Department of
Environmental Protection

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

Lawton Chiles
Governor

Virginia B. Wetherell
Secretary

December 21, 1995

CERTIFIED MAIL RETURN RECEIPT REQUESTED

Mr. Charles Jenkins
Environmental Coordinator
Farmland Hydro, L.P.
Post Office Box 906
Bartow, Florida 33830

Dear Mr. Jenkins:

Re: North MAP/DAP Plant
AC53-210886/PSD-FL-186
Request to Amend permit

The Department hereby amends the above referenced permit as follows:

Specific Condition No. 15:

From:

The maximum heat input rate to the dryer shall not exceed 50 MMBtu/hour. Natural gas (max. 0.05 MMCF/hr) shall be burned in the dryer; except when the natural gas supply to the plant is curtailed, then No. 2 fuel oil with a maximum of 0.5% sulfur may be burned for up to 400 hours during any 12 month period.

To:

The maximum heat input rate to the dryer shall not exceed 50 MMBtu/hour. Natural gas (max. 0.05 MMCF/hr) shall be burned in the dryer; except when the natural gas supply to the plant is curtailed, then No. 2 fuel oil may be burned for up to 400 hours during any 12 month period.

A copy of this amendment letter shall be attached to and shall become a part of Air Construction Permit AC53-210886/PSD-FL-186.

Sincerely,

for Howard L. Rhodes, Director
Division of Air Resources
Management

CERTIFICATE OF SERVICE

The undersigned duly designated deputy clerk hereby certifies that this **PERMIT AMENDMENT** and all copies were mailed by certified mail before the close of business on 12-21-95 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.

Kyra Jobes 12-21-95
Clerk Date

Copies to be furnished to:

Jerry Kissel, SWD
Jewell Harper, EPA
Roy Harwood, Polk Co.

1050053-003-AC

Z 127 633 226

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

UNITED STATES POSTAL SERVICE

Sent to Charles Jenkins	
Street and No. Fairland Hydro	
P.O., State and ZIP Code Bartow, Fl	
Postage	$
Certified Fee	
Special Delivery Fee	
Restricted Delivery Fee	
Return Receipt Showing to Whom & Date Delivered	
Return Receipt Showing to Whom, Date and Addressee's Address	
TOTAL Postage & Fees	$
Postmark or Date 12-21-95 AC53-210886 PSD-FI-186	

PS Form 3800, March 1993

Is your RETURN ADDRESS completed on the reverse side?

SEN
- Comple... 2 for additional services.
- Complete items 3, and 4a & b.
- Print your name and address on the reverse of this form so that we ... 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 below the article number.
- The Return Receipt will show to whom the article was delivered and the date delivered.

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

3. Article Addressed to:
Charles Jenkins, E.C.
Fairland Hydro, LP
P.O. Box 906
Bartow, Fl 33830

4a. Article Number
Z 127 633 226

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

7. Date of Delivery
12/27/95

5. Signature (Addressee)
Linda Thomp...

6. Signature (Agent)

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

Thank you for using Return Receipt Service.

PS Fo... ... 19...

DOMESTIC RETURN RECEIPT

Florida Department of
Environmental Protection

Memorandum

TO: C. H. Fancy

FROM: Martin Costello MC 12/18/95

DATE: December 19, 1995

SUB: North MAP/DAP Plant
AC53-210886/PSD-FL-186
Request to Amend permit

Attached for your review and approval is a permit amendment which removes the limit on sulfur content for the dryer backup fuel.

If you have any questions, I will be glad to discuss the details.

MC/h

Farmland Hydro, L.P.

Charles W. Jenkins
Manager
Environmental/Safety Services

Green Bay Plant
County Road 640
Post Office Box 960
Bartow, Florida 33831
Tele: 813 533-1141
Fax: 813 533-8793

November 8, 1995

Mr. ~~John~~ Reynolds
Department of Environmental Protection
Bureau of Air Regulations
2600 Blairstone Road
Tallahassee, Florida 32399-2400

RE: AFFIDAVIT OF PUBLICATION

Dear Mr. Reynolds:

Please find enclosed the Affidavit of Publication of Intent to Issue. This is a Permit Amendment to the North Granular DAP/MAP Plant Permit #AO53-250142, AIRS #1050053-029.

If you have any questions, please contact me at (941) 533-1141, Ext. 334.

Sincerely,

Charles W. Jenkins
Manager,
Environmental and Safety Services

CWJ/ra/cwj179.95

Enclosures

CC: Merle Farris

Farmland (me)

AFFIDAVIT OF PUBLICATION

THE LEDGER

Lakeland, Polk County, Florida

Case No .....

STATE OF FLORIDA)
COUNTY OF POLK)

Before the undersigned authority personally appeared Nelson Kirkland, who on oath says that he is Classified Advertising Manager of The Ledger, a daily newspaper published at Lakeland in Polk County, Florida; that the attached copy of advertisement, being a

Notice of Intent

in the matter of

AC 53-210886

in the

Court, was published in said newspaper in the issues of

October 20;

1995

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

Signed .....
Nelson Kirkland
Classified Advertising Manager

by Nelson Kirkland who is personally known to me

STATE OF FLORIDA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
NOTICE OF INTENT TO ISSUE PERMIT AMENDMENT
AC53-210886/PSD-FL-186(A)

The Department of Environmental Protection (Department) gives notice of its intent to issue a permit amendment to Farmland Hydro, L.P., Post Office Box 906, Bartow, Florida, 33830. The amendment is to remove the 0.5% limit on sulfur content for the dryer backup fuel from air construction permit number AC53-210886/PSD-FL-186 Specific Condition No. 15 for the North MAP/DAP Plant located at the fertilizer complex on S.R. 64 West near Polk County. There will be no changes in SO_2 emissions as a result of this amendment since 0.5% sulfur No. 2 fuel oil will continue to be used less than 400 hours per year. The rest of the time, natural gas, an inherently less polluting fuel, will be utilized in the dryer. The change will not cause or contribute to a violation of the applicable air quality standards.

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

The Petition shall contain the following information: (a) The name, address, and the 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 warrants 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/request have the right to petition to become a party to the proceeding. The petition must conform to the requirements specified above and be filed (received) within 14 days of publication of this notice in the Office of General Counsel at the above address of the Department. Failure to petition within the allowed time frame constitutes a waiver of any right such person has to request a hearing under Section 120.57, F.S., and to participate as a party to this proceeding. Any subsequent intervention will only be at the approval of the presiding officer upon motion filed pursuant to Rule 28-5.207, Florida Administrative Code.

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

Department of Environmental Protection
Bureau of Air Regulation
111 S. Magnolia Drive, Suite 4
Tallahassee, Florida 32301

Department of Environmental Protection
Southwest District
8407 Laurel Fair Circle
Tampa, Florida 33619

Any person may send written comments on the proposed action to Administrator, New Source Review Section 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.

F405 - 10-20; 1995

Department of Environmental Protection

Lawton Chiles
Governor

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

Virginia B. Wetherell
Secretary

October 7, 1995

CERTIFIED MAIL - RETURN RECIEPT REQUESTED

Mr. Charles Jenkins
Environmental Coordinator
Farmland Hydro, L.P.
Post Office Box 906
Bartow, Florida 33830

Dear Mr. Jenkins:

Re: North MAP/DAP Plant
Amendment to AC53-210886/PSD-FL-186(A)

Attached is one copy of the Proposed Permit Amendment, Intent to Issue, Public Notice of Intent to Issue Permit Amendment and Preliminary Determination for the aboved referenced emissions unit.

Please submit any comments you may have concerning the Department's proposed action to Mr. A. A. Linero, P.E., Administrator, New Source Review Section at the above address. If you have any questions, please call Mr. Martin Costello, P.E. or Mr. Linero at (904) 488-1344.

Sincerely,

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

CHF/mc/t

cc: Jerry Kissel, SWD
Jewell Harper, EPA
Roy Harwood, Polk Co.

Z 127 632 537

Receipt for Certified Mail

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

Sent to Charles Jenkins	
Street and No. Fairland Hydro	
P.O., State and ZIP Code Bartow, F	
Postage	$
Certified Fee	
Special Delivery Fee	
Restricted Delivery Fee	
Return Receipt Showing to Whom & Date Delivered	
Return Receipt Showing to Whom, Date, and Addressee's Address	
TOTAL Postage & Fees	$
Postmark or Date N. MAP/DAP 10-11-95 AC53-210EE6/PSD-FI-186(A)	

PS Form 3800, March 1993

Is your RETURN ADDRESS completed on the reverse side?

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

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:
Charles Jenkins, EC
Fairland Hydro, LP
PO Box 906
Bartow, Fl 33830

4a. Article Number
Z 127 632 537

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

7. Date of Delivery
10/16/95

5. Signature (Addressee)
Linda Thompson

6. Signature (Agent)

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

Thank you for using Return Receipt Service.

PS Form **3811**, December 1991 ☆U.S. GPO: 1993—352-714 **DOMESTIC RETURN RECEIPT**

Preliminary Determination

On March 8, 1995 the Bureau of Air Regulation received a request to amend permit AC53-210886/PSD-FL-186 for the North MAP/DAPA Plant located at the Farmland Hydro, L.P. phosphate fertilizer chemical manufacturing facility on C.R. 640 West near Bartow, Florida. The applicant, Farmland Hydro, L.P. requested that the Department remove the 0.5% sulfur limitation from air construction permit number AC53-210886 Specific Condition No. 15 for the North MAP/DAP Plant located near Bartow Florida. The applicant stated that the sulfur content limit in the permit was not based on a regulatory standard, nor does it reflect an emission limitation requested by Farmland to avoid a specific rule applicability.

In the original application for construction permit, the permittee stated that diesel fuel/No. 2 fuel oil would be used as a backup fuel in the dryer for less than 400 hours a year. Since diesel fuel/No. 2 fuel oil is available at less than 0.5% sulfur content, the sulfur specification was included in the permit for clarification, i.e. to allow firing fuel oil with up to 0.5% sulfur content, by weight. No. 2 fuel oils can be purchased at sulfur contents--up to nominally 1% sulfur content. Because the fuel storage tank is used to fuel diesel vehicles at the plant, the applicant will continue to store 0.5% sulfur No. 2 fuel oil in this tank. Therefore sulfur dioxide emissions will not increase as a result of removing the limit on sulfur content from the No. 2 fuel oil. The Department intends to delete the limit of 0.5% sulfur content for the backup fuel oil, pending publications of the Intent to Issue Permit Amendment.

STATE OF FLORIDA
DEPARTMENT OF ENVIRONMENTAL PROTECTION

CERTIFIED MAIL

In the Matter of an
Application for Permit Amendment

DEP File Nos. AC53-210886
PSD-FL-186(A)
Polk County

Mr. Charles Jenkins
Environmental Coordinator
Farmland Hydro, L.P.
Post Office Box 906
Bartow, Florida 33830
_____/

INTENT TO ISSUE

The Department of Environmental Protection (Department) gives notice of its intent to issue a permit amendment (copy attached) for the applicant's facility as detailed in the application/request specified, above, for the reasons stated in the Preliminary Determination.

On March 8, 1995 the Bureau of Air Regulation received a request to amend permit AC53-210886/PSD-FL-186 for the North MAP/DAP Plant located at the Farmland Hydro, L.P. phosphate fertilizer chemical manufacturing facility on C.R. 640 West near Bartow, Florida. The applicant, Farmland Hydro, L.P. requested that the Department remove the 0.5% sulfur limitation from air construction permit number AC53-210886 Specific Condition No. 15 for the North MAP/DAP Plant located near Bartow Florida. The applicant stated that the sulfur content limit in the permit was not based on a regulatory standard, nor does it reflect an emission limitation requested by Farmland to avoid a specific rule applicability.

The Department has permitting jurisdiction under the provisions of Chapter 403, Florida Statutes (F.S.), and Chapters 62-212 and 62-4, Florida Administrative Code (F.A.C.). The project is not exempt from permitting procedures. The Department has determined that a permit amendment is required for the proposed work.

Pursuant to Section 403.815, F.S., and Rule 62-103.150, F.A.C., you (the applicant) are required to publish at your own expense the enclosed Notice of Intent to Issue Permit Amendment. The notice shall be published one time only within 30 days in the legal ad section of a newspaper of general circulation in the area affected. For the purpose of this rule, "publication in a newspaper of general circulation in the area affected" means publication in a newspaper meeting the requirements of Sections 50.011 and 50.031, F.S., in the county where the activity is to take place. The applicant shall

provide proof of publication to the Department's Bureau of Air Regulation, 2600 Blair Stone Road, Tallahassee, Florida 32399-2400, within seven days of publication. Failure to publish the notice and provide proof of publication within the allotted time may result in the denial of the permit amendment.

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

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

The Petition shall contain the following information;

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

If a petition is filed, the administrative hearing process is designed to formulate agency action. Accordingly, the Department's final action may be different from the position taken by it in this intent. Persons whose substantial interests will be affected by any

decision of the Department with regard to the application/ request have the right to petition to become a party to the proceeding. The petition must conform to the requirements specified above and be filed (received) within 14 days of receipt of this intent in the Office of General Counsel at the above address of the Department. Failure to petition within the allowed time frame constitutes a waiver of any right such person has to request a hearing under Section 120.57, F.S., and to participate as a party to this proceeding. Any subsequent intervention will only be at the approval of the presiding officer upon motion filed pursuant to Rule 28-5.207, F.A.C.

Executed in Tallahassee, Florida.

STATE OF FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION

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

CERTIFICATE OF SERVICE

The undersigned duly designated deputy clerk hereby certifies that this **INTENT TO ISSUE PERMIT AMENDMENT** all copies were mailed by certified mail before the close of business on 10-11-95 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 10-11-95
Date

Copies furnished to:

Jerry Kissel, SWD
Jewell Harper, EPA
Roy Harwood, Polk Co.

STATE OF FLORIDA
DEPARTMENT OF ENVIRONMENTAL PROTECTION

NOTICE OF INTENT TO ISSUE PERMIT AMENDMENT
AC53-210886/PSD-FL-186(A)

The Department of Environmental Protection (Department) gives notice of its intent to issue a permit amendment to Farmland Hydro, L.P., Post Office Box 906, Bartow, Florida, 33830. The amendment is to remove the 0.5% limit on sulfur content for the dryer backup fuel from air construction permit number AC53-210886/PSD-FL-186 Specific Condition No. 15 for the North MAP/DAP Plant located at the fertilizer complex on S.R. 64 West near Polk County. There will be no changes in SO_2 emissions as a result of this amendment since 0.5% sulfur No. 2 fuel oil will continue to be used less than 400 hours per year. The rest of the time, natural gas, an inherently less polluting fuel, will be utilized in the dryer. The change will not cause or contribute to a violation of the applicable air quality standards.

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

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

If a petition is filed, the administrative hearing process is designed to formulate agency action. Accordingly, the Department's final action may be different from the position taken by it in this

Notice. Persons whose substantial interests will be affected by any decision of the Department with regard to the application/ request have the right to petition to become a party to the proceeding. The petition must conform to the requirements specified above and be filed (received) within 14 days of publication of this notice in the Office of General Counsel at the above address of the Department. Failure to petition within the allowed time frame constitutes a waiver of any right such person has to request a hearing under Section 120.57, F.S., and to participate as a party to this proceeding. Any subsequent intervention will only be at the approval of the presiding officer upon motion filed pursuant to Rule 28-5.207, Florida Administrative Code.

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

Department of Environmental Protection
Bureau of Air Regulation
111 S. Magnolia Drive, Suite 4
Tallahassee, Florida 32301

Department of Environmental Protection
Southwest District
8407 Laurel Fair Circle
Tampa, Florida 33619

Any person may send written comments on the proposed action to Administrator, New Source Review Section 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.

DRAFT

October XX, 1995

CERTIFIED MAIL RETURN RECEIPT REQUESTED

Mr. Charles Jenkins
Environmental Coordinator
Farmland Hydro, L.P.
Post Office Box 906
Bartow, Florida 33830

Dear Mr. Jenkins:

Re: North MAP/DAP Plant
Amendment to AC53-210886/PSD-FL-186(A)

The Department hereby amends the above referenced permit as follows:

Specific Condition No. 15:

From:

The maximum heat input rate to the dryer shall not exceed 50 MMBtu/hour. Natural gas (max. 0.05 MMCF/hr) shall be burned in the dryer; except when the natural gas supply to the plant is curtailed, then No. 2 fuel oil with a maximum of 0.5% sulfur may be burned for up to 400 hours during any 12 month period.

To:

The maximum heat input rate to the dryer shall not exceed 50 MMBtu/hour. Natural gas (max. 0.05 MMCF/hr) shall be burned in the dryer; except when the natural gas supply to the plant is curtailed, then No. 2 fuel oil may be burned for up to 400 hours during any 12 month period.

DRAFT

A copy of this amendment letter shall be attached to and shall become a part of Air Construction Permit AC53-210886/PSD-FL-186.

Sincerely,

Howard L. Rhodes, Director
Division of Air Resources
Management

CERTIFICATE OF SERVICE

The undersigned duly designated deputy clerk hereby certifies that this **PERMIT AMENDMENT** and all copies were mailed by certified mail before the close of business on _____ 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 Date

Copies to be furnished to:

Jerry Kissel, SWD
Jewell Harper, EPA
Roy Harwood, Polk Co.

Florida Department of
Environmental Protection

Memorandum

TO: C. H. Fancy

THROUGH: A. A. Linero AAL 10/9

FROM: Martin Costello mc 10/6/95

DATE: October 7, 1995

SUBJ: Farmland Hydro, L.P.
North MAP/DAP Plant
Amendment to AC53-210886/PSD-FL-186(A)

Attached for your review and approval is a permit amendment which removes the limit on sulfur content for the dryer backup fuel. There will be no change in SO_2 emissions as a result of this amendment since 0.5% sulfur No. 2 fuel oil will continue to be used.

If you have any questions, Martin Costello and I will be glad to discuss the details.

