, construction of a phosphoric acid defluorination plant, is subject to preconstruction review under the provisions of Chapter 403, FS, and Chapter 17-2, FAC.

The proposed facility will be located in an area designated: nonattainment for ozone, (17-2.410[1][f]); unclassifiable for sulfur dioxide (17-2.430[2][c]); and attainment for the other criteria air pollutants (17-2.420). It is in the area of influence (17-2.100[14]) of the Hillsborough County particulate matter nonattainment area (17-2.410[2]).

The existing plant is a major facility for particulate matter because potential emissions of this pollutant exceed 100 TPY. The proposed project is not subject to Prevention of Significant Deterioration regulations (17-2.500) or New Source Review for Nonattainment Area regulations (17-2.510) because its emissions are less than the significant rates for particulate matter and fluorides listed in Table 500-2 and will have a de minimus ambient impact on the particulate matter nonattainment area (Table 500-3).

The project is subject to review under Rule 17-2.520, FAC, Sources Not Subject to Prevention of Significant Deterioration or Nonattainment Requirements. The allowable fluoride emissions standard shall be established by a best available control technology (BACT) determination as required by Rule 17-2.600(3)(a)9, FAC. The particulate matter emissions standard shall be set at the value requested by the applicant. A higher emissions rate could subject the project to the RACT regulations.

III. Technical Evaluation

The phosphoric acid defluorination plant will be a batch operation. Approximately 4 hours are required to defluorinate each 24,000 gallon batch of acid. Particulate matter emissions

will occur when the diatomaceous earth is placed in the slurry mix. Fluoride emissions will be the highest at the start of the steam/air sparging and taper off toward the end of the batch operation. Half of the fluoride compounds removed is precipitated and settles by gravity from the phosphoric acid solution. The other half is carried off in the air where it is removed in a 99 percent efficient Model 4837 Rigidome spray chamber scrubber. The maximum fluoride emissions, based on the BACT determination, are 0.44 lb/hr. Based on the data supplied in the application, a 94.6 percent efficient scrubber can meet this standard.

The particulate matter standard proposed by the applicant is 0.015 grain/ACF. Based on their experience with similar scrubbers, the applicant believes the proposed scrubber will meet this standard. The department has accepted this standard because higher particulate matter emissions could subject the application to review under the RACT regulations.

The following table summarizes the allowable emissions from the proposed phosphoric acid defluorination plant.

Pollutant	Emission Rate	Maximum Emissions		Comment
		lb/hr	TPY	
Particulate matter	0.015 gr/ACF	0.39	0.41	Alt. Std. 5% opacity specified
Fluoride	0.02 lb/TP ₂ O ₅ in/hr	0.44	0.46	Max. emission based on avg. P ₂ O ₅ /batch

IV. Air Quality Impact

Screening modeling was used to determine the maximum ambient air quality impact of the emissions from the proposed plant. The results are summarized below.

Pollutant	Max. 1 hr. impact	Max. 24 hr. impact	Comment
Fluoride	16.5 ug/m ³	2.2 ug/m ³	2,500 ug/m ³ TWA*
Particulate matter	15.3 ug/m ³	2.0 ug/m ³	10 ug/m ³ de minimus

*Time Weighted Average threshold limit value.

Therefore, the estimated emissions from the proposed project are too low to have a significant impact on the ambient air quality.

V. Conclusion

Based on the information submitted by the applicant in their application dated August 6, 1984, and in their letters dated December 18, 1984, March 7, 1985, and April 5, 1985, the department has concluded that the phosphoric acid defluorination plant can be built and operated in compliance with all state and local air pollution control regulations. The department proposes to issue a permit to construct this plant. The General and Specific Conditions listed in the proposed permit (attached) will assure compliance of the source with the air pollution control regulations.