AAL/mc/t

MEMORANDUM

TO: Marty Costello, FDEP

FROM: Pradeep Raval

DATE: September 26, 1995

SUBJECT: Extension of 90 Day Time Limit
Farmland Hydro, L.P.

This is a follow up to our telephone conversation today regarding waiver of the 90 day limit for Farmland Hydro, L.P.'s application for permit amendments.

As it is anticipated that the pending issues on this subject will be resolved soon, the attached waiver extension is granted until October 30, 1995.

If you have any questions, please give me a call.

par.
enc.

c: C. Jenkins, Farmland Hydro, L.P.

ATTACHMENT 1

LIST OF PERMIT AMENDMENTS SUBJECT TO
WAIVER OF THE 90 DAY TIME LIMIT

FARMLAND HYDRO, L.P.
POLK COUNTY, FLORIDA

Item	Unit/Operation	Construction Permit No.
1.	North MAP/DAP Plant	AC53-210886
2.	No. 5 SAP	AC53-185490

KOOGLER & ASSOCIATES

Florida Department of
Environmental Protection

Lawton Chiles
Governor

Northeast District
7825 Baymeadows Way, Suite B200
Jacksonville, Florida 32256-7577

Virginia B. Wetherell
Secretary

WAIVER OF 90 DAY TIME LIMIT
UNDER SECTIONS 120.60(2) and 403.0876, FLORIDA STATUTES

License (Permit, Certification) Application No. See Attachment 1

Applicant's Name: Farmland Hydro, L.P.

The undersigned has read Sections 120.60(2) and 403.0876, Florida Statutes, and fully understands the applicant's rights under that section.

With regard to the above referenced license (permit, certification) application, the applicant hereby with full knowledge and understanding of (his) (her) (its) rights under Sections 120.60(2) and 403.0876, Florida Statutes, waives the right under Sections 120.60(2) and 403.0876, Florida Statutes, to have the application approved or denied by the State of Florida Department of Environmental Regulation within the 90 day time period prescribed in Sections 120.60(2) and 403.0876, Florida Statutes. Said waiver is made freely and voluntarily by the applicant, is in (his) (her) (its) self-interest, and without any pressure or coercion by anyone employed by the State of Florida Department of Environmental Regulation.

This waiver shall expire on the 30th day of October 19 95.

The undersigned is authorized to make this waiver on behalf of the applicant.

SIGNATURE

NAME (PLEASE TYPE OR PRINT)

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

MEMORANDUM

TO: Martin Costello, FDEP

FROM: Pradeep Raval

DATE: August 24, 1995

SUBJECT: Additional Information Regarding
Permit Amendment Request
Farmland Hydro, L.P.

This is a follow up to our conversation yesterday regarding the request for an amendment of the North MAP/DAP Plant permit number AC53-210886.

In response to your question on what units share the fuel supply from the fuel storage tank servicing the DAP dryer, a list is provided below.

Please note that this particular storage tank is the only diesel fueling tank on site. Consequently, the tank supplies fuel to mobile equipment such as diesel operated vehicles; trucks; track mobiles/shuttles; front end loaders; air compressors; welding machines; etc.

It is anticipated that this information completes your review of the above mentioned permit amendment.

If you have any questions, please give me a call.

par

c: Charles Jenkins, Farmland Hydro, L.P.

MEMORANDUM

TO: Marty Costello, FDEP

FROM: Pradeep Raval

DATE: August 24, 1995

SUBJECT: Extension of 90 Day Time Limit
Farmland Hydro, L.P.

This is a follow up to our conversation yesterday regarding waiver of the 90 day limit for Farmland Hydro, L.P.'s application for permit amendments.

As it is anticipated that the pending issues on this subject will be resolved soon, a waiver extension is granted until September 30, 1995.

If you have any questions, please give me a call.

par.
enc.

c: C. Jenkins, Farmland Hydro, L.P.

ATTACHMENT 1

LIST OF PERMIT AMENDMENTS SUBJECT TO
WAIVER OF THE 90 DAY TIME LIMIT

FARMLAND HYDRO, L.P.
POLK COUNTY, FLORIDA

Item	Unit/Operation	Construction Permit No.
1.	North MAP/DAP Plant	AC53-210886
2.	No. 5 SAP	AC53-185490

KOOGLER & ASSOCIATES

Florida Department of
Environmental Protection

Northeast District
7825 Baymeadows Way, Suite B200
Jacksonville, Florida 32256-7577

Lawton Chiles
Governor

Virginia B. Wetherell
Secretary

WAIVER OF 90 DAY TIME LIMIT
UNDER SECTIONS 120.60(2) and 403.0876, FLORIDA STATUTES

License (Permit, Certification) Application No. See Attachment 1

Applicant's Name: Farmland Hydro, L.P.

The undersigned has read Sections 120.60(2) and 403.0876, Florida Statutes, and fully understands the applicant's rights under that section.

With regard to the above referenced license (permit, certification) application, the applicant hereby with full knowledge and understanding of (his) (her) (its) rights under Sections 120.60(2) and 403.0876, Florida Statutes, waives the right under Sections 120.60(2) and 403.0876, Florida Statutes, to have the application approved or denied by the State of Florida Department of Environmental Regulation within the 90 day time period prescribed in Sections 120.60(2) and 403.0876, Florida Statutes. Said waiver is made freely and voluntarily by the applicant, is in (his) (her) (its) self-interest, and without any pressure or coercion by anyone employed by the State of Florida Department of Environmental Regulation.

This waiver shall expire on the 30th day of September 1995.

The undersigned is authorized to make this waiver on behalf of the applicant.

SIGNATURE

NAME (PLEASE TYPE OR PRINT)

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

210886 2

MEMORANDUM

TO: Marty Costello, FDEP

FROM: Pradeep Raval

DATE: June 22, 1995

SUBJECT: Extension of 90 Day Time Limit

This is a follow up to our conversation this week regarding waiver of the 90 day limit for Farmland Hydro, L.P.'s application for permit amendments.

As it is anticipated that the pending issues on this subject will be resolved soon, the attached waiver extension is granted until August 30, 1995.

If you have any questions, please give me a call.

par.
enc.

c: C. Jenkins, Farmland Hydro, L.P.

Florida Department of
Environmental Protection

Lawton Chiles
Governor

Northeast District
7825 Baymeadows Way, Suite B200
Jacksonville, Florida 32256-7577

Virginia B. Wetherell
Secretary

WAIVER OF 90 DAY TIME LIMIT
UNDER SECTIONS 120.60(2) and 403.0876, FLORIDA STATUTES

License (Permit, Certification) Application No. See Attachment 1

Applicant's Name: Farmland Hydro, L.P.

The undersigned has read Sections 120.60(2) and 403.0876, Florida Statutes, and fully understands the applicant's rights under that section.

With regard to the above referenced license (permit, certification) application, the applicant hereby with full knowledge and understanding of (his) (her) (its) rights under Sections 120.60(2) and 403.0876, Florida Statutes, waives the right under Sections 120.60(2) and 403.0876, Florida Statutes, to have the application approved or denied by the State of Florida Department of Environmental Regulation within the 90 day time period prescribed in Sections 120.60(2) and 403.0876, Florida Statutes. Said waiver is made freely and voluntarily by the applicant, is in (his) (her) (its) self-interest, and without any pressure or coercion by anyone employed by the State of Florida Department of Environmental Regulation.

This waiver shall expire on the 30th day of August 1995.

The undersigned is authorized to make this waiver on behalf of the applicant.

SIGNATURE

NAME (PLEASE TYPE OR PRINT)

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

ATTACHMENT 1

LIST OF PERMIT AMENDMENTS SUBJECT TO
WAIVER OF THE 90 DAY TIME LIMIT

FARMLAND HYDRO, L.P.
POLK COUNTY, FLORIDA

Item	Unit/Operation	Construction Permit No.
1.	North MAP/DAP Plant	AC53-210886
2.	Green SPA Plant *	AC53-138041 *
3.	No. 5 SAP	AC53-185490

* Farmland will amend this permit if required by FDEP.

KOOGLER & ASSOCIATES

MEMORANDUM

TO: Marty Costello, FDEP

FROM: Pradeep Raval

DATE: June 2, 1995

SUBJECT: Waiver of 90 Day Time Limit

This is a follow up to our conversation this week regarding waiver of the 90 day limit for Farmland Hydro, L.P.'s application for permit amendments.

As it is anticipated that the pending issues on this subject will be resolved soon, the attached waiver is granted until June 30, 1995.

If you have any questions, please give me a call.

par.
enc.

c: C. Jenkins, Farmland Hydro, L.P.

Florida Department of
Environmental Protection

Lawton Chiles
Governor

Northeast District
7825 Baymeadows Way, Suite B200
Jacksonville, Florida 32256-7577

Virginia B. Wetherell
Secretary

WAIVER OF 90 DAY TIME LIMIT
UNDER SECTIONS 120.60(2) and 403.0876, FLORIDA STATUTES

License (Permit, Certification) Application No. See Attachment 1

Applicant's Name: Farmland Hydro, L.P.

The undersigned has read Sections 120.60(2) and 403.0876, Florida Statutes, and fully understands the applicant's rights under that section.

With regard to the above referenced license (permit, certification) application, the applicant hereby with full knowledge and understanding of (his) (her) (its) rights under Sections 120.60(2) and 403.0876, Florida Statutes, waives the right under Sections 120.60(2) and 403.0876, Florida Statutes, to have the application approved or denied by the State of Florida Department of Environmental Regulation within the 90 day time period prescribed in Sections 120.60(2) and 403.0876, Florida Statutes. Said waiver is made freely and voluntarily by the applicant, is in (his) (her) (its) self-interest, and without any pressure or coercion by anyone employed by the State of Florida Department of Environmental Regulation.

This waiver shall expire on the 30th day of June 1995.

The undersigned is authorized to make this waiver on behalf of the applicant.

SIGNATURE

NAME (PLEASE TYPE OR PRINT)

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

ATTACHMENT 1

LIST OF PERMIT AMENDMENTS SUBJECT TO
WAIVER OF THE 90 DAY TIME LIMIT

FARMLAND HYDRO, L.P.
POLK COUNTY, FLORIDA

Item	Unit/Operation	Construction Permit No.
1.	North MAP/DAP Plant	AC53-210886
2.	Green SPA Plant	AC53-138041
3.	No. 5 SAP	AC53-185490

KOOGLER & ASSOCIATES

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

KA 123-94-06

February 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
Farmland Hydro, L.P.
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 Farmland as well as the compilation of Title V permit conditions by FDEP. Thus, only valid applicable requirements will remain in the source permits.

Farmland has several air operation (and the preceding construction) permits which contain emission limitations outside of the above FDEP criteria. 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. As the source operation permits were issued by FDEP's Tampa office, a request for amendment of those permits is simultaneously being submitted to that office. The amendment request for construction permits issued by the Bureau of Air Regulation (BAR) are 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.
1.	North MAP/DAP Plant	A053-250142 (1)	AC53-210886 (2)
2.	Green SPA Plant	A053-242141 (1)	AC53-138041 (2)
3.	No. 5 SAP	A053-200485 (1)	AC53-185490 (2)
	Therminol Heater	A053-187834 (3)	None
	Auxiliary Steam Boiler	A053-159758 (3)	None

NOTES:

(1) Operation permit amendment expected from FDEP District office after the construction permit amendment is issued by BAR.
(2) Construction permit amendment expected from BAR.
(3) Operation permit amendment expected from FDEP District office.

A check in the amount of $750 (permit amendments 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. Jenkins, Farmland Hydro, L.P.
G. Kissel, FDEP Tampa

KOOGLER & ASSOCIATES

ATTACHMENT 1

Unit/Operation : North MAP/DAP Plant

Permit No. : AC53-210886

Amendment Request :

The above referenced permit contains a 0.5% sulfur content limit for No. 2 fuel oil. This sulfur content reflects a typical analysis of No. 2 fuel oil available on the market. To our knowledge, the sulfur content limit in the permit is not based on a regulatory standard, nor does it reflect an emission limitation requested by Farmland to avoid a specific rule applicability (e.g. PSD, etc.).

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

Page 8, Specific Condition No. 15:

FROM: The maximum heat input rate to the dryer shall not exceed 50 MMBtu/hour. Natural gas (max. 0.05 MMCF/hr) shall be burned in the dryer; except when the natural gas supply to the plant is curtailed, then No. 2 fuel oil with a maximum of 0.5% sulfur may be burned for upto 400 hours during any 12 month period.

TO: The maximum heat input rate to the dryer shall not exceed 50 MMBtu/hour. Natural gas (max. 0.05 MMCF/hr) shall be burned in the dryer; except when the natural gas supply to the plant is curtailed, then No. 2 fuel oil may be burned for upto 400 hours during any 12 month period.

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:
Farmland Hydro, L.P.
P. O. Box 960
Bartow, Florida 33830

Permit Number: AC 53-210886
PSD-FL-186
Expiration Date: January 1, 1994*
County: Polk
Latitude/Longitude: 27°50'37"N
81°56'05"W
Project: North GTSP/MAP/DAP
Granulation Plant Modifications

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:

Authorization to modify the existing North GTSP/MAP/DAP** Granulation Plant to increase allowable production from 70 to 120 TPH MAP and from from 50 to 100 TPH DAP. The modifications include: installing a new reactor-granulator scrubber system followed by a new BFL scrubber system; a new cooler-chiller; a new venturi-cyclonic scrubber system; a new MAP pipe reactor and granulator; new screens and recycle conveyor; new smaller fans for the screens and mills; relocation of existing screens, elevators, elevator drive, and recycle conveyor in the screen system; new controls for the dryer scrubber and the screen/mill scrubber; relocation of the pipe reactor feed tank system; relocation and modification of the DAP reactor system; relocation of the north fines bin; relocation of the reclaim water tank system; removal of the existing GTSP scrubber systems; and other associated alterations. The plant will discharge air pollutants through the existing MAP/DAP main stack (114,000 acfm/88,000 dscfm/129 ft. elevation/7.5 ft. diameter/108°F) and the new reactor-granulator stack (49,700 acfm/27,000 dscfm/129 ft. elevation/5.5 ft. diameter/178°F). The North MAP/DAP Granulation Plant is located at Farmland Hydro, L.P.'s phosphate fertilizer chemical manufacturing facility on County Road 640 West, near Bartow, Polk County, Florida. The UTM coordinates of this facility are Zone 17, 409.5 km E and 3079.5 km N.

SPECIFIC CONDITIONS:

13. This plant shall not manufacture GTSP.

14. The plant may operate continuously, 8760 hrs/yr.

15. Heat input to the dryer shall not exceed 50 MMBtu/hr. Only natural gas (max. 0.05 MMCF/hr) shall be burned in the dryer; except when the natural gas supply to the plant is curtailed, then No. 2 fuel oil with a maximum of 0.5% sulfur may be burned for up to 400 hrs during any 12 month period.

16. Lignosulphonates (lignin) shall be used when needed to control unconfined dust emissions when handling MAP and DAP product. Defoamers may be added to the 28% P_2O_5 scrubbing liquid.

17. Reasonable precautions for minimizing fugitive emissions of ammonia shall include routine inspection of vessels, piping, and hoses; placing scrubbers in operation prior to feeding ammonia to the process; and prompt repair of any leaks.

Testing Requirements

18. This plant shall be tested at a production rate of 108 to 120 TPH MAP and 90 to 100 TPH DAP within 60 days of commercial production of these products by the modified plant and annually thereafter for particulate matter, fluorides, and visible emissions. It shall also be tested for ammonia on achieving commerical production and prior to the renewal of any permit to operate issued for the modified plant (test every 5 years). The annual test during MAP and DAP production will be waived if that product is not manufactured during that year. All compliance tests shall meet the requirements listed in F.A.C. Rule 17-2.700. The unit shall not operate above the maximum permitted MAP or DAP production rates; except during the time of the compliance tests.

19. Test methods to determine compliance are EPA Method 5 for particulate matter, EPA Method 9 for visible emissions, and EPA 13A or 13B for fluorides. These methods are described in 40 CFR 60, Appendix A (July 1, 1991). Ammonia emissions shall be determined using a variation of the EPA Draft Method, using large impingers with 100 mls of 1.0 normal sulfuric acid in the first three impingers, the last impinger dry and a probe with an external design similar to that used in EPA Method 16, or any other test method agreed to by the Department.

Administrative Requirements

20. The Department's Southwest District shall be notified in

ATTACHMENT 2

Unit/Operation : Green Super Phosphoric Acid Plant

Permit No. : AC53-138041

Amendment Request :

The most recent construction permit in our files was issued November 19, 1987. The permit contains nitrogen oxides (NOx) emission limits of 40.5 pounds per hour and 90.0 tons per year. NOx emissions are a by-product of the process. To our knowledge, the emission limitation in the permit is not based on a standard for GSPA, nor does it reflect an emission limitation requested by Farmland to avoid a specific rule applicability (e.g. PSD, etc.).

It is requested that the construction permit be amended as follows:

Page 6, Specific Condition No. 2:

FROM: The emissions from the Green Superphosphoric Acid plant shall not exceed:

Pollutant	Maximum Allowable Emissions	
	pounds/hour	tons/year
NOx	40.5	90.0
Fluoride	0.2	0.4

TO: Emissions of fluorides from the Green Superphosphoric Acid plant shall not exceed 0.2 pounds per hour, or 0.4 tons/year.

Page 6, Specific Condition No. 8:

FROM: Delete the portion of the condition which requires NOx testing.

KOOGLER & ASSOCIATES

STATE OF FLORIDA

DEPARTMENT OF ENVIRONMENTAL REGULATION

TWIN TOWERS OFFICE BUILDING
2600 BLAIR STONE ROAD
TALLAHASSEE, FLORIDA 32399-2400

BOB MARTINEZ
GOVERNOR

DALE TWACHTMANN
SECRETARY

PERMITTEE:
Farmland Inc.
P. O. Box 960
Bartow, Florida 33830

Permit Number: AC 53-138041
Expiration Date: October 31, 1988
County: Polk
Latitude/Longitude: 27° 50' 37" N
81° 56' 05" W
Project: Green Super Phosphoric Acid Oxidation Unit

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 Green Superphosphoric Acid (GSPA) plant located at the permittee's phosphate fertilizer complex near Bartow on State Road 640 in Polk County, Florida. UTM coordinates are 409.5 km E and 3079.5 km N.

Construction shall be in accordance with the attached permit application except as otherwise noted under the Specific Conditions set forth in this permit.

Attachments are as follows:

1. Application to Construct Air Pollution Sources, DER form 17-1.202(1), and letter dated August 7, 1987..
2. Southwest District DER letter dated October 16, 1987.
3. Farmland letter dated October 29, 1987, with attached letter from Koogler & Associates dated October 27, 1987.

PERMITTEE:
Farmland, Inc.

Permit Number: AC 53-138041
Expiration Date: October 31, 1988

SPECIFIC CONDITIONS:

2. The emissions from the Green Superphosphoric Acid plant shall not exceed:

Pollutant	Maximum Allowable Emissions	
	lb/hr	T/yr
NOx	40.5	90.0
Fluoride	0.2	0.4

3. Other emissions from the process shall be controlled by sealing and/or venting such emissions to the pollution abatement system.

4. The permittee shall install, calibrate, maintain, operate and record data from flow monitoring devices used to determine total P_2O_5 input to the plant. A daily record on the P_2O_5 input to the plant shall be maintained.

5. The permittee shall measure and record the total pressure drop across the scrubber system. Pressure drop across the scrubber must be at least 4 inches of water during plant operation. These records shall be maintained for 2 years and available for inspection by regulatory agency personnel on request.

6. Construction should commence and be completed within a reasonable time based on the projections in the application.

7. Reasonable precautions to prevent fugitive particulate emissions during modification, such as coating or spraying roads and construction sites used by contractors, shall be taken by the permittee.

8. Before the construction permit expires, the GSPA plant shall be sampled for NOx and fluoride emissions. Test procedures shall be in accordance with EPA reference methods 1, 2, 3, 7 and 7A or 7E, 13A or 13B as published in 40 CFR 60, dated July 1, 1986. The Department shall be notified in writing 15 days or more prior to the compliance test. The test shall be conducted at permitted production capacity or no less than 90% thereof. P_2O_5 input, pH of scrubber water, and pressure drop across the scrubber shall be reported to the Department along with the test data and results.

Final Determination

Farmland Industries
Polk County

Green Super Phosphoric Acid Oxidation Unit
Permit No. AC 53-138041

Florida Department of Environmental Regulation
Central Air Permitting
Bureau of Air Quality Management

November 17, 1987

Final Determination

The Bureau of Air Quality Management completed its review of Farmland's application for a permit to construct a Green Super Phosphoric Acid Oxidation Unit at their Polk County phosphate facility. On October 17, 1987, public notice of the Department's intent to issue the permit was published in the Lakeland Ledger. Copies of the Technical Evaluation and Preliminary Determination were available for public inspection at the Department's offices in Tampa and Tallahassee.

Comments were submitted by the applicant and the Southwest District DER office. The issues and the Department's responses are as follows:

Issue No. 1: Farmland requested a modification to Specific Condition No. 5 reducing the design minimum scrubber pressure drop to 4 inches of water.

The Department is in agreement with this request and the permit will be modified accordingly. If necessary, the minimum pressure drop can be changed again after results are obtained from the compliance test.

Issue No. 2: Farmland requested changes in the test methods specified in Specific Condition No. 8.

These changes were made as requested. NOx test method 7E was not included initially because 40 CFR 60, App. A, Method 7E, paragraph 1.1 states that the method is applicable only to those sources for which it is specified in the NSPS regulations, and Method 7E was not specified for nitric acid plants. Since this source is a one-of-a-kind unit with net emissions below the significant level, the Department agrees that method 7E will be sufficient.

Issue No. 3: The DER Southwest District office requested that a Specific Condition be added to require a maximum 10% opacity limit since the emissions are similar to those from a nitric acid plant.

Farmland has confirmed from their pilot plant data that the opacity will be less than 20% but likely will be more than 10%. Since it is possible that the opacity may be closer to 10% than 20% once fine tuning is completed, the Department is in agreement that a reasonable opacity limitation can be established after the plant starts up and is lined out. Language to this effect was included as Specific Condition No. 10. Since additional time will be needed for this determination, the permit expiration date was changed to October 31, 1988.

ATTACHMENT 3

Unit/Operation : No. 5 Sulfuric Acid Plant

Permit No. : AC53-185490

Amendment Request :

The above referenced permit contains emission limitations for nitrogen oxides. To our knowledge, this limitation in the permit is not based on a standard, nor does it reflect an emission limitation requested by Farmland to avoid a specific rule applicability. In fact FDEP's PSD review in 1989 (PSD-FL-143) acknowledged that NOx is a by-product of the sulfuric acid manufacturing process and there is no method of control to represent Best Available Control Technology for it. It is interesting to note that the PSD review at that time was triggered based on conservative projections of potential emissions from the project. Subsequent testing of the project, as built, have shown that a PSD review for NOx would not have been required if representative plant performance information was available during preconstruction review.

Based on the above discussion it is requested that the construction permit be amended as follows:

Page 6, Specific Condition No. 5:

Delete this condition regarding NOx emissions.

Page 6, Specific Condition No. 8:

Delete the portion of the condition which requires NOx testing.

KOOGLER & ASSOCIATES

Florida Department of Environmental Regulation

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

Bob Martinez, Governor Dale Twachtmann, Secretary John Shearer, Assistant Secretary

PERMITTEE:
Farmland Industries, Inc.
P. O. Box 960
Bartow, FL 33830

Permit Number: AC 53-185490
PSD-FL-143A
Expiration Date: Sept. 30, 1991
County: Polk
Latitude/Longitude: 27°50'37"N
81°56'05"W
Project: Sulfuric Acid Plant No. 5 - Production Increase to 2400 TPD

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 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 increase in production from 2000 TPD to 2400 TPD of sulfuric acid in plant No. 5. The source is located at the permittee's existing facility near Bartow, Polk County, Florida. The UTM coordinates are Zone 17, 409.5 km East and 3079.5 km North.

The increase in production shall be carried out 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. Application received on August 23, 1990.

SPECIFIC CONDITIONS:

4. Sulfuric acid mist emissions shall not exceed:

0.15 lb/ton of 100% sulfuric acid produced
15.0 lbs/hr
65.7 tons/yr

5. Nitrogen oxides emissions shall not exceed:

0.12 lb/ton of 100% sulfuric acid produced
11.9 lbs/hr
52.2 tons/year

6. Visible emissions shall not exceed 10% opacity.

7. Sulfuric acid plants No. 1 and No. 2 shall permanently cease operation within 90 days after the No. 5 sulfuric acid plant begins operation.

8. A continuous emission monitor shall be used to monitor sulfur dioxide, in accordance with F.A.C. Rule 17-2.710. Initial and annual compliance tests shall be conducted using:

EPA Method 7 for nitrogen oxides
EPA Method 8 for sulfur dioxide and acid mist
DER Method 9 for visible emissions

9. The compliance tests shall be conducted within 30 days after operation begins. The Department's Southwest District office shall be notified in writing 15 days prior to source testing and at least 5 days prior to initial startup. Written reports of the tests shall be submitted to that office within 45 days of test completion.

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

11. An application for an operation permit must be submitted to the Department's Southwest District office at least 90 days prior to the expiration date of this construction permit or within 45 days after completion of compliance testing, whichever occurs first. The operation permit application shall include a set of conditions acceptable to the Department for sequential startup/ shutdown of the permittee's three sulfuric acid plants. To

Technical Evaluation
and
Preliminary Determination

Farmland Industries, Inc.
Green Bay Complex
Bartow, Polk County, Florida

Sulfuric Acid Plant No. 5
Production Increase to 2,400 TPD

Permit No. AC 53-185490
PSD-FL-143A

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

November 15, 1990

III. Rule Applicability

The construction permit application is subject to review under Chapter 403, Florida Statutes, and Florida Administrative Code (F.A.C.) Chapters 17-2 and 17-4. The facility is located in an area classified as attainment for each of the regulated air pollutants. The proposed major source is subject to the preconstruction review requirements of F.A.C. Rule 17-2.500, Prevention of Significant Deterioration (PSD). The proposed increases in SO_2 and acid mist emissions exceed significant levels set forth in Table 500-2 of F.A.C. Rule 17-2.500. Preconstruction review must include a determination of best available control technology (BACT), good-engineering practice stack height, ambient impact analysis, impact on soils, vegetation, and visibility. F.A.C. Rules 17-2.660, Table 660-1, Section 60.80, and 17-2.700, Table 700-1, apply to this new major source. Emissions will be limited by the federal new source performance standards for sulfur dioxide, acid mist and visible emissions, and the previous BACT determination for NOx (PSD-FL-143).

IV. Source Impact Analysis

A. Ambient Air Analysis

Analysis of ambient air impact from the proposed source generally involves assessment of existing air quality, a PSD increment analysis, and an ambient air quality standards analysis. Existing air quality must be established by monitoring data if the emissions from the new source will have an impact equal to or greater than that listed in F.A.C. Rule 17-2.500, Table 500-3, De Minimus Ambient Impacts. However, if it is shown, as here, that the net increase in ambient concentrations of applicable pollutants will be less than the de minimus concentrations listed in Table 500-3, the source is exempt from ambient monitoring as provided by F.A.C. Rule 17-2.500(3)(e). The following table summarizes results of air quality analysis for the proposed project:

	Ambient Impacts (ug/m^3)	Signif. Impact	De Minimus Impact
Sulfur Dioxide			
3-hr	0.01	25.0	N/A
24-hr	(less than 0.01)	5.0	13.0
Annual	(less than 0)	1.0	N/A
Acid Mist (24-hr)	5.0	N/A	5.0*

*No de minimus or significant impact levels have been established for acid mist. This figure was calculated based on adjusted threshold limit value (TLV) in order to arrive at an acceptable ambient level (AAL).

Technical Evaluation
and
Preliminary Determination

Farmland Industries, Inc.
Green Bay Complex
Bartow, Polk County, Florida

Sulfuric Acid Plant No. 5
Permit No. AC 53-171751
PSD-FL-143

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

December 21, 1989

Air Pollutant (tons/yr)	Sulfuric Acid Plants 1	2	5	GSPA	Net Increase	Signif. Increase
SO_2						
Present	700	700				
Proposed	(700)	(700)	1460		60	40
Acid Mist						
Present	7.5	7.5				
Proposed	(7.5)	(7.5)	54.8		39.8	7
NOx						
Present	25.2	25.2*		64.8		
Proposed	(25.2)	(25.2)	43.4	64.8	57.8	40

*Permanently shut down in 1985 but included for contemporaneous emission changes per F.A.C. Rule 17-2.500(2)(e)3.

III. Rule Applicability

The construction permit application is subject to review under Chapter 403, Florida Statutes, and Florida Administrative Code (F.A.C.) Chapters 17-2 and 17-4. The facility is located in an area classified as attainment for each of the regulated air pollutants. The proposed major source is subject to the preconstruction review requirements of F.A.C. Rule 17-2.500, Prevention of Significant Deterioration (PSD). The proposed increases in emissions exceed significant levels set forth in Table 500-2 of F.A.C. Rule 17-2.500. Preconstruction review must include a determination of best available control technology (BACT), good-engineering practice stack height, ambient impact analysis, impact on soils, vegetation, and visibility. F.A.C. Rules 17-2.660, Table 660-1, Section 60.80, and 17-2.700, Table 700-1, apply to this new major source. Emissions will be limited by the federal new source performance standards for sulfur dioxide, acid mist and visible emissions, and the BACT determination for NOx.

IV. Source Impact Analysis

A. Ambient Air Analysis

Analysis of ambient air impact from the proposed source generally involves assessment of existing air quality, a PSD increment analysis, and an ambient air quality standards analysis. Existing air quality must be established by monitoring data if the emissions from the new source will have an impact equal to or greater than that listed in F.A.C. Rule 17-2.500, Table 500-3, De Minimus Ambient Impacts. However, if it is shown, as here, that the net increase in ambient concentrations of applicable pollutants will be less than the de minimus concentrations listed in Table 500-3, the source is exempt from ambient monitoring as provided by F.A.C. Rule 17-2.500(3)(e). The following table summarizes results of air quality analysis for the proposed project:

0003381

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

KA 123-94-01

March 28, 1994

Mr. John C. Brown, Jr.
Florida Department of
Environmental Protection
Twin Towers Office Building
2600 Blair Stone Road
Tallahassee, FL 32399-2400

Subject: Permit Modification Request
For North MAP/DAP Plant
Farmland Hydro, L.P.
Polk County, Florida
DEP Permit No. AC53-210886, PSD-FL-186

Dear Mr. Brown:

This is a follow up to your telephone conversation with Mr. Pradeep Raval on March 22, 1994, and earlier discussions between Farmland staff and Mr. Willard Hanks regarding a modification of the ammonia emission limitation for the above referenced plant.

FDEP issued permit AC53-210886, PSD-FL-186 on July 27, 1992, for an increase in the production rate of the North MAP/DAP plant. The project involved physical modifications to the existing plant, including a new scrubbing system to control the emissions of fluorides and particulate matter.

Recent initial emission measurements indicate that the modified plant will be able to operate in full compliance with the permitted emission limits for fluoride and particulate matter. The plant also seems capable of meeting the ammonia emissions limit when producing MAP. However, ammonia emissions are much higher than anticipated when producing DAP (see Attachment 1). While the measured emissions exceed the initial estimated emission rate, they are comparable to ammonia emissions from similar DAP plants in the region (e.g. Cargill, IMC). As in the case of many similar fertilizer facilities, the existing plant's air permit did not address ammonia emissions. As a result, accurate information on potential ammonia emissions was not available at the time the permit application was submitted.

Air dispersion modeling using the ISC2 model with 1991 Tampa meteorological data, based on the higher ammonia emission rate, indicates that FDEP's air reference concentration (ARC) will not be exceeded (see Attachment 2). The FDEP ARC for ammonia is 100 micrograms per cubic meter (ug/m^3), while the maximum predicted ambient air impact is 61.7 ug/m^3. As there are no ambient air quality standards for ammonia, further analysis was not necessary.

This request is for a modification of the DAP operation's ammonia emission limitation in the above referenced permit from 41.6 pounds per hour (lbs/hr) and 182.0 tons per year (tpy) to 200 lbs/hr and 876 tpy. As discussed with you, this request is submitted to merely correct the ammonia emission estimate initially presented in the above PSD permit application. Accordingly, a check in the amount of $250 (permit modification fee) is attached.

If you have any questions, please do not hesitate to call me.

Very truly yours,

KOOGLER & ASSOCIATES

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

JBK:par
Enc.

c: G. Meier, Farmland Hydro, L.P.
C. Jenkins, Farmland Hydro, L.P.

KOOGLER & ASSOCIATES

ATTACHMENT 1

AMMONIA EMISSION RATES

NORTH MAP/DAP PLANT
FARMLAND HYDRO, L.P.
POLK COUNTY, FLORIDA

Material Rate TPH	Ammonia Emissions Rates (lbs/hr) Measured Rates			Permit Limit
	Run 1	Run 2	Run 3	
119.7 MAP REACTOR	9.64	19.97	18.63	30.9
119.3 MAP DRYER	0.25	0.41	0.97	7.0
90.0 DAP REACTOR	78.82*	197.05*	40.05	41.6
96.6 DAP DRYER	3.10	2.27	2.88	5.2

* These measured emissions exceed the current construction permit limit.