STATE OF FLORIDA
DEPARTMENT OF ENVIRONMENTAL REGULATION

TWIN TOWERS OFFICE BUILDING
2600 BLAIR STONE ROAD
TALLAHASSEE, FLORIDA 32301-8241



BOB GRAHAM
GOVERNOR

VICTORIA J. TSCHINKEL
SECRETARY

PERMITTEE:
Ward Industries, Inc.
P.O. Box 790
Plant City, Florida 34289

Permit Number: AC29-091316
Expiration Date: December 31, 1985
County: Hillsborough
Latitude/Longitude: 27° 59' 21" N/
82° 04' 48" W
Project: Phosphoric Acid
Defluorination Plant

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

For the construction of a 172 TPD P₂O₅ batch phosphoric acid defluorination plant consisting of one Kennite slurry mixer, two 12 foot diameter (12,000 gallon) acid reaction tanks, and a 3,000 ACFM Model 4837 Rigidome upflow, counter-current scrubber equipped with a Beco pad demister that uses well water to reduce particulate matter and fluoride emissions.

The UTM coordinates of the site are Zone 17, 393.8 Km East and 3096.3 Km North.

Construction shall be in accordance with the application for permit to construct a Phosphoric Acid Defluorinating Plant with Upflow, Counter-Current Scrubber that was signed by Mr. J.J. Lewis on December 27, 1984, and the additional information submitted by the applicant in the letters dated December 18, 1984, and March 7, 1985, except for the changes listed as specific conditions in this permit.

Attachments are as follows:

1. Application.
2. DER's letter, dated 9/7/84.
3. Applicant's letter, dated 12/18/84.
4. DER's letter, dated 1/28/85.
5. Applicant's letter, dated 3/7/85.
6. Applicant's letter, dated 4/5/85.

Project: Photographic for
Continuation of
Serial Number: A028-091318
Expiration Date: December 31, 1982
Agency: HILLBOROUGH
Latitude/Longitude: 27° 59' 21" N
82° 04' 48" W

Serial Number: A028-091318
Expiration Date: December 31, 1982
Agency: HILLBOROUGH
Latitude/Longitude: 27° 59' 21" N
82° 04' 48" W

Attachments are as follows:

PERMITTEE:
Ward Industries, Inc.

Permit Number: AC29-091316
Expiration Date: December 31, 1985

GENERAL CONDITIONS:

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

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

3. As provided in Subsections 403.087(6) and 403.722(5), Florida Statutes, the issuance of this permit does not convey any vested rights or any exclusive privileges. Nor does it authorize any injury to public or private property or any invasion of personal rights, nor any infringement of federal, state or local laws or regulations. This permit does not constitute a waiver of or approval of any other department permit that may be required for other aspects of the total project which are not addressed in the permit.

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

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

PERMITTEE:
Ward Industries, Inc.

Permit Number: AC29-091316
Expiration Date: December 31, 1985

GENERAL CONDITIONS:

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

7. The permittee, by accepting this permit, specifically agrees to allow authorized department personnel, upon presentation of credentials or other documents as may be required by law, access to the premises, at reasonable times, where the permitted activity is located or conducted for the purpose of:

- a. Having access to and copying any records that must be kept under the conditions of the permit;
- b. Inspecting the facility, equipment, practices, or operations regulated or required under this permit; and
- c. Sampling or monitoring any substances or parameters at any location reasonably necessary to assure compliance with this permit or department rules.

Reasonable time may depend on the nature of the concern being investigated.

8. If, for any reason, the permittee does not comply with or will be unable to comply with any condition or limitation specified in this permit, the permittee shall immediately notify and provide the department with the following information:

- a. a description of and cause of non-compliance; and
- b. the period of noncompliance, including exact dates and times; or, if not corrected, the anticipated time the noncompliance is expected to continue, and steps being taken to reduce, eliminate, and prevent recurrence of the noncompliance.

PERMITTEE:
Ward Industries, Inc.

Permit Number: AC29-091316
Expiration Date: December 31, 1985

GENERAL CONDITIONS:

The permittee shall be responsible for any and all damages which may result and may be subject to enforcement action by the department for penalties or revocation of this permit.

9. In accepting this permit, the permittee understands and agrees that all records, notes, monitoring data and other information relating to the construction or operation of this permitted source, which are submitted to the department, may be used by the department as evidence in any enforcement case arising under the Florida Statutes or department rules, except where such use is proscribed by Sections 403.73 and 403.111, Florida Statutes.