KOOGLER & ASSOCIATES

ATTACHMENT 2

ISC2 MODELING RESULTS FOR AMMONIA

```
CO STARTING
   TITLEONE FARMLAND-HYDRO, **BARTOW FLORIDA AMMONIA REVISED**  MET=TAMPA 1991
   MODELOPT DFAULT CONC   RURAL
   AVERTIME PERIOD
   POLLUTID OTHER
   DCAYCOEF .000000
   RUNORNOT RUN
   ERRORFIL ERRORS.OUT
CO FINISHED

SO STARTING
** Source Location Cards:
**          SRCID SRCTYP        XS            YS            ZS
   LOCATION   S_R&G   POINT      32.9       -41.4              00.00
   LOCATION   S_DRY   POINT      0          -37.5              00.00
   LOCATION   N_R&G   POINT      32.9       0                  00.00
   LOCATION   N_DRY   POINT      0          0                  00.00

** Source Parameter Cards:
** POINT:   SRCID          QS          HS          TS          VS          DS
   SRCPARAM  S_R&G         6.70        54.88       341.3       5.37        1.52
   SRCPARAM  S_DRY         4.20        39.33       329.1       11.01       2.29
   SRCPARAM  N_R&G        25.20        39.33       354.1       10.63       1.68
   SRCPARAM  N_DRY         0.66        39.33       315.2       13.11       2.29

   BUILDHGT  S_R&G  36*33.
             S_DRY  36*33.
             N_R&G  36*33.
             N_DRY  36*33.
   BUILDWID  S_R&G  36*47.
             S_DRY  36*47.
             N_R&G  36*47.
             N_DRY  36*47.
   SRCGROUP ALL
SO FINISHED

RE STARTING
   GRIDPOLR POL STA
   GRIDPOLR POL ORIG     0.0       0.0
   GRIDPOLR POL DIST   175.0   200.0   300.0   400.0   500.0  1000.0
   GRIDPOLR POL GDIR     36  10.00   10.00
   GRIDPOLR POL END
RE FINISHED

ME STARTING
   INPUTFIL  D:\ISC2\TAMPA91.ASC
   ANEMHGHT  10.000 METERS
   SURFDATA    12842    1991        TAMPA_FL
   UAIRDATA    12842    1991        RUSKIN_FL
   WINDCATS    1.54    3.09    5.14    8.23   10.80
ME FINISHED

OU STARTING
   RECTABLE ALLAVE FIRST  SECOND
   MAXTABLE ALLAVE  50
OU FINISHED

**********************************
*** SETUP Finishes Successfully ***
**********************************
```

*** MODELING OPTIONS USED: CONC RURAL FLAT DFAULT

*** MODEL SETUP OPTIONS SUMMARY ***

- -

**Model Is Setup For Calculation of Average CONCentration Values.

**Model Uses RURAL Dispersion.

**Model Uses Regulatory DEFAULT Options:
1. Final Plume Rise.
2. Stack-tip Downwash.
3. Buoyancy-induced Dispersion.
4. Use Calms Processing Routine.
5. Not Use Missing Data Processing Routine.
6. Default Wind Profile Exponents.
7. Default Vertical Potential Temperature Gradients.
8. "Upper Bound" Values for Supersquat Buildings.
9. No Exponential Decay for RURAL Mode

**Model Assumes Receptors on FLAT Terrain.

**Model Assumes No FLAGPOLE Receptor Heights.

**Model Calculates PERIOD Averages Only

**This Run Includes: 4 Source(s); 1 Source Group(s); and 216 Receptor(s)

**The Model Assumes A Pollutant Type of: OTHER

**Model Set To Continue RUNning After the Setup Testing.

**Output Options Selected:
Model Outputs Tables of PERIOD Averages by Receptor
Model Outputs Tables of Highest Short Term Values by Receptor (RECTABLE Keyword)
Model Outputs Tables of Overall Maximum Short Term Values (MAXTABLE Keyword)

**NOTE: The Following Flags May Appear Following CONC Values: c for Calm Hours
m for Missing Hours
b for Both Calm and Missing Hours

**Misc. Inputs: Anem. Hgt. (m) = 10.00 ; Decay Coef. = 0.0000 ; Rot. Angle = 0.0
Emission Units = GRAMS/SEC ; Emission Rate Unit Factor = 0.10000E+07
Output Units = MICROGRAMS/M**3

**Input Runstream File: FARM_91R.INP ; **Output Print File: FARM_91R.OUT
**Detailed Error/Message File: ERRORS.OUT

*** MODELING OPTIONS USED: CONC RURAL FLAT DFAULT

*** POINT SOURCE DATA ***

SOURCE ID	NUMBER PART. CATS.	EMISSION RATE (GRAMS/SEC)	X (METERS)	Y (METERS)	BASE ELEV. (METERS)	STACK HEIGHT (METERS)	STACK TEMP. (DEG.K)	STACK EXIT VEL. (M/SEC)	STACK DIAMETER (METERS)	BUILDING EXISTS	EMISSION RATE SCALAR VARY BY
S_R&G	0	0.67000E+01	32.9	-41.4	0.0	54.88	341.30	5.37	1.52	YES	
S_DRY	0	0.42000E+01	0.0	-37.5	0.0	39.33	329.10	11.01	2.29	YES	
N_R&G	0	0.25200E+02	32.9	0.0	0.0	39.33	354.10	10.63	1.68	YES	
N_DRY	0	0.66000E+00	0.0	0.0	0.0	39.33	315.20	13.11	2.29	YES	

*** MODELING OPTIONS USED: CONC RURAL FLAT DFAULT

*** SOURCE IDs DEFINING SOURCE GROUPS ***

GROUP ID	SOURCE IDs
ALL	S_R&G , S_DRY , N_R&G , N_DRY ,

*** MODELING OPTIONS USED: CONC RURAL FLAT DFAULT

*** DIRECTION SPECIFIC BUILDING DIMENSIONS ***

SOURCE ID: S_R&G

IFV	BH	BW	WAK	IFV	BH	BW	WAK	IFV	BH	BW	WAK	IFV	BH	BW	WAK	IFV	BH	BW	WAK	IFV	BH	BW	WAK
1	33.0,	47.0,	0	2	33.0,	47.0,	0	3	33.0,	47.0,	0	4	33.0,	47.0,	0	5	33.0,	47.0,	0	6	33.0,	47.0,	0
7	33.0,	47.0,	0	8	33.0,	47.0,	0	9	33.0,	47.0,	0	10	33.0,	47.0,	0	11	33.0,	47.0,	0	12	33.0,	47.0,	0
13	33.0,	47.0,	0	14	33.0,	47.0,	0	15	33.0,	47.0,	0	16	33.0,	47.0,	0	17	33.0,	47.0,	0	18	33.0,	47.0,	0
19	33.0,	47.0,	0	20	33.0,	47.0,	0	21	33.0,	47.0,	0	22	33.0,	47.0,	0	23	33.0,	47.0,	0	24	33.0,	47.0,	0
25	33.0,	47.0,	0	26	33.0,	47.0,	0	27	33.0,	47.0,	0	28	33.0,	47.0,	0	29	33.0,	47.0,	0	30	33.0,	47.0,	0
31	33.0,	47.0,	0	32	33.0,	47.0,	0	33	33.0,	47.0,	0	34	33.0,	47.0,	0	35	33.0,	47.0,	0	36	33.0,	47.0,	0

SOURCE ID: S_DRY

IFV	BH	BW	WAK	IFV	BH	BW	WAK	IFV	BH	BW	WAK	IFV	BH	BW	WAK	IFV	BH	BW	WAK	IFV	BH	BW	WAK
1	33.0,	47.0,	0	2	33.0,	47.0,	0	3	33.0,	47.0,	0	4	33.0,	47.0,	0	5	33.0,	47.0,	0	6	33.0,	47.0,	0
7	33.0,	47.0,	0	8	33.0,	47.0,	0	9	33.0,	47.0,	0	10	33.0,	47.0,	0	11	33.0,	47.0,	0	12	33.0,	47.0,	0
13	33.0,	47.0,	0	14	33.0,	47.0,	0	15	33.0,	47.0,	0	16	33.0,	47.0,	0	17	33.0,	47.0,	0	18	33.0,	47.0,	0
19	33.0,	47.0,	0	20	33.0,	47.0,	0	21	33.0,	47.0,	0	22	33.0,	47.0,	0	23	33.0,	47.0,	0	24	33.0,	47.0,	0
25	33.0,	47.0,	0	26	33.0,	47.0,	0	27	33.0,	47.0,	0	28	33.0,	47.0,	0	29	33.0,	47.0,	0	30	33.0,	47.0,	0
31	33.0,	47.0,	0	32	33.0,	47.0,	0	33	33.0,	47.0,	0	34	33.0,	47.0,	0	35	33.0,	47.0,	0	36	33.0,	47.0,	0

SOURCE ID: N_R&G

IFV	BH	BW	WAK	IFV	BH	BW	WAK	IFV	BH	BW	WAK	IFV	BH	BW	WAK	IFV	BH	BW	WAK	IFV	BH	BW	WAK
1	33.0,	47.0,	0	2	33.0,	47.0,	0	3	33.0,	47.0,	0	4	33.0,	47.0,	0	5	33.0,	47.0,	0	6	33.0,	47.0,	0
7	33.0,	47.0,	0	8	33.0,	47.0,	0	9	33.0,	47.0,	0	10	33.0,	47.0,	0	11	33.0,	47.0,	0	12	33.0,	47.0,	0
13	33.0,	47.0,	0	14	33.0,	47.0,	0	15	33.0,	47.0,	0	16	33.0,	47.0,	0	17	33.0,	47.0,	0	18	33.0,	47.0,	0
19	33.0,	47.0,	0	20	33.0,	47.0,	0	21	33.0,	47.0,	0	22	33.0,	47.0,	0	23	33.0,	47.0,	0	24	33.0,	47.0,	0
25	33.0,	47.0,	0	26	33.0,	47.0,	0	27	33.0,	47.0,	0	28	33.0,	47.0,	0	29	33.0,	47.0,	0	30	33.0,	47.0,	0
31	33.0,	47.0,	0	32	33.0,	47.0,	0	33	33.0,	47.0,	0	34	33.0,	47.0,	0	35	33.0,	47.0,	0	36	33.0,	47.0,	0

SOURCE ID: N_DRY

IFV	BH	BW	WAK	IFV	BH	BW	WAK	IFV	BH	BW	WAK	IFV	BH	BW	WAK	IFV	BH	BW	WAK	IFV	BH	BW	WAK
1	33.0,	47.0,	0	2	33.0,	47.0,	0	3	33.0,	47.0,	0	4	33.0,	47.0,	0	5	33.0,	47.0,	0	6	33.0,	47.0,	0
7	33.0,	47.0,	0	8	33.0,	47.0,	0	9	33.0,	47.0,	0	10	33.0,	47.0,	0	11	33.0,	47.0,	0	12	33.0,	47.0,	0
13	33.0,	47.0,	0	14	33.0,	47.0,	0	15	33.0,	47.0,	0	16	33.0,	47.0,	0	17	33.0,	47.0,	0	18	33.0,	47.0,	0
19	33.0,	47.0,	0	20	33.0,	47.0,	0	21	33.0,	47.0,	0	22	33.0,	47.0,	0	23	33.0,	47.0,	0	24	33.0,	47.0,	0
25	33.0,	47.0,	0	26	33.0,	47.0,	0	27	33.0,	47.0,	0	28	33.0,	47.0,	0	29	33.0,	47.0,	0	30	33.0,	47.0,	0
31	33.0,	47.0,	0	32	33.0,	47.0,	0	33	33.0,	47.0,	0	34	33.0,	47.0,	0	35	33.0,	47.0,	0	36	33.0,	47.0,	0

*** MODELING OPTIONS USED: CONC RURAL FLAT DFAULT

*** GRIDDED RECEPTOR NETWORK SUMMARY ***

*** NETWORK ID: POL ; NETWORK TYPE: GRIDPOLR ***

*** ORIGIN FOR POLAR NETWORK ***
X-ORIG = 0.00 ; Y-ORIG = 0.00 (METERS)

*** DISTANCE RANGES OF NETWORK ***
(METERS)

175.0, 200.0, 300.0, 400.0, 500.0, 1000.0,

*** DIRECTION RADIALS OF NETWORK ***
(DEGREES)

10.0, 20.0, 30.0, 40.0, 50.0, 60.0, 70.0, 80.0, 90.0, 100.0,
110.0, 120.0, 130.0, 140.0, 150.0, 160.0, 170.0, 180.0, 190.0, 200.0,
210.0, 220.0, 230.0, 240.0, 250.0, 260.0, 270.0, 280.0, 290.0, 300.0,
310.0, 320.0, 330.0, 340.0, 350.0, 360.0,

*** MODELING OPTIONS USED: CONC RURAL FLAT DFAULT

*** METEOROLOGICAL DAYS SELECTED FOR PROCESSING ***
(1=YES; 0=NO)

```
1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1
1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1
1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1
1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1
1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1
1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1
1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1
1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1
```

NOTE: METEOROLOGICAL DATA ACTUALLY PROCESSED WILL ALSO DEPEND ON WHAT IS INCLUDED IN THE DATA FILE.

*** UPPER BOUND OF FIRST THROUGH FIFTH WIND SPEED CATEGORIES ***
(METERS/SEC)

1.54, 3.09, 5.14, 8.23, 10.80,

*** WIND PROFILE EXPONENTS ***

STABILITY	WIND SPEED CATEGORY					
CATEGORY	1	2	3	4	5	6
A	.70000E-01	.70000E-01	.70000E-01	.70000E-01	.70000E-01	.70000E-01
B	.70000E-01	.70000E-01	.70000E-01	.70000E-01	.70000E-01	.70000E-01
C	.10000E+00	.10000E+00	.10000E+00	.10000E+00	.10000E+00	.10000E+00
D	.15000E+00	.15000E+00	.15000E+00	.15000E+00	.15000E+00	.15000E+00
E	.35000E+00	.35000E+00	.35000E+00	.35000E+00	.35000E+00	.35000E+00
F	.55000E+00	.55000E+00	.55000E+00	.55000E+00	.55000E+00	.55000E+00

*** VERTICAL POTENTIAL TEMPERATURE GRADIENTS ***
(DEGREES KELVIN PER METER)

STABILITY	WIND SPEED CATEGORY					
CATEGORY	1	2	3	4	5	6
A	.00000E+00	.00000E+00	.00000E+00	.00000E+00	.00000E+00	.00000E+00
B	.00000E+00	.00000E+00	.00000E+00	.00000E+00	.00000E+00	.00000E+00
C	.00000E+00	.00000E+00	.00000E+00	.00000E+00	.00000E+00	.00000E+00
D	.00000E+00	.00000E+00	.00000E+00	.00000E+00	.00000E+00	.00000E+00
E	.20000E-01	.20000E-01	.20000E-01	.20000E-01	.20000E-01	.20000E-01
F	.35000E-01	.35000E-01	.35000E-01	.35000E-01	.35000E-01	.35000E-01

*** MODELING OPTIONS USED: CONC RURAL FLAT DFAULT

*** THE FIRST 24 HOURS OF METEOROLOGICAL DATA ***

FILE: D:\ISC2\TAMPA91.ASC FORMAT: (4I2,2F9.4,F6.1,I2,2F7.1)
SURFACE STATION NO.: 12842 UPPER AIR STATION NO.: 12842
NAME: TAMPA_FL NAME: RUSKIN_FL
YEAR: 1991 YEAR: 1991

YEAR	MONTH	DAY	HOUR	FLOW VECTOR	SPEED (M/S)	TEMP (K)	STAB CLASS	MIXING HEIGHT (M) RURAL	MIXING HEIGHT (M) URBAN
91	1	1	1	231.0	1.54	293.7	6	1598.4	383.0
91	1	1	2	228.0	2.06	293.2	5	1613.2	383.0
91	1	1	3	234.0	1.54	292.6	6	1628.0	383.0
91	1	1	4	233.0	2.06	292.6	5	1642.8	383.0
91	1	1	5	233.0	2.06	292.6	5	1657.7	383.0
91	1	1	6	232.0	2.06	292.6	5	1672.5	383.0
91	1	1	7	235.0	2.06	292.0	4	1687.3	1687.3
91	1	1	8	263.0	2.06	292.6	4	1702.1	1702.1
91	1	1	9	237.0	2.06	293.2	3	1716.9	1716.9
91	1	1	10	301.0	3.09	297.6	3	1731.7	1731.7
91	1	1	11	294.0	4.12	299.8	3	1746.6	1746.6
91	1	1	12	296.0	3.60	300.9	2	1761.4	1761.4
91	1	1	13	353.0	3.09	300.9	2	1776.2	1776.2
91	1	1	14	349.0	3.09	302.0	2	1791.0	1791.0
91	1	1	15	302.0	3.60	302.6	3	1791.0	1791.0
91	1	1	16	354.0	3.60	302.0	3	1791.0	1791.0
91	1	1	17	81.0	3.60	300.4	4	1791.0	1791.0
91	1	1	18	137.0	3.60	298.7	5	1786.7	1711.1
91	1	1	19	164.0	3.60	296.5	5	1775.5	1502.2
91	1	1	20	167.0	4.12	295.4	5	1764.2	1293.4
91	1	1	21	190.0	2.57	293.7	6	1753.0	1084.5
91	1	1	22	222.0	3.09	294.3	6	1741.8	875.7
91	1	1	23	250.0	3.09	293.7	6	1730.5	666.8
91	1	1	24	240.0	2.57	293.2	6	1719.3	458.0

*** NOTES: STABILITY CLASS 1=A, 2=B, 3=C, 4=D, 5=E AND 6=F.
FLOW VECTOR IS DIRECTION TOWARD WHICH WIND IS BLOWING.

*** MODELING OPTIONS USED: CONC RURAL FLAT DFAULT

*** THE PERIOD (8760 HRS) AVERAGE CONCENTRATION VALUES FOR SOURCE GROUP: ALL ***
INCLUDING SOURCE(S): S_R&G , S_DRY , N_R&G , N_DRY ,

*** NETWORK ID: POL ; NETWORK TYPE: GRIDPOLR ***

** CONC OF OTHER IN MICROGRAMS/M**3 **

DIRECTION (DEGREES)	DISTANCE (METERS) 175.00	200.00	300.00	400.00	500.00	1000.00
10.00	13.86934	13.41717	14.12409	13.58986	12.01921	6.44452
20.00	17.40121	17.87184	18.21247	16.58521	14.18190	7.18943
30.00	19.38363	18.94156	18.52506	16.80001	14.12445	6.88180
40.00	17.77990	17.16791	17.33632	16.73254	14.57648	7.49489
50.00	18.82819	18.49276	18.59373	17.71691	15.19128	7.43780
60.00	20.75057	20.81119	21.03482	20.20258	17.16084	7.96848
70.00	20.61308	20.48580	21.05208	20.63361	17.61064	7.97085
80.00	22.23388	22.00149	22.38340	22.01326	18.84379	8.65632
90.00	25.02110	24.76638	24.61001	23.81738	20.38287	9.73317
100.00	23.32727	23.18370	22.73187	21.66363	18.36120	8.78095
110.00	19.91750	19.22949	18.19644	17.35375	14.70187	7.30721
120.00	25.41645	23.70703	20.01718	18.22407	15.31600	8.26239
130.00	21.61732	21.60711	21.24694	20.39754	17.41410	9.84994
140.00	16.98994	16.88823	16.50273	15.72969	13.48537	7.54108
150.00	14.74951	14.63869	14.51740	13.35410	11.08739	5.82127
160.00	15.06717	14.15354	12.45103	11.49577	9.76558	5.20201
170.00	16.33532	15.94596	14.81717	13.34582	11.26347	5.96973
180.00	17.86626	17.39701	16.17333	14.27087	11.92824	6.39218
190.00	18.64227	18.35105	16.38085	14.21387	12.00269	6.57660
200.00	22.71861	21.06758	17.26398	14.67169	12.25002	6.69895
210.00	33.53421	31.65519	26.52924	21.77177	17.67788	9.06777
220.00	49.32191	46.13616	38.52204	31.77539	25.87998	13.02612
230.00	61.65229	58.74124	53.09313	45.13068	37.56770	20.03838
240.00	59.78386	58.87420	58.39108	51.55456	44.15358	25.03193
250.00	50.79090	49.96955	51.25286	44.74513	38.62027	22.07165
260.00	41.54403	40.76941	41.13229	35.51525	30.41822	16.75208
270.00	36.84706	35.93301	36.05843	30.60843	26.17554	14.47660
280.00	35.31586	34.69967	35.38778	29.79640	25.24496	13.70234
290.00	41.85250	41.23106	41.35864	34.59497	29.29559	15.95236
300.00	40.94348	40.76286	42.06417	37.10099	31.86280	17.51984
310.00	40.56028	39.04033	37.70040	32.72985	27.84926	14.96494
320.00	31.39180	29.59245	27.79605	23.94104	20.12794	10.18471
330.00	21.67579	19.91154	18.82148	16.63297	14.16887	7.15091
340.00	16.88196	15.88121	15.53133	13.95207	11.90559	5.99593
350.00	14.35537	13.78611	14.13392	12.87147	11.07786	5.78709
360.00	13.89471	13.31042	13.46038	12.22383	10.54936	5.69738

*** MODELING OPTIONS USED: CONC RURAL FLAT DFAULT

*** THE SUMMARY OF MAXIMUM PERIOD (8760 HRS) RESULTS ***

** CONC OF OTHER IN MICROGRAMS/M**3 **

GROUP ID	AVERAGE CONC	RECEPTOR (XR, YR, ZELEV, ZFLAG)	OF TYPE	NETWORK GRID-ID
ALL	1ST HIGHEST VALUE IS	61.65229 AT (-134.06, -112.49, 0.00, 0.00)	GP	POL
	2ND HIGHEST VALUE IS	59.78386 AT (-151.55, -87.50, 0.00, 0.00)	GP	POL
	3RD HIGHEST VALUE IS	58.87420 AT (-173.21, -100.00, 0.00, 0.00)	GP	POL
	4TH HIGHEST VALUE IS	58.74124 AT (-153.21, -128.56, 0.00, 0.00)	GP	POL
	5TH HIGHEST VALUE IS	58.39108 AT (-259.81, -150.00, 0.00, 0.00)	GP	POL
	6TH HIGHEST VALUE IS	53.09313 AT (-229.81, -192.84, 0.00, 0.00)	GP	POL

*** RECEPTOR TYPES: GC = GRIDCART
GP = GRIDPOLR
DC = DISCCART
DP = DISCPOLR
BD = BOUNDARY

*** MODELING OPTIONS USED: CONC RURAL FLAT DFAULT

*** Message Summary For ISC2 Model Execution ***

--------- Summary of Total Messages --------

A Total of 0 Fatal Error Message(s)
A Total of 0 Warning Message(s)
A Total of 572 Informational Message(s)

A Total of 571 Calm Hours Identified

******** FATAL ERROR MESSAGES ********
*** NONE ***

******** WARNING MESSAGES ********
*** NONE ***

****
*** ISCST2 Finishes Successfully ***
****

KOOGLER & ASSOCIATES
4014 N.W. 13TH ST. 377-5822
GAINESVILLE, FL 32609

0003381 7152

63-2/630
00320

Mar 28 1994

PAY TO THE ORDER OF Florida Dept. of Environmental Protection $ 250.00

Two Hundred Fifty and 00/100 DOLLARS

FIRST UNION First Union National Bank of Florida Gainesville, Florida

FOR Farmland Hydro - 123-94-01

David Lee Johnson

[redacted]

GUARDIAN® SAFETY (©CLARK AMERICAN BA

Florida Department of
Environmental Protection

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

Lawton Chiles
Governor

Virginia B. Wetherell
Secretary

February 23, 1994

CERTIFIED MAIL - RETURN RECEIPT REQUESTED

Mr. C. Gene Meier, Administrator
Environmental Services
Farmland Hydro, L.P.
Post Office Box 960
Bartow, Florida 33830

Dear Mr. Meier:

Re: Permit No. AC 53-210886/PSD-FL-186

The Department has reviewed your request for an extension of the expiration date of the referenced permit to modify the North Granulation plant. The additional time is needed to complete the compliance tests on the modified air pollution control equipment and submit an application for permit to operate the plant. This request is acceptable and the expiration date of Permit No. AC 53-210886/PSD-FL-186 is extended from April 1, 1994, to August 1, 1994.

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 applicant of the amendment request/application and the parties listed below must be filed within 14 days of receipt of this amendment. Petitions filed by other persons must be filed within 14 days of the amendment issuance or within 14 days of their receipt of this amendment, whichever occurs first. 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;
(g) A statement of the relief sought by petitioner, stating precisely the action the 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 amendment. Persons whose substantial interests will be affected by any decision of the Department with regard to the request/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 amendment 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.

A copy of this letter shall be filed with the referenced permit and will become a part of that permit.

Sincerely,

Howard L. Rhodes

Howard L. Rhodes
Director
Division of Air Resources
Management

HLR/WH/bjb

Attachment: Farmland December 10, 1993, letter

CERTIFICATE OF SERVICE

The undersigned duly designated deputy clerk hereby certifies that this AMENDMENT and all copies were mailed by certified mail before the close of business on 2/23/94 to the listed persons.

Clerk Stamp

FILING AND ACKNOWLEDGMENT FILED, on this date, pursuant to 120.52(11), Florida Statutes, with the designated Department Clerk, receipt of which is hereby acknowledged.

Barbara J. Boutwell 2/23/94

Clerk Date

Is your RETURN ADDRESS completed on the reverse side?

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

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. C. Gene Meier, Administrator
Environmental Services
Farmland Hydro, L.P.
Post Office Box 960
Bartow, Florida 33830

4a. Article Number
P 872 562 608

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

7. Date of Delivery
2-28-94

5. Signature (Addressee)
Linda Thompson

6. Signature (Agent)

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

PS Form **3811**, December 1991 ☆U.S. GPO: 1992—323-402 **DOMESTIC RETURN RECEIPT**

Thank you for using Return Receipt Service.

P 872 562 608

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

UNITED STATES POSTAL SERVICE

Sent to: Mr. C. Gene Meier	
Street and No.: Post Office Box 960	
P.O., State and ZIP Code: Bartow, Florida 33830	
Postage	$
Certified Fee	
Special Delivery Fee	
Restricted Delivery Fee	
Return Receipt Showing to Whom & Date Delivered	
Return Receipt Showing to Whom, Date, and Addressee's Address	
TOTAL Postage & Fees	$
Postmark or Date: Mailed: 2/23/94 Permit No. AC 53-210886/ PSD-FL-186	

PS Form **3800**, JUNE 1991

Memorandum

Florida Department of
Environmental Protection

TO: Howard L. Rhodes

FROM: Clair H. Fancy

DATE: February 23, 1994

SUBJ: Amendment of Permit
Farmland Hydro, L.P.

Attached for your approval and signature is a letter that will extend a construction permit to modify a phosphate fertilizer plant. The extension is to allow additional time to complete the compliance tests and submit an application for permit to operate.

The request is not controversial. I recommend your approval and signature.

CHF/WH/bjb

Attachment

Pa Hy 2/22

Howard signed this one.

Clair

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

KA 123-94-06

February 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
Farmland Hydro, L.P.
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 Farmland as well as the compilation of Title V permit conditions by FDEP. Thus, only valid applicable requirements will remain in the source permits.

Farmland has several air operation (and the preceding construction) permits which contain emission limitations outside of the above FDEP criteria. 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. As the source operation permits were issued by FDEP's Tampa office, a request for amendment of those permits is simultaneously being submitted to that office. The amendment request for construction permits issued by the Bureau of Air Regulation (BAR) are 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.
1.	North MAP/DAP Plant	A053-250142 (1)	AC53-210886 (2)
2.	Green SPA Plant	A053-242141 (1)	AC53-138041 (2)
3.	No. 5 SAP	A053-200485 (1)	AC53-185490 (2)
	Therminol Heater	A053-187834 (3)	None
	Auxiliary Steam Boiler	A053-159758 (3)	None

NOTES:

(1) Operation permit amendment expected from FDEP District office after the construction permit amendment is issued by BAR.
(2) Construction permit amendment expected from BAR.
(3) Operation permit amendment expected from FDEP District office.

A check in the amount of $750. (permit amendments 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. Jenkins, Farmland Hydro, L.P.
G. Kissel, FDEP Tampa

ATTACHMENT 1

Unit/Operation : North MAP/DAP Plant

Permit No. : AC53-210886

Amendment Request :

The above referenced permit contains a 0.5% sulfur content limit for No. 2 fuel oil. This sulfur content reflects a typical analysis of No. 2 fuel oil available on the market. To our knowledge, the sulfur content limit in the permit is not based on a regulatory standard, nor does it reflect an emission limitation requested by Farmland to avoid a specific rule applicability (e.g. PSD, etc.).

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

Page 8, Specific Condition No. 15:

FROM: The maximum heat input rate to the dryer shall not exceed 50 MMBtu/hour. Natural gas (max. 0.05 MMCF/hr) shall be burned in the dryer; except when the natural gas supply to the plant is curtailed, then No. 2 fuel oil with a maximum of 0.5% sulfur may be burned for upto 400 hours during any 12 month period.

TO: The maximum heat input rate to the dryer shall not exceed 50 MMBtu/hour. Natural gas (max. 0.05 MMCF/hr) shall be burned in the dryer; except when the natural gas supply to the plant is curtailed, then No. 2 fuel oil may be burned for upto 400 hours during any 12 month period.

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:
Farmland Hydro, L.P.
P. O. Box 960
Bartow, Florida 33830

Permit Number: AC 53-210886
PSD-FL-186
Expiration Date: January 1, 1994*
County: Polk
Latitude/Longitude: 27°50'37"N
81°56'05"W
Project: North GTSP/MAP/DAP Granulation Plant Modifications

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:

Authorization to modify the existing North GTSP/MAP/DAP** Granulation Plant to increase allowable production from 70 to 120 TPH MAP and from from 50 to 100 TPH DAP. The modifications include: installing a new reactor-granulator scrubber system followed by a new BFL scrubber system; a new cooler-chiller; a new venturi-cyclonic scrubber system; a new MAP pipe reactor and granulator; new screens and recycle conveyor; new smaller fans for the screens and mills; relocation of existing screens, elevators, elevator drive, and recycle conveyor in the screen system; new controls for the dryer scrubber and the screen/mill scrubber; relocation of the pipe reactor feed tank system; relocation and modification of the DAP reactor system; relocation of the north fines bin; relocation of the reclaim water tank system; removal of the existing GTSP scrubber systems; and other associated alterations. The plant will discharge air pollutants through the existing MAP/DAP main stack (114,000 acfm/88,000 dscfm/129 ft. elevation/7.5 ft. diameter/108°F) and the new reactor-granulator stack (49,700 acfm/27,000 dscfm/129 ft. elevation/5.5 ft. diameter/178°F). The North MAP/DAP Granulation Plant is located at Farmland Hydro, L.P.'s phosphate fertilizer chemical manufacturing facility on County Road 640 West, near Bartow, Polk County, Florida. The UTM coordinates of this facility are Zone 17, 409.5 km E and 3079.5 km N.

SPECIFIC CONDITIONS:

13. This plant shall not manufacture GTSP.

14. The plant may operate continuously, 8760 hrs/yr.

15. Heat input to the dryer shall not exceed 50 MMBtu/hr. Only natural gas (max. 0.05 MMCF/hr) shall be burned in the dryer; except when the natural gas supply to the plant is curtailed, then No. 2 fuel oil with a maximum of 0.5% sulfur may be burned for up to 400 hrs during any 12 month period.

16. Lignosulphonates (lignin) shall be used when needed to control unconfined dust emissions when handling MAP and DAP product. Defoamers may be added to the 28% P_2O_5 scrubbing liquid.

17. Reasonable precautions for minimizing fugitive emissions of ammonia shall include routine inspection of vessels, piping, and hoses; placing scrubbers in operation prior to feeding ammonia to the process; and prompt repair of any leaks.

Testing Requirements

18. This plant shall be tested at a production rate of 108 to 120 TPH MAP and 90 to 100 TPH DAP within 60 days of commercial production of these products by the modified plant and annually thereafter for particulate matter, fluorides, and visible emissions. It shall also be tested for ammonia on achieving commerical production and prior to the renewal of any permit to operate issued for the modified plant (test every 5 years). The annual test during MAP and DAP production will be waived if that product is not manufactured during that year. All compliance tests shall meet the requirements listed in F.A.C. Rule 17-2.700. The unit shall not operate above the maximum permitted MAP or DAP production rates; except during the time of the compliance tests.

19. Test methods to determine compliance are EPA Method 5 for particulate matter, EPA Method 9 for visible emissions, and EPA 13A or 13B for fluorides. These methods are described in 40 CFR 60, Appendix A (July 1, 1991). Ammonia emissions shall be determined using a variation of the EPA Draft Method, using large impingers with 100 mls of 1.0 normal sulfuric acid in the first three impingers, the last impinger dry and a probe with an external design similar to that used in EPA Method 16, or any other test method agreed to by the Department.

Administrative Requirements

20. The Department's Southwest District shall be notified in

ATTACHMENT 2

Unit/Operation : Green Super Phosphoric Acid Plant

Permit No. : AC53-138041

Amendment Request :

The most recent construction permit in our files was issued November 19, 1987. The permit contains nitrogen oxides (NOx) emission limits of 40.5 pounds per hour and 90.0 tons per year. NOx emissions are a by-product of the process. To our knowledge, the emission limitation in the permit is not based on a standard for GSPA, nor does it reflect an emission limitation requested by Farmland to avoid a specific rule applicability (e.g. PSD, etc.).

It is requested that the construction permit be amended as follows:

Page 6, Specific Condition No. 2:

FROM: The emissions from the Green Superphosphoric Acid plant shall not exceed:

Pollutant	Maximum Allowable Emissions	
	pounds/hour	tons/year
NOx	40.5	90.0
Fluoride	0.2	0.4

TO: Emissions of fluorides from the Green Superphosphoric Acid plant shall not exceed 0.2 pounds per hour, or 0.4 tons/year.

Page 6, Specific Condition No. 8:

FROM: Delete the portion of the condition which requires NOx testing.

STATE OF FLORIDA

DEPARTMENT OF ENVIRONMENTAL REGULATION

TWIN TOWERS OFFICE BUILDING
2600 BLAIR STONE ROAD
TALLAHASSEE, FLORIDA 32399-2400

BOB MARTINEZ
GOVERNOR

DALE TWACHTMANN
SECRETARY

PERMITTEE:
Farmland Inc.
P. O. Box 960
Bartow, Florida 33830

Permit Number: AC 53-138041
Expiration Date: October 31, 1988
County: Polk
Latitude/Longitude: 27° 50' 37" N
81° 56' 05" W
Project: Green Super Phosphoric Acid Oxidation Unit

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 Green Superphosphoric Acid (GSPA) plant located at the permittee's phosphate fertilizer complex near Bartow on State Road 640 in Polk County, Florida. UTM coordinates are 409.5 km E and 3079.5 km N.

Construction shall be in accordance with the attached permit application except as otherwise noted under the Specific Conditions set forth in this permit.

Attachments are as follows:

1. Application to Construct Air Pollution Sources, DER form 17-1.202(1), and letter dated August 7, 1987.
2. Southwest District DER letter dated October 16, 1987.
3. Farmland letter dated October 29, 1987, with attached letter from Koogler & Associates dated October 27, 1987.

PERMITTEE:
Farmland, Inc.

Permit Number: AC 53-138041
Expiration Date: October 31, 1988

SPECIFIC CONDITIONS:

2. The emissions from the Green Superphosphoric Acid plant shall not exceed:

Pollutant	Maximum Allowable Emissions	
	lb/hr	T/yr
NOx	40.5	90.0
Fluoride	0.2	0.4

3. Other emissions from the process shall be controlled by sealing and/or venting such emissions to the pollution abatement system.

4. The permittee shall install, calibrate, maintain, operate and record data from flow monitoring devices used to determine total P_2O_5 input to the plant. A daily record on the P_2O_5 input to the plant shall be maintained.

5. The permittee shall measure and record the total pressure drop across the scrubber system. Pressure drop across the scrubber must be at least 4 inches of water during plant operation. These records shall be maintained for 2 years and available for inspection by regulatory agency personnel on request.

6. Construction should commence and be completed within a reasonable time based on the projections in the application.

7. Reasonable precautions to prevent fugitive particulate emissions during modification, such as coating or spraying roads and construction sites used by contractors, shall be taken by the permittee.

8. Before the construction permit expires, the GSPA plant shall be sampled for NOx and fluoride emissions. Test procedures shall be in accordance with EPA reference methods 1, 2, 3, 7 and 7A or 7E, 13A or 13B as published in 40 CFR 60, dated July 1, 1986. The Department shall be notified in writing 15 days or more prior to the compliance test. The test shall be conducted at permitted production capacity or no less than 90% thereof. P_2O_5 input, pH of scrubber water, and pressure drop across the scrubber shall be reported to the Department along with the test data and results.

Final Determination

Farmland Industries
Polk County

Green Super Phosphoric Acid Oxidation Unit
Permit No. AC 53-138041

Florida Department of Environmental Regulation
Central Air Permitting
Bureau of Air Quality Management

November 17, 1987

Final Determination

The Bureau of Air Quality Management completed its review of Farmland's application for a permit to construct a Green Super Phosphoric Acid Oxidation Unit at their Polk County phosphate facility. On October 17, 1987, public notice of the Department's intent to issue the permit was published in the Lakeland Ledger. Copies of the Technical Evaluation and Preliminary Determination were available for public inspection at the Department's offices in Tampa and Tallahassee.

Comments were submitted by the applicant and the Southwest District DER office. The issues and the Department's responses are as follows:

Issue No. 1: Farmland requested a modification to Specific Condition No. 5 reducing the design minimum scrubber pressure drop to 4 inches of water.

The Department is in agreement with this request and the permit will be modified accordingly. If necessary, the minimum pressure drop can be changed again after results are obtained from the compliance test.

Issue No. 2: Farmland requested changes in the test methods specified in Specific Condition No. 8.