10. The permittee agrees to comply with changes in department rules and Florida Statutes after a reasonable time for compliance, provided however, the permittee does not waive any other rights granted by Florida Statutes or department rules.

11. This permit is transferable only upon department approval in accordance with Florida Administrative Code Rules 17-4.12 and 17-30.30, as applicable. The permittee shall be liable for any non-compliance of the permitted activity until the transfer is approved by the department.

12. This permit is required to be kept at the work site of the permitted activity during the entire period of construction or operation.

13. This permit also constitutes:

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

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

- a. Upon request, the permittee shall furnish all records and plans required under department rules. The retention period for all records will be extended automatically, unless otherwise stipulated by the department, during the course of any unresolved enforcement action.

PERMITTEE:
Ward Industries, Inc.

Permit Number: AC29-091316
Expiration Date: December 31, 1985

GENERAL CONDITIONS:

- b. The permittee shall retain at the facility or other location designated by this permit records of all monitoring information (including all calibration and maintenance records and all original strip chart recordings for continuous monitoring instrumentation), copies of all reports required by this permit, and records of all data used to complete the application for this permit. The time period of retention shall be at least three years from the date of the sample, measurement, report or application unless otherwise specified by department rule.
- c. Records of monitoring information shall include:
 - the date, exact place, and time of sampling or measurements;
 - the person responsible for performing the sampling or measurements;
 - the date(s) analyses were performed;
 - the person responsible for performing the analyses;
 - the analytical techniques or methods used; and
 - the results of such analyses.

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 submitted or corrected promptly.

SPECIFIC CONDITIONS:

1. Not more than 48,000 gallons of phosphoric acid will be treated in one day without prior approval of the Southwest District.
2. Production shall be limited to 8 hr/day, 5 day/wk, and 52 wk/yr, unless prior approval is obtained from the Southwest District.

PERMITTEE:
Ward Industries, Inc.

Permit Number: AC29-091316
Expiration Date: December 31, 1985

SPECIFIC CONDITIONS:

3. Total fluoride emissions shall not exceed 0.44 lb/hr and the quantity determined by the following formula:

$$\text{Allowable fluoride emissions (lb/hr)} = \frac{0.02 (\text{Actual tons of } P_2O_5 \text{ per batch})}{(\text{time in hours per batch})}$$

Compliance tests will be conducted during the first three hours of a batch (24,000 gallons) by Method 13B (Appendix A of 40 CFR 60) as described in the BACT determination.

4. Scrubber parameters (gas pressure drop, scrubber water pressure, and flow) shall be monitored during the compliance tests and a summary of the parameters shall be included in the test report.

5. Particulate matter emissions shall not exceed 0.015 grains per DSCF as determined by Method 5 (Appendix A of 40 CFR 60). After the initial compliance tests, the Southwest District may waive periodic compliance tests for particulate matter if the visible emissions from the scrubber, as determined by Method 9 which is described in Appendix A of 40 CFR 60, are less than 5 percent opacity.

6. The applicant shall submit a complete application for a permit to operate the phosphoric acid defluorination plant, which will include an emissions test report, to the Hillsborough County Environmental Protection Commission at least 90 days prior to the expiration date of this construction permit. The company may continue to operate this plant if the emissions are in compliance with the permit conditions.

7. Upon obtaining a permit to operate, the company will be required to submit annual operation reports to the Hillsborough County Environmental Protection Commission.

Issued this _____ day of _____,
19____.

**STATE OF FLORIDA DEPARTMENT
OF ENVIRONMENTAL REGULATION**

VICTORIA J. TSCHINKEL, Secretary

_____ pages attached.

Best Available Control Technology (BACT) Determination
Ward Industries, Inc.
(Formerly AMAX Chemical Corporation)
Hillsborough County

The applicant plans to construct a phosphoric acid defluorination plant at their facility located near Plant City, Florida. The process involves reacting phosphoric acid with a diatomaceous earth slurry and a caustic solution followed by sparging with compressed air and steam. The mechanics of the reaction produce fluoride compounds as a wasted gaseous overhead effluent and a precipitated by-product. The defluorination plant will have two primary reactors, each with an approximate processing time of four hours. The defluorination plant is scheduled to operate on an eight hour day, five day per week basis.