These changes were made as requested. NOx test method 7E was not included initially because 40 CFR 60, App. A, Method 7E, paragraph 1.1 states that the method is applicable only to those sources for which it is specified in the NSPS regulations, and Method 7E was not specified for nitric acid plants. Since this source is a one-of-a-kind unit with net emissions below the significant level, the Department agrees that method 7E will be sufficient.

Issue No. 3: The DER Southwest District office requested that a Specific Condition be added to require a maximum 10% opacity limit since the emissions are similar to those from a nitric acid plant.

Farmland has confirmed from their pilot plant data that the opacity will be less than 20% but likely will be more than 10%. Since it is possible that the opacity may be closer to 10% than 20% once fine tuning is completed, the Department is in agreement that a reasonable opacity limitation can be established after the plant starts up and is lined out. Language to this effect was included as Specific Condition No. 10. Since additional time will be needed for this determination, the permit expiration date was changed to October 31, 1988.

ATTACHMENT 3

Unit/Operation : No. 5 Sulfuric Acid Plant

Permit No. : AC53-185490

Amendment Request :

The above referenced permit contains emission limitations for nitrogen oxides. To our knowledge, this limitation in the permit is not based on a standard, nor does it reflect an emission limitation requested by Farmland to avoid a specific rule applicability. In fact FDEP's PSD review in 1989 (PSD-FL-143) acknowledged that NOx is a by-product of the sulfuric acid manufacturing process and there is no method of control to represent Best Available Control Technology for it. It is interesting to note that the PSD review at that time was triggered based on conservative projections of potential emissions from the project. Subsequent testing of the project, as built, have shown that a PSD review for NOx would not have been required if representative plant performance information was available during preconstruction review.

Based on the above discussion it is requested that the construction permit be amended as follows:

Page 6, Specific Condition No. 5:

Delete this condition regarding NOx emissions.

Page 6, Specific Condition No. 8:

Delete the portion of the condition which requires NOx testing.

KOOGLER & ASSOCIATES

Florida Department of Environmental Regulation

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

Bob Martinez, Governor Dale Twachtmann, Secretary John Shearer, Assistant Secretary

PERMITTEE:
Farmland Industries, Inc.
P. O. Box 960
Bartow, FL 33830

Permit Number: AC 53-185490
PSD-FL-143A
Expiration Date: Sept. 30, 1991
County: Polk
Latitude/Longitude: 27°50'37"N
81°56'05"W
Project: Sulfuric Acid Plant No. 5 - Production Increase to 2400 TPD

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 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 increase in production from 2000 TPD to 2400 TPD of sulfuric acid in plant No. 5. The source is located at the permittee's existing facility near Bartow, Polk County, Florida. The UTM coordinates are Zone 17, 409.5 km East and 3079.5 km North.

The increase in production shall be carried out 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. Application received on August 23, 1990.

SPECIFIC CONDITIONS:

4. Sulfuric acid mist emissions shall not exceed:

0.15 lb/ton of 100% sulfuric acid produced
15.0 lbs/hr
65.7 tons/yr

5. Nitrogen oxides emissions shall not exceed:

0.12 lb/ton of 100% sulfuric acid produced
11.9 lbs/hr
52.2 tons/year

6. Visible emissions shall not exceed 10% opacity.

7. Sulfuric acid plants No. 1 and No. 2 shall permanently cease operation within 90 days after the No. 5 sulfuric acid plant begins operation.

8. A continuous emission monitor shall be used to monitor sulfur dioxide, in accordance with F.A.C. Rule 17-2.710. Initial and annual compliance tests shall be conducted using:

EPA Method 7 for nitrogen oxides
EPA Method 8 for sulfur dioxide and acid mist
DER Method 9 for visible emissions

9. The compliance tests shall be conducted within 30 days after operation begins. The Department's Southwest District office shall be notified in writing 15 days prior to source testing and at least 5 days prior to initial startup. Written reports of the tests shall be submitted to that office within 45 days of test completion.

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

11. An application for an operation permit must be submitted to the Department's Southwest District office at least 90 days prior to the expiration date of this construction permit or within 45 days after completion of compliance testing, whichever occurs first. The operation permit application shall include a set of conditions acceptable to the Department for sequential startup/ shutdown of the permittee's three sulfuric acid plants. To

Technical Evaluation
and
Preliminary Determination

Farmland Industries, Inc.
Green Bay Complex
Bartow, Polk County, Florida

Sulfuric Acid Plant No. 5
Production Increase to 2,400 TPD

Permit No. AC 53-185490
PSD-FL-143A

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

November 15, 1990

III. Rule Applicability

The construction permit application is subject to review under Chapter 403, Florida Statutes, and Florida Administrative Code (F.A.C.) Chapters 17-2 and 17-4. The facility is located in an area classified as attainment for each of the regulated air pollutants. The proposed major source is subject to the preconstruction review requirements of F.A.C. Rule 17-2.500, Prevention of Significant Deterioration (PSD). The proposed increases in SO_2 and acid mist emissions exceed significant levels set forth in Table 500-2 of F.A.C. Rule 17-2.500. Preconstruction review must include a determination of best available control technology (BACT), good-engineering practice stack height, ambient impact analysis, impact on soils, vegetation, and visibility. F.A.C. Rules 17-2.660, Table 660-1, Section 60.80, and 17-2.700, Table 700-1, apply to this new major source. Emissions will be limited by the federal new source performance standards for sulfur dioxide, acid mist and visible emissions, and the previous BACT determination for NOx (PSD-FL-143).

IV. Source Impact Analysis

A. Ambient Air Analysis

Analysis of ambient air impact from the proposed source generally involves assessment of existing air quality, a PSD increment analysis, and an ambient air quality standards analysis. Existing air quality must be established by monitoring data if the emissions from the new source will have an impact equal to or greater than that listed in F.A.C. Rule 17-2.500, Table 500-3, De Minimus Ambient Impacts. However, if it is shown, as here, that the net increase in ambient concentrations of applicable pollutants will be less than the de minimus concentrations listed in Table 500-3, the source is exempt from ambient monitoring as provided by F.A.C. Rule 17-2.500(3)(e). The following table summarizes results of air quality analysis for the proposed project:

	Ambient Impacts (ug/m^3)	Signif. Impact	De Minimus Impact
Sulfur Dioxide			
3-hr	0.01	25.0	N/A
24-hr	(less than 0.01)	5.0	13.0
Annual	(less than 0)	1.0	N/A
Acid Mist (24-hr)	5.0	N/A	5.0*

*No de minimus or significant impact levels have been established for acid mist. This figure was calculated based on adjusted threshold limit value (TLV) in order to arrive at an acceptable ambient level (AAL).

Technical Evaluation
and
Preliminary Determination

Farmland Industries, Inc.
Green Bay Complex
Bartow, Polk County, Florida

Sulfuric Acid Plant No. 5
Permit No. AC 53-171751
PSD-FL-143

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

December 21, 1989

Air Pollutant (tons/yr)	Sulfuric Acid Plants			GSPA	Net Increase	Signif. Increase
	1	2	5			
SO_2						
Present	700	700				
Proposed	(700)	(700)	1460		60	40
Acid Mist						
Present	7.5	7.5				
Proposed	(7.5)	(7.5)	54.8		39.8	7
NOx						
Present	25.2	25.2*		64.8		
Proposed	(25.2)	(25.2)	43.4	64.8	57.8	40

*Permanently shut down in 1985 but included for contemporaneous emission changes per F.A.C. Rule 17-2.500(2)(e)3.

III. Rule Applicability

The construction permit application is subject to review under Chapter 403, Florida Statutes, and Florida Administrative Code (F.A.C.) Chapters 17-2 and 17-4. The facility is located in an area classified as attainment for each of the regulated air pollutants. The proposed major source is subject to the preconstruction review requirements of F.A.C. Rule 17-2.500, Prevention of Significant Deterioration (PSD). The proposed increases in emissions exceed significant levels set forth in Table 500-2 of F.A.C. Rule 17-2.500. Preconstruction review must include a determination of best available control technology (BACT), good-engineering practice stack height, ambient impact analysis, impact on soils, vegetation, and visibility. F.A.C. Rules 17-2.660, Table 660-1, Section 60.80, and 17-2.700, Table 700-1, apply to this new major source. Emissions will be limited by the federal new source performance standards for sulfur dioxide, acid mist and visible emissions, and the BACT determination for NOx.

IV. Source Impact Analysis

A. Ambient Air Analysis

Analysis of ambient air impact from the proposed source generally involves assessment of existing air quality, a PSD increment analysis, and an ambient air quality standards analysis. Existing air quality must be established by monitoring data if the emissions from the new source will have an impact equal to or greater than that listed in F.A.C. Rule 17-2.500, Table 500-3, De Minimus Ambient Impacts. However, if it is shown, as here, that the net increase in ambient concentrations of applicable pollutants will be less than the de minimus concentrations listed in Table 500-3, the source is exempt from ambient monitoring as provided by F.A.C. Rule 17-2.500(3)(e). The following table summarizes results of air quality analysis for the proposed project:

Florida Department of
Environmental Protection

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

Lawton Chiles
Governor

Virginia B. Wetherell
Secretary

April 11, 1994

CERTIFIED MAIL - RETURN RECEIPT REQUESTED

Mr. C. Gene Meier, Administrator
Environmental Services
Farmland Hydro, L.P.
P. O. Box 960
Bartow, Florida 33830

Dear Mr. Meier:

Re: Amendment of Permit
AC 53-210886/PSD-FL-186

The Department is in receipt of John Koogler's March 28, 1994, letter requesting that the referenced permit be amended to allow an increase in ammonia emissions. The emission test results listed in Attachment 1 of this letter showed that Farmland's ammonia emission rate was similar to the emission rate of other ammonium phosphate plants. The ambient air modeling results listed in Attachment 2 of this letter showed that the Acceptable Ambient Concentration for ammonia will not be exceeded at the higher emission rate requested. Based on this information, Specific Condition No. 5 or Permit No. AC 53-210886/PSD-FL-186 is changed:

From:

Emissions from the modified plant shall not exceed any of the limits listed in the following tables:

MAP Production

Pollutant		Main Stack	R/G Stack	Plant Total
Fluorides	lbs/TP_2O_5	--	--	0.06
	lbs/hr	1.87	1.87	3.74
	TPY	8.2	8.2	16.4
Particulate Matter	lbs/hr	15.9	6.6	22.5
	TPY	69.6	29.0	98.6
Ammonia	lbs/hr*	7.0	30.9	37.9
	TPY	30.7	135.5	166.2

*24-hour average

Is your RETURN ADDRESS completed on the reverse side?

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

RECEIVED
APR 25 1994
Bureau of Air Regulation

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. C. Gene Meier, Administrator
Environmental Services
Farmland Hydro, L.P.
P. O. Box 960
Bartow, Florida 33830

4a. Article Number
P 872 563 626

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

7. Date of Delivery
4/21/94

5. Signature (Addressee)
Linda Thompson

6. Signature (Agent)

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

PS Form **3811**, December 1991 ☆U.S. GPO: 1992—323-402 **DOMESTIC RETURN RECEIPT**

Thank you for using Return Receipt Service.

P 872 563 626

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

UNITED STATES POSTAL SERVICE

Sent to: Mr. C. Gene Meier	
Street and No.: P. O. Box 960	
P.O., State and ZIP Code: Bartow, Florida 33830	
Postage	$
Certified Fee	
Special Delivery Fee	
Restricted Delivery Fee	
Return Receipt Showing to Whom & Date Delivered	
Return Receipt Showing to Whom, Date, and Addressee's Address	
TOTAL Postage & Fees	$
Postmark or Date: Mailed: 4/19/94 AC 53-210886/PSD-FL-186	

PS Form **3800**, JUNE 1991

Florida Department of
Environmental Protection

Memorandum

TO: Howard L. Rhodes

FROM: Clair H. Fancy

DATE: April 11, 1994

SUBJ: Amendment of Permit
Farmland Hydro, L.P.

Attached for your approval and signature is a letter that will allow an increase in ammonia emissions from a MAP/DAP plant located near Bartow, Florida.

As the Department does not have an emission standard for ammonia, this pollutant will be tracked for inventory purposes only.

I recommend your approval and signature.

CHF/WH/bjb

Attachment

DAP Production

Pollutant		Main Stack	R/G Stack	Plant Total
	lbs/TP_2O_5	--	--	0.06
Fluorides	lbs/hr	1.60	1.16	2.76
	TPY	7.0	5.1	12.1
Particulate	lbs/hr	10.6	5.5	16.1
Matter	TPY	46.5	24.2	70.7
	lbs/hr*	5.2	41.6	46.7
Ammonia	TPY	22.7	182.0	204.7

*24-hour average

To:

Emissions from the modified plant shall not exceed any of the limits listed **for fluorides and particulate matter** in the following tables:

MAP Production

Pollutant		Main Stack	R/G Stack	Plant Total
	lbs/TP_2O_5	--	--	0.06
Fluorides	lbs/hr	1.87	1.87	3.74
	TPY	8.2	8.2	16.4
Particulate	lbs/hr	15.9	6.6	22.5
Matter	TPY	69.6	29.0	98.6
	lbs/hr	7.0	30.9	37.9
Ammonia*	TPY	30.7	135.5	166.2

DAP Production

Pollutant		Main Stack	R/G Stack	Plant Total
Fluorides	lbs/TP_2O_5	--	--	0.06
	lbs/hr	1.60	1.16	2.76
	TPY	7.0	5.1	12.1
Particulate Matter	lbs/hr	10.6	5.5	16.1
	TPY	46.5	24.2	70.7
Ammonia*	lbs/hr	5.2	**128.7**	**133.9**
	TPY	22.7	**563.7**	**586.4**

***Ammonia emission estimates (24-hour averages) listed in these tables are for inventory purposes only. Should the ammonia emissions exceed the listed estimates, the permittee shall model the maximum ammonia emissions to show that the Acceptable Ambient Concentration for ammonia of 100 ug/m3 (annual average) is not being exceeded and submit a report on these results to the Southwest District.**

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 applicant of the amendment request/application and the parties listed below must be filed within 14 days of receipt of this amendment. Petitions filed by other persons must be filed within 14 days of the amendment issuance or within 14 days of their receipt of this amendment, whichever occurs first. 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;
(g) A statement of the relief sought by petitioner, stating precisely the action the 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 amendment. Persons whose substantial interests will be affected by any decision of the Department with regard to the request/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 amendment 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.

A copy of this letter must be filed with Permit No. AC 53-210886/PSD-FL-186 and shall become a condition of that permit.

Sincerely,

Howard L. Rhodes
Director
Division of Air Resources Management

HLR/WH/bjb

Attachment: Koogler's March 28, 1994, letter

cc: Bill Thomas, SWD
John Koogler, P.E.
Jewell Harper, EPA

CERTIFICATE OF SERVICE

The undersigned duly designated deputy clerk hereby certifies that this AMENDMENT and all copies were mailed by certified mail before the close of business on 4/19/94 to the listed persons.

Clerk Stamp

FILING AND ACKNOWLEDGMENT FILED, on this date, pursuant to 120.52(11), Florida Statutes, with the designated Department Clerk, receipt of which is hereby acknowledged.

Barbara J. Bartlett 4/19/94
Clerk Date

Farmland Hydro, L.P.

Green Bay Plant
County Road 640
Post Office Box 960
Bartow, Florida 33830
Tele.: 813 533-1141

C. Gene Meier
Administrator
Environmental Services

December 10, 1993

Mr. C. H. Fancy, P.E.
Chief, Bureau of Air Regulation
Department of Environmental Protection
2600 Blair Stone Road
Tallahassee, Florida 32399-2400

Re: Permit No. AC53-210886 PSD-FL-186

Dear Mr. Fancy,

Farmland Hydro, L.P. has a construction permit to modify the North Granulation Plant that will allow us to increase our production rates. We have encountered major start-up problems along with having to have some customized stack sampling equipment made because of height stack temperatures and excessive moisture in one of the stacks.

We requested, and you granted, a three (3) month extension on our current permit. This allowed us to complete the compliance testing on all of the stacks. This testing revealed several problems: (1) one with ammonia when we operated the plant to produce MAP, (2) there was a problem on one of the three tests with particulates on the dryer when producing MAP, and (3) there was a problem on the reactor granulator caused by excessive moisture and temperature variation that would not allow for an isokinetic state during sampling.

Mr. Merle Farris, Vice President, Operations, and I met with Mr. Bill Thomas and his staff on 12/07/93 to determine what course of action to pursue at this point. We suggested some engineering changes we could make that we believe will help overcome some of the problems. Mr. Thomas agreed and asked us to outline these changes and a timetable. The changes we plan to make are listed below:

1. Increase the fan rate on the BFL scrubber. This should help reduce the isokinetic problem with the R/G stack.

2. Raise the sprays in the BFL scrubber and also replace the BFL mist pads. This should help with the particulate problem.

3. Increase the size of the drain pipe on the R/G stack to reduce water entrainment.

4. Add 30% phosphoric acid to the dryer, screen an mill and cooler scrubber. This should reduce the ammonia loss when we produce DAP.

These changes should be made and re-testing should be completed by April 1, 1994. We are requesting our construction permit be extended an additional three (3) months (completed operation permit application must be submitted 90 days before construction permit expires). This would allow us time to evaluate our changes because we may have to request some modifications to our permit and would allow higher particulate and ammonia emissions. We may also have to address the isokinetic variation on R/G stack, but we hope the engineering changes will correct the problem.

Thank you for your considerations and if you have any questions please give me a call.

Sincerely,

Gene Meier/dr

C. Gene Meier
Administrator
Environmental Services

CGM:dr/cgm7693

cc: C. M. Farris
Bill Thomas
M. Hanks
G. Harper, EIP

These changes should be made and re-testing should be completed by April 1, 1994. We are requesting our construction permit be extended an additional three (3) months (completed operation permit application must be submitted 90 days before construction permit expires). This would allow us time to evaluate our changes because we may have to request some modifications to our permit and would allow higher particulate and ammonia emissions. We may also have to address the isokinetic variation on R/G stack, but we hope the engineering changes will correct the problem.

Thank you for your considerations and if you have any questions please give me a call.

Sincerely,

Gene Meier/dr

C. Gene Meier
Administrator
Environmental Services

CGM:dr/cgm7693

cc: C. M. Farris
Bill Thomas
~~T. Reynolds~~ T. Hanks
T. Harper, EPA

2/18/94
Gene Meier asked that the extension be for 4 months in case the on-going tests reveal a problem.

Linda

5.25 F0346 "FLORIDA DEPARTMENT OF — REMITTANCE ADVICE — 96626 — CHECK NUMBER 69996626

CO. BR. VENDOR NO. VENDOR NAME

DESCRIPTION	P.O.	VOUCHER	INVOICE NO.	INV. DATE	INVOICE AMOUNT	DISCOUNT TAKEN	AMOUNT PAID
010222		90439	12893	120893	50.00		50.00
001 50.00+ 50.00*+							
			TOTALS		50.00		50.00

-6310 (10/91)

Farmland Hydro, L.P.
P.O. Box 7305
Kansas City, Missouri 64116

Farmland Hydro, L.P.
P.O. Box 7305
Kansas City, Missouri 64116

CHECK NO. 69996626

001281

80-182
1019

16 25	F0346	12/10/93
CO. BR.	VEND. NO.	CHECK DATE

PAY EXACTLY $********50 DOLLARS AND 00 CENTS

CHECK AMOUNT $********50.00

VOID AFTER 180 DAYS

Boatmen's Bank of Marshall
Marshall, Missouri 65340

Farmland Hydro, L.P.

PAY TO THE ORDER OF

FLORIDA DEPARTMENT OF
ENVIROMNENTAL REGULATION
2600 BLAIR STONE RD
TALLAHASSEE FL 32399

[redacted]

Farmland Hydro, L.P.

Green Bay Plant
County Road 640
Post Office Box 960
Bartow, Florida 33830

CERTIFIED
P 271 140 495
MAIL

BARTOW FLA. OCT 10 '95

U.S. POSTAGE 2.52 METER 5112534

Mr. C. H. Fancy, P.E.
Chief, Bureau of Air Regulation
Department of Environmental Protection
2600 Blair Stone Road
Tallahassee, Fl. 32399-2400

Florida Department of
Environmental Protection

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

Lawton Chiles
Governor

Virginia B. Wetherell
Secretary

November 8, 1993

CERTIFIED MAIL - RETURN RECEIPT REQUESTED

Mr. C. M. Farris
Farmland Hydro, L.P.
P. O. Box 960
Bartow, Florida 33830

23938.1
PATS updated

Dear Mr. Farris:

Re: Amendment of Permit No. AC53-210886

The Department has reviewed Mr. Gene Meier's September 16, 1993, letter requesting that the referenced construction permit for Farmland's North GTSP/MAP/DAP Granulation Plant Modification be extended. The additional time is needed to complete the compliance tests. This request is acceptable and construction permit no. AC 53-210886 is extended from January 1, 1994, to April 1, 1994.

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 applicant of the amendment request/application and the parties listed below must be filed within 14 days of receipt of this amendment. Petitions filed by other persons must be filed within 14 days of the amendment issuance or within 14 days of their receipt of this amendment, whichever occurs first. 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;
(g) A statement of the relief sought by petitioner, stating precisely the action the 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 amendment. Persons whose substantial interests will be affected by any decision of the Department with regard to the request/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 amendment 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.

A copy of this letter must be filed with the referenced permit and shall become a part of that permit.

Sincerely,

Howard L. Rhodes

Howard L. Rhodes
Director
Division of Air Resources
Management

HLR/WH/bjb

Attachment: Farmland's September 16, 1993, letter

cc: Bill Thomas, SWD

P 872 562 496

Receipt for Certified Mail

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

UNITED STATES POSTAL SERVICE

Sent to: Mr. C. M. Farris	
Street and No.: P. O. Box 960	
P.O., State and ZIP Code: Bartow, Florida 33830	
Postage	$
Certified Fee	
Special Delivery Fee	
Restricted Delivery Fee	
Return Receipt Showing to Whom & Date Delivered	
Return Receipt Showing to Whom, Date, and Addressee's Address	
TOTAL Postage & Fees	$
Postmark or Date: Mailed: 11/10/93 AC53-210886	

PS Form **3800**, JUNE 1991

Is your RETURN ADDRESS completed on the reverse side?

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

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. C. M. Farris
Farmland Hydro, L.P.
P. O. Box 960
Bartow, Florida 33830

4a. Article Number
P 872 562 496

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

7. Date of Delivery
11-16-93

5. Signature (Addressee) Linda Thompson

6. Signature (Agent)

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

Thank you for using Return Receipt Service.

PS Form **3811**, December 1991 ☆U.S. GPO: 1992—323-402 **DOMESTIC RETURN RECEIPT**

Florida Department of
Environmental Protection

Memorandum

TO: Howard L. Rhodes

FROM: Clair Fancy

DATE: November 8, 1993

SUBJ: Amendment of Permit
Farmland Hydro, L.P.

Attached for your approval and signature is a letter that will extend the expiration date of a construction permit issued for the modification of a phosphate fertilizer granulation plant located near Bartow, Polk County, Florida. The additional time is needed to complete the compliance tests.

I recommend your approval and signature.

CHF/WH/bjb

Attachment

Florida Department of
Environmental Protection

Lawton Chiles
Governor

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

Virginia B. Wetherell
Secretary

September 27, 1993

0000714

CERTIFIED MAIL-RETURN RECEIPT

Mr. C. Gene Meier
Administrator, Environmental Services
Farmland Sydro, L.P.
Post Office Box 960
Bartow, Florida 33830

RECEIVED
DER - MAIL ROOM
1993 OCT -7 PM 12:41

Dear Mr. Meier:

RE: Farmland Hydro. L.P.
AC53-210886, PSD-FL-186
Request for Permit Extension

The Bureau of Air Regulation received your September 16, 1993, request for the above referenced project. On October 30, 1991, Rule 17-4.050(4)(o), F.A.C., was changed to require a $50 processing fee for a permit extention; therefore, we will not be able to take action on your request until the fee is received. If you have any questions, please call Patty Adams at (904)488-1344.

Sincerely,

Patricia G. Adams

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

CHF/pa

cc: Willard Hanks

Attached is Check For Processing Fee For Permit extention.

Gene Meier

P 230 524 412

Receipt for Certified Mail

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

Sent to Mr. C. Gene Meier	
Street and No. P. O. Box 960	
P.O., State and ZIP Code Bartow, Florida 33830	
Postage	$
Certified Fee	
Special Delivery Fee	
Restricted Delivery Fee	
Return Receipt Showing to Whom & Date Delivered	
Return Receipt Showing to Whom, Date, and Addressee's Address	
TOTAL Postage & Fees	$
Postmark or Date Mailed: 9/27/93 AC53-210886, PSD-FL-186	

PS Form **3800**, June 1991

Is your RETURN ADDRESS completed on the reverse side?

SENDER:
- Complete items 1 and/or 2 for additional services.
- Complete items 3, and 4a & b.
- Print your name and address on the reverse of this form so that we can return this card to you.
- Attach this form to the front of the mailpiece, or on the back if space does not permit.
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Mr. C. Gene Meier
Administrator, Environ. Sciences
Farmland Sydro, L.P.
Post Office Box 960
Bartow, Florida 33830

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6. Signature (Agent)

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Andy Nguyen
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FAX 542-6083
813-744-6100
542-6100 ext 342

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P.O. Box 7305
Kansas City, Missouri 64116

CHECK NO. 69995102

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Boatmen's Bank of Marshall
Marshall, Missouri 65340

Farmland Hydro, L.P.

PAY
TO THE
ORDER
OF

Florida Department of
Environmental Protection
2600 Blair Stone Rd
Tallahassee, FL 32399-2400

Farmland Hydro, L.P.

Green Bay Plant
County Road 640
Post Office Box 960
Bartow, Florida 33830
Tele.: 813 533-1141

C. Gene Meier
Administrator
Environmental Services

September 16, 1993

Mr. C. H. Fancy, P.E.
Chief, Bureau of Air Regulation
Department of Environmental Protection
2600 Blair Stone Road
Tallahassee, Florida 32399-2400

Re: Permit # AC53-210886 PSD-FL-186

Dear Mr. Fancy,

Farmland Hydro, L.P. has a construction permit to modify the north granulation plant that will allow us to increase our production rates. We have encountered some problems achieving the designed production rates, but have recently corrected this problem. We have also had some problems trying to determine the emissions rate from our stacks because of high stack temperature. Because of the high temperature and excessive moisture content we had to purchase some customized sampling equipment. This has caused some delays in our compliance testing schedule, therefore we are requesting a two (2) month extension on our construction permit AC53-210886.

Thank you for your consideration and if you have any questions please give me a call.

Sincerely,

Gene Meier

C. Gene Meier
Administrator,
Environmental Services

CGM:dr/cgm5493

cc: Bill Thomas - DEP
C. M. Farris
A. Hands

STATE OF FLORIDA
DEPARTMENT OF ENVIRONMENTAL REGULATION
NOTICE OF PERMIT

In the matter of an
Application for Permit by:

Mr. C. M. Farris
Farmland Hydro, L.P.
P. O. Box 960
Bartow, Florida 33830

DER File No. AC 53-210886
PSD-FL-186
Polk County

Enclosed is Permit Number AC 53-210886 (PSD-FL-186) for the modification of the North GTSP/MAP/DAP Granulation Plant at the Green Bay phosphate fertilizer chemical complex on County Road 640 West near Bartow, 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 permit 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 PERMIT and all copies were mailed before the close of business on 7-28-92 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) 7-28-92 (Date)

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

Final Determination

Farmland Hydro, L.P.
Bartow, Polk County, Florida

North GTSP/MAP/DAP Granulation Plant Modification
Permit No.: AC 53-210886 (PSD-FL-186)

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

July 24, 1992

Final Determination

The Technical Evaluation and Preliminary Determination for the permit to construct (modify) the North GTSP/MAP/DAP Granulation Plant at the Green Bay phosphate fertilizer chemical complex that is located on County Road 640 West near Bartow, Polk County, Florida, was distributed on June 17, 1992. The Notice of Intent to Issue was published in the Lakeland Ledger on June 22, 1992. Copies of the evaluation were available for public inspection at the Department's Tampa and Tallahassee offices.

No adverse comments were submitted on the Department's Intent to Issue the permit. The final action of the Department will be to issue construction permit AC 53-210886 (PSD-FL-186) as proposed in the Technical Evaluation and Preliminary Determination.

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:
Farmland Hydro, L.P.
P. O. Box 960
Bartow, Florida 33830

Permit Number: AC 53-210886
PSD-FL-186
Expiration Date: January 1, 1994*
County: Polk
Latitude/Longitude: 27°50'37"N
81°56'05"W
Project: North GTSP/MAP/DAP
Granulation Plant Modifications

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:

Authorization to modify the existing North GTSP/MAP/DAP** Granulation Plant to increase allowable production from 70 to 120 TPH MAP and from from 50 to 100 TPH DAP. The modifications include: installing a new reactor-granulator scrubber system followed by a new BFL scrubber system; a new cooler-chiller; a new venturi-cyclonic scrubber system; a new MAP pipe reactor and granulator; new screens and recycle conveyor; new smaller fans for the screens and mills; relocation of existing screens, elevators, elevator drive, and recycle conveyor in the screen system; new controls for the dryer scrubber and the screen/mill scrubber; relocation of the pipe reactor feed tank system; relocation and modification of the DAP reactor system; relocation of the north fines bin; relocation of the reclaim water tank system; removal of the existing GTSP scrubber systems; and other associated alterations. The plant will discharge air pollutants through the existing MAP/DAP main stack (114,000 acfm/88,000 dscfm/129 ft. elevation/7.5 ft. diameter/108°F) and the new reactor-granulator stack (49,700 acfm/27,000 dscfm/129 ft. elevation/5.5 ft. diameter/178°F). The North MAP/DAP Granulation Plant is located at Farmland Hydro, L.P.'s phosphate fertilizer chemical manufacturing facility on County Road 640 West, near Bartow, Polk County, Florida. The UTM coordinates of this facility are Zone 17, 409.5 km E and 3079.5 km N.

This permit will replace operation permit No. AC 53-171758 (40 TPA 53005329) when the permittee places any of the new/modified equipment authorized by this permit in service.

*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 plant placed in operation within a reasonable time.

**GTSP - Granular Triple Superphosphate
MAP - Monoammonium Phosphate
DAP - Diammonium Phosphate

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. Application received March 25, 1992.
2. Koogler & Associates' memo dated April 16, 1992.
3. Koogler & Associates' memo dated April 20, 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

GENERAL CONDITIONS:

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 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.

GENERAL CONDITIONS:

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 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.

GENERAL CONDITIONS:

13. This permit also constitutes:

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

14. The permittee shall comply with the following:

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

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

Construction Requirements

1. The modification of this facility shall reasonably conform to the plans and schedule submitted in the application.

2. The stack sampling facilities must comply with F.A.C. Rule 17-2.700(4).

3. The air pollution control systems shall be designed to meet the ammonia, fluorides, and particulate matter standards in this permit.

4. The plant shall be equipped with flow monitoring devices that comply with 40 CFR 60.223 (July 1, 1991) to continuously measure and record the phosphorus-bearing feed material to the process and the total pressure drop across each scrubbing systems.

Emission Restrictions

5. Emissions from the modified plant shall not exceed any of the limits listed in the following tables:

MAP Production

Pollutant		Main Stack	R/G Stack	Plant Total
Fluorides	lbs/TP_2O_5	--	--	0.06
	lbs/hr	1.87	1.87	3.74
	TPY	8.2	8.2	16.4
Particulate Matter	lbs/hr	15.9	6.6	22.5
	TPY	69.6	29.0	98.6
Ammonia	lbs/hr*	7.0	30.9	37.9
	TPY	30.7	135.5	166.2

*24-hour average

SPECIFIC CONDITIONS:

DAP Production				
Pollutant		Main Stack	R/G Stack	Plant Total
Fluorides	lbs/TP$_2$O$_5$	--	--	0.06
	lbs/hr	1.60	1.16	2.76
	TPY	7.0	5.1	12.1
Particulate Matter	lbs/hr	10.6	5.5	16.1
	TPY	46.5	24.2	70.7
Ammonia	lbs/hr*	5.2	41.6	46.7
	TPY	22.7	182.0	204.7

*24-hour average

6. Visible emissions from any part of this plant shall not exceed 20% opacity.

7. No person shall cause, suffer, allow or permit the discharge of air pollutants which cause or contribute to an objectionable odor (F.A.C. Rule 17-2.620).

Operation Requirements

8. Production shall not exceed 120 TPH MAP and 100 TPH DAP.

9. Phosphoric acid feed shall not exceed 62.4 TPH P_2O_5 during MAP manufacture and 46.0 TPH P_2O_5 during DAP manufacture. Consumption of sulfuric and nitric acids shall be reported in the AOR.

10. Ammonia feed shall not exceed 16.1 TPH during MAP manufacture and 21.9 TPH during DAP manufacture.

11. The system shall be properly operated and maintained (F.A.C. Rule 17-2.210(2)). No person shall circumvent any pollution control device or allow the emissions of air pollutants without the applicable air pollution control device operating properly (F.A.C. Rule 17-2.240). Pressure drop across the R-G venturi scrubbers shall be at least 12 inches of water.

12. Any process equipment, vessel, seal tank, duct, etc., having the potential to emit air pollutants shall be sealed or covered during plant operation to minimize fugitive emissions.

SPECIFIC CONDITIONS:

13. This plant shall not manufacture GTSP.

14. The plant may operate continuously, 8760 hrs/yr.

15. Heat input to the dryer shall not exceed 50 MMBtu/hr. Only natural gas (max. 0.05 MMCF/hr) shall be burned in the dryer; except when the natural gas supply to the plant is curtailed, then No. 2 fuel oil with a maximum of 0.5% sulfur may be burned for up to 400 hrs during any 12 month period.

16. Lignosulphonates (lignin) shall be used when needed to control unconfined dust emissions when handling MAP and DAP product. Defoamers may be added to the 28% P_2O_5 scrubbing liquid.

17. Reasonable precautions for minimizing fugitive emissions of ammonia shall include routine inspection of vessels, piping, and hoses; placing scrubbers in operation prior to feeding ammonia to the process; and prompt repair of any leaks.

Testing Requirements

18. This plant shall be tested at a production rate of 108 to 120 TPH MAP and 90 to 100 TPH DAP within 60 days of commercial production of these products by the modified plant and annually thereafter for particulate matter, fluorides, and visible emissions. It shall also be tested for ammonia on achieving commerical production and prior to the renewal of any permit to operate issued for the modified plant (test every 5 years). The annual test during MAP and DAP production will be waived if that product is not manufactured during that year. All compliance tests shall meet the requirements listed in F.A.C. Rule 17-2.700. The unit shall not operate above the maximum permitted MAP or DAP production rates; except during the time of the compliance tests.

19. Test methods to determine compliance are EPA Method 5 for particulate matter, EPA Method 9 for visible emissions, and EPA 13A or 13B for fluorides. These methods are described in 40 CFR 60, Appendix A (July 1, 1991). Ammonia emissions shall be determined using a variation of the EPA Draft Method, using large impingers with 100 mls of 1.0 normal sulfuric acid in the first three impingers, the last impinger dry and a probe with an external design similar to that used in EPA Method 16, or any other test method agreed to by the Department.

Administrative Requirements

20. The Department's Southwest District shall be notified in

SPECIFIC CONDITIONS:

writing a minimum of 15 days in advance of any compliance test to be conducted on this source. The permittee shall comply with the notification and recordkeeping requirements of 40 CFR 60.7 (July 1, 1991).

21. The permittee shall maintain records showing the plant's operating time, phosphoric acid (P_2O_5), and ammonia consumption; MAP and DAP production (TPY); and scrubber pressure drops for a minimum of 2 years.

22. The permittee shall submit annual operation reports (AOR) that include a summary of the consumption of phosphoric acid and ammonia, the production of MAP and DAP, the fuel consumption, and a complete test report (F.A.C. Rule 17-2.700(7)) which includes the production and operation parameters (scrubber pressure drops) during the test and a report of any recent maintenance on the scrubbers.

23. Prior to placing the modified plant in service, the permittee shall surrender the permits for the rock unloading section (AO 53-151296), the PAD 1 Ball Mill (AO 53-157062), and the PAD 2 Ball Mill (AO 53-157064) to the Southwest District.

24. 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).

25. 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. 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 27 day
of July, 1992

**STATE OF FLORIDA DEPARTMENT
OF ENVIRONMENTAL REGULATION**

Carol M. Browner
Secretary

Best Available Control Technology (BACT) Determination
Farmland Hydro, L.P.
Polk County
MAP/DAP Granulation Plant

The applicant proposes to modify their existing MAP/DAP granulation plant and increase production to 100 TPH diammonium phosphate (DAP) and 120 TPH monammonium phosphate (MAP). This plant is located at their phosphate fertilizer chemical manufacturing facility on County Road 640 West near Bartow, Polk County, Florida.

The proposed project will result in a significant increase in the emissions of fluorides and 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. 17-2.500(5)(c).

Date of Receipt of a BACT Application

March 25, 1992

Control Technology

The proposed reactor-granulator scrubbing system is a "double mole" three stage scrubber using 10% and 28% P_2O_5 acid as the scrubbing liquids. The second stage is a low pressure (12" water) venturi scrubber. Each stage is followed by a cyclonic separator. This system is followed by a BFL scrubber that uses recirculated condensate and process water as the final scrubbing liquid. The gases are discharged through a new stack that served only this scrubber system.

The existing dryer scrubber system consists of a down flow scrubber using 28% P_2O_5 phosphoric acid scrubber liquid followed by a cyclonic separator. The gases from this separator pass through a cross-flow scrubber that is shared with the screen and mill (S/M) scrubber. The cross-flow scrubber uses recycled process water as the scrubber medium. The gases are discharged through the existing plant stack to the atmosphere. Except for new controls and fans, this scrubber system is not being modified.

The description of the S/M scrubber system is identical to the above one for the dryer scrubber system.

The product cooler system will cool air by the evaporation of ammonia which is then used to cool the product. (The condensate from cooling the air is used in the BFL scrubber.) The air leaving the product cooler passes through a venturi scrubber that uses 10% P_2O_5 phosphoric acid as the scrubber liquid and through a cyclonic separator before being mixed with the gases leaving the cross-flow scrubber and discharged through the existing plant stack to the atmosphere.

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 Determination by DER

The Department accepts the applicant's recommendation for BACT. The following table summarizes the fluoride emission standards for the modified MAP/DAP plant.

	Fluoride Emissions					
	DAP Production (46 TPH P_2O_5)			MAP Production (62.4 TPH P2O5)		
Control	lbs/hr	TPY	lbs/TP$_2O_5$	lbs/hr	TPY	lbs/TP$_2O_5$
R-G Scrubber System	1.16	5.08	0.025	1.87	8.19	0.030
Cross-Flow Scrubber System (Dryer plus S/M scrubbing)	0.66	2.89	0.014	0.66	2.89	0.011
Product Cooler Scrubbing System	0.94	4.12	0.020	1.21	5.30	0.03
TOTAL	2.76	12.09	0.06	3.74	16.38	0.06

BACT Determination Rationale

DER's BACT determination is the same as proposed by the applicant, earlier BACT determinations for similar processes in Florida, and the new source performance standards for diammonium phosphate plants, 40 CFR 60, Subpart V. The MAP/DAP plants emit both fluoride and ammonia -- along with particulate matter. Most first stage scrubbers in these plants use phosphoric acid scrubbing liquid to recover ammonia. Ammonia is a raw material for the plant and a generally unregulated air pollutant that has the potential to cause objectionable odors, even in low ambient air concentrations. Fluorides are evolved from the phosphoric acid in the scrubber. This plant modification uses a lower strength acid (10% P_2O_5 instead of the more common 28% acid) in the first stage of some scrubbers. This lowers the amount of fluoride evolved. Final fluoride removal occurs in a scrubber using recycle process water. The recycle process water contains traces of fluoride (0.45%) that limit the amount of fluoride that can be readily adsorbed from the gas stream. Fluosilicic acid production at this facility will also help reduce the quantity of fluorides getting into the recycle plant process water which will lower the fluoride emissions. Fresh or treated water in the final scrubber would lower fluoride emissions. However, because of the large consumption of fresh water by the phosphate industry in Florida which is concentrated near this plant, the companies are being forced to lower the quantity of fresh water used. Using treated water does not appear cost effective as the proposed system is estimated to achieve over 99.9% fluoride removal while also providing reasonable control of ammonia emissions.

Environmental Impact Analysis

The actual ambient air impact of the increased fluorides emissions is expected to be approximately:

Averaging Time (hrs)	Increase Impact ug/m^3
8	6.7
24	3.4
Annual	0.2

The Department and U. S. Environmental Protection Agency (EPA) do not have an ambient air standard for fluorides. Fluorides are classified by EPA as a welfare-related pollutant (no demonstrated effect on public health).

Conclusion

There will be no significant change in the ambient effects of fluorides on the soils and vegetation as a result of the increased fluoride emissions resulting from the modification of this plant.

Details of the Analysis May be Obtained by Contacting:

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

Recommended by:

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

July 24 1992
Date

Approved by:

Carol M. Browner, Secretary
Dept. of Environmental Regulation

July 27 1992
Date

P 710 058 525

Certified Mail Receipt

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TOTAL Postage & Fees	$
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PS Form **3800**, June 1990

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1. ☐ Addressee's Address
2. ☐ Restricted Delivery

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3. Article Addressed to:

C.M. Farris
Farmland Hydro, L.P.
PO Box 960
Bartow, Fl 33830

4a. Article Number

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

7. Date of Delivery JUL 30 1992

5. Signature (Addressee) Linda Thompson

6. Signature (Agent)

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

PS Form **3811**, November 1990 ☆U.S. GPO: 1991—287-068 **DOMESTIC RETURN RECEIPT**

State of Florida
DEPARTMENT OF ENVIRONMENTAL REGULATION

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Interoffice Memorandum

TO: Carol M. Browner

FROM: Howard L. Rhodes

DATE: July 24, 1992

SUBJ: Approval of Construction Permit AC 53-210886; PSD-FL-186
Farmland Hydro, L.P.

Attached for your approval and signature is a permit prepared by the Bureau of Air Regulation which will authorize Farmland Hydro, L.P. to modify and increase production at their existing ammonium phosphate fertilizer plant near Bartow, Polk County, Florida. The higher production will increase particulate matter and fluorides emissions.

No negative comments on the Department's intent to issue this permit were submitted.

I recommend your approval and signature.

HLR/WH/plm

Attachments

Mail to: RACT/BACT/LAER Clearinghouse
ESD, OAQPS, MD-13
RTP, N.C. 27711

RACT/BACT/LAER DETERMINATION INPUT SUMMARY

7.6
Source Code

JULY 27, 1992
Date of this Report

Source Type/Size: FERTILIZER PLANTS (AMMONIUM PHOSPHATE) 100.0 TPH DAP OR 120 TPH MAP

Company Name/Site Location: FARMLAND HYDRO, L.P., CO. RD. 640, P.O. BOX 960, BARTOW, FL 33830

Determination is *RACT/(BACT)/LAER* for a *NEW/(MODIFIED)* source: (Circle the appropriate choices)

Date of Permit Issuance: JULY 28, 1992

Permit No.: AC53-210886/PSD-FL-186

Date of Estimated Start-up: SEPTEMBER 1, 1993

Determination Made By (agency): FL DEPT ENVIRO REG

WILLARD HANKS (Person Directly Knowledgeable About Permit)

904/488-1344 (Phone)

AIRS Facility Number: _____

Permit Parameters: (list all processes subject to this permit)	Maximum Design Capacity	Pollutant Reg.*	Emission limit(s)	Reg. require. assoc. w/limit **	Control Equipment or Process Modification Description	Effi-ciency %	Top-Down BACT Information: Number of control options examined	Top-Down BACT Information: Rank of control option selected	Top-Down BACT Information: Cost in $/ton of option selected
DAP	100	F	0.06 LBS/T P_2O_5	B	MULTI STAGE SCRUBBER	99.9			
MAP	120	F	0.06 LBS/T P_2O_5	B	MULTI STAGE SCRUBBER	99.9			

Notes: COMPANY USES MULTI STAGE SCRUBBERS. SCRUBBER LIQUIDS ARE 10% P_2O_5 ACID, 28% P_2O_5 ACID, AND PROCESS WATER CONTAINING 0.45% F. SIGNIFICANT F EMISSION REDUCTION COULD HAVE BEEN ACHIEVED BY USING TREATED WATER IN FINAL STAGE SCRUBBER AT A COST OF $77,110/TON F REMOVED.

**Use the following abbreviations wherever possible: PM = particulate matter, SO_2 = sulfur dioxide, NO_x = nitrogen oxides, CO = carbon monoxide, VOC = volatile organic compounds, VE = visible emission, TRS = total reduced sulfur, F = fluorine, Be = beryllium, H_2S = hydrogen sulfide, Hg = mercury, VC = vinyl chloride.*

***Please use the following abbreviations: TDB = TOP-DOWN BACT, B = BACT, ONSR = OTHER NEW SOURCE REVIEW (Other BACT not required by PSD regulations), L = LAER, N = NSPS, H = NESHAP, A = NAAQS or PSD increment constraints, S = SIP, R = RACT, U = Unregulated.*

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION IV

345 COURTLAND STREET, N.E.
ATLANTA, GEORGIA 30365

JUL 23 1992

4APT-AEB

Mr. Howard L. Rhodes, Interim Director
Air Resources Management Division
Florida Department of Environmental Regulation
Twin Towers Office Building
2600 Blair Stone Road
Tallahassee, Florida 32399-2400

RE: Farmland Hydro, L.P., Bartow, Florida (PSD-FL-186)

Dear Mr. Rhodes:

This is to acknowledge receipt of an application for a Prevention of Significant Deterioration (PSD) permit for the above referenced facility by your letter dated March 27, 1992. Farmland Hydro proposes to increase both the granular monoammonium phosphate (MAP) and diammonium phosphate (DAP) production rates at the existing North plant from 70 to 120 TPH, and from 50 to 100 TPH, respectively. North plant process equipment will be modified to achieve the increased production rates. Granular triple super phosphate (GTSP) fertilizer will also no longer be produced at the North plant.

Additional information regarding the estimated overall wet scrubber system fluoride removal efficiency was received by fax on June 10, 1992, from Mr. Willard Hanks of your staff. Additional information clarifying the scrubber combinations selected for various process equipment, was received by fax on June 12, 1992, from Mr. Pradeep Raval of Koogler & Associates Environmental Services. Details of both dual mole and crossflow scrubber system operation, as well as a scrubbing water neutralization system cost analysis, were also included in the additional information. As discussed between Mr. Willard Hanks of your staff and Mr. Stan Kukier of my staff on June 10, and June 15, 1992, we have reviewed the package as submitted, including the additional information requested, and have no adverse comments.

We agree that the wet scrubber system as proposed by Farmland Hydro is BACT for control of modified North plant fluoride emissions. Multi-stage combinations of cyclonic, venturi, dual mole, and counter current crossflow tail gas scrubbers will be used to minimize reactor, granulator, dryer, product cooler, and various solids handling equipment fluoride emissions. Phosphoric acid scrubbing solution of varying concentrations and mole ratios will also be used to reduce fluoride emissions. Water vapor condensing in the process ammonia vaporizer/heat exchanger unit assists in scrubbing fluoride

compounds from the reactor/granulator exhaust gas stream exiting the dual mole scrubber system.

The Farmland Hydro, L.P. chemical fertilizer facility will be subject to the requirements of 40 CFR § 60.222, Subpart V - Standards of Performance for the Phosphate Fertilizer Industry: Diammonium Phosphate Plants.

Thank you for the opportunity to review and comment on this package. If you have any questions or comments, please contact Mr. Stan Kukier of my staff at (404) 347-5014.

Sincerely yours,

Jewell A. Harper, Chief
Air Enforcement Branch
Air, Pesticides, and Toxics
Management Division

cc: S!

Farmland Hydro, L.P.

Green Bay Plant
County Road 640
Post Office Box 960
Bartow, Florida 33830
Tele.: 813 533-1141

Charles W. Jenkins
Environmental Coordinator

July 17, 1992

Ms. Patty Adams
State of Florida Department
of Environmental Regulation
2600 Blair Stone Road
Tallahassee, Florida 32301

Re: Affidavit of Publication for DER File No. AC53-210886

Dear Patty,

Please find enclosed the original Affidavit of Publication concerning the Notice of Intent to Issue a Construction Permit to Farmland Hydro, L.P.

Should there be any problem or questions please contact me at (813) 533-1141 ext. 384.

Very truly yours,

Charles Jenkins
Environmental Coordinator

CWJ:dr/cwj5892

Enclosure

cc: T. Hanks
C. Holladay
B. Thomas, SW Dist.
J. Harper, EPA
C. Shaver, NPS

AFFIDAVIT OF PUBLICATION

THE LEDGER
Lakeland, Polk County, Florida

Case No .....

STATE OF FLORIDA)
COUNTY OF POLK)

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

Notice of Intent

in the matter of

Construction Permit

in the

Court, was published in said newspaper in the issues of

June 22;

1992

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

Signed ..... Controller

Sworn to and subscribed before me this 22nd day of June A.D. 19 1992

BILLIE MORLAN
MY COMMISSION # CC 191354
EXPIRES: April 6, 1996
Bonded Thru Notary Public Underwriters

Billie Morlan
Notary Public

My Commission Expires .....

Farmland Hydro, L.P.
Acct #10643

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

The Department of Environmental Regulati gives notice of its intent to issue a constructi permit (AC 53-210886/PSD-FL-186) to Farmla Hydro, L.P., P. O. Box 960, Bartow, Florida 338 The permit will allow the applicant to modify a increase production of the North GTSP/MAP/D Granulation Plant, located on County Road 6 West near Bartow, Polk County, Florida. The *towable emissions will be 22.5 lbs/hr (98.6 TPY)* particulate matter, 3.7 lbs/hr (16.4 TPY) fluorid and 46.7 lbs/hr (204.7 TPY) ammonia. The p posed project is subject to Prevention of Sign cant Deterioration (PSD) regulations for fluorid A determination of Best Available Control Tec nology (BACT) was required for fluorides. The are no PSD increments or ambient air qual standards for fluorides. These emissions will n *cause a violation of any ambient air standard* Prevention of Significant Deterioration (PSD) crement. The Department is issuing this intent issue for the reasons stated in the Technical Ev uation and Preliminary Determination.

A person whose substantial interests are fected by the Department's proposed perm ting decision may petition for an administrati proceeding (hearing) in accordance with Se *tion* 120.57 Florida Statutes. The petition mu contain the information set forth below and mu be filed (received) in the Office of Gene Counsel of the Department at 2600 Blair Sto Road, Tallahassee, Florida 32399-2400, within days of publication of this notice. Petitioner sh mail a copy of the petition to the applicant the address indicated above at the time of filin Failure to file a petition within this time perio *shall constitute a waiver of any right such perso* may have to request an administrative determ nation (hearing) under Section 120.57, Florid Statutes.

The Petition shall contain the following inf mation; (a) The name, address, and telephon number of each petitioner, the applicant name and address, the Department Permit Fi Number and the county in which the project proposed; (b) A *statement of how and whe* each petitioner received notice of the Depa ment's action or proposed action; (c) A stat ment of how each petitioner's substantial inte ests are affected by the Department's action proposed action; (d) A statement of the materi facts disputed by Petitioner, if any; (e) A stat ment of facts which petitioner contends warra reversal or modification of the Department's a tion or proposed action; (f) A statement of whi rules or statutes petitioner contends require r versal or modification of the Department's a tion or proposed action; and (g) A statement *the relief sought* by petitioner, stating precise the action petitioner wants the Department t take with respect to the Department's action proposed action.

If a petition is filed, the administrative hearin process is designed to formulate agency actio Accordingly, the Department's final action ma be different from the position taken by it in th Notice. Persons whose substantial interests w *be affected by any decision of the Departme* with regard to the application have the right t petition to become a party to the proceedin The petition must conform to the requiremen *specified above and be filed (received)* withi 14 days of publication of this notice in the Offic of General Counsel at the above address of th Department. Failure to petition within the a lowed time frame constitutes a waiver of an right such person has to request a hearing unde Section 120.57, F.S., and to participate as a pa ty to this proceeding. Any subsequent interve tion will only be at the approval of the presidin officer upon motion filed pursuant to Rule 2 5.207, F.A.C.

The application is available for public inspec tion during normal business hours, 8:00 a.m. t 5:00 p.m., Monday through Friday, except lega 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 o the proposed action to Mr. Preston Lewis at th *Department's* Tallahassee address. All com ments received within 30 days of the publicatio of this notice will be considered in the Depar ment's final determination.

Further, a public hearing can be requested b any person. Such requests must be submitte within 30 days of this notice.
M-538 — 6-22; 1992

M 538

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION IV

345 COURTLAND STREET, N.E.
ATLANTA, GEORGIA 30365

4APT-AEB JUL 15 1992

RECEIVED

JUL 20 1992

Bureau of
Air Regulation

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

RE: Farmland Hydro, L.P., Bartow, Florida (PSD-FL-186)

Dear Mr. Fancy:

This is to acknowledge receipt of your preliminary determination and draft permit for the proposed modification to the above referenced facility by your letter dated June 16, 1992. Farmland Hydro proposes to increase both the granular monoammonium phosphate (MAP) and diammonium phosphate (DAP) production rates