Fluoride compounds emitted to the atmosphere from the proposed defluorination plant are regulated air pollutants, Table 500-2, Rule 17-2.500. The maximum amount of fluoride compounds allowed to discharge to the atmosphere is to be determined by a BACT review as set forth in the Florida Administrative Code Rule 17-2.600(3)(a)9. - Emission Limiting and Performance Standards.

BACT Requested by the Applicant:

Fluoride emissions will not exceed 0.04 lb/ton of P₂O₅ input.

Date of Receipt of a BACT Application:

December 13, 1984

Date of Publication in the Florida Administrative Weekly:

February 1, 1985

Review Group Members:

The determination was based upon comments received from the Stationary Source Control Section, the Southwest District Office, and the Hillsborough County Environmental Protection Commission.

BACT Determined by DER:

Fluorides (water soluble or gaseous atomic weight 19) shall not exceed 0.02 pounds per ton of P₂O₅ input averaged over the first 3 hours of one normal defluorination plant operation.

Compliance with the fluoride standard will be determined using test Method 13B as specified in 40 CFR Part 60, Appendix A. One normal defluorination plant operation is defined to mean that period beginning when the first reaction vessel sparging cycle is

started followed immediately by the preparation and addition of the diatomaceous earth slurry to the second reaction vessel and subsequent sparging. The maximum time delay between the start of the two sparging cycles shall not exceed 1.5 hours.

BACT Determination Rationale:

The proposed defluorination plant will consist of two primary reaction vessels and one diatomaceous earth slurry tank. The typical reaction vessel charge is 12,000 gallons of phosphoric acid or 43 tons of P₂O₅. A specific quantity of diatomaceous earth slurry is prepared and added to one of the reaction vessels containing the phosphoric acid. The charged vessel is then sparged with air and steam until the defluorination process is complete. A second batch of diatomaceous earth slurry is quickly prepared and added to the second reaction vessel and the sparging process activated. There is approximately a 1-2 hour interval when only one vessel is in the sparging mode. The completion of two charges is defined as a batch.

The rate of fluoride emissions will peak shortly after start of the second reaction vessel sparging cycle. Compliance testing must be done when both reaction vessels are in different processing stages of defluorination. The performance test must be the average of three runs, the first run to start when the first reaction vessel sparge cycle begins. The second run must include the preparation and addition of the diatomaceous earth slurry to the second reaction vessel and the sparge cycle activated. The third run is to start when the sparging cycle of the second reaction vessel is activated. Each test run must be completed during that respective portion of the batch, as described, to be valid. Each sample run may be on a separate batch of acid.

The applicant's data indicates that the maximum hourly fluoride loading in the defluorination plant gaseous effluent will be 0.37 pounds per ton of P₂O₅ charged. The fluoride emission limit judged to be BACT is 0.02 pounds per ton of P₂O₅ charged. An emission control system that will remove 94.6 percent of the fluorides from the gaseous effluent will be required.

$$\frac{0.37 - 0.02}{0.37} = 0.946 \times 100 = 94.6\%$$

The proposed fluoride emission control device, according to the applicant's data, will remove 99 percent of the fluoride vapors produced by the defluorination process. The fluoride emission limit determined as BACT is judged to be reasonable and will allow for variations in the P₂O₅ content of the phosphoric acid feed stock.

Details of the Analysis May be Obtained by Contacting:

Edward Palagyi, BACT Coordinator
Department of Environmental Regulation
Bureau of Air Quality Management
2600 Blair Stone Road
Tallahassee, Florida 32301

Recommended by:

C. H. Fancy, Deputy Bureau Chief

Date:_____

Approved by:

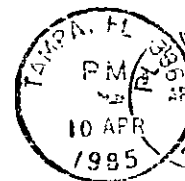
Victoria J. Tschinkel, Secretary

Date:_____

AMAX Chemical Corporation

A SUBSIDIARY OF AMAX INC

P. O. BOX 790 ♦ PLANT CITY, FLORIDA 34289



Mr. C. H. Fancy, P.E.
Bureau of Air Quality Management
Department of Environmental Regulation
Twin Towers Office Building
2600 Blair Stone Road
Tallahassee, FL 32301-8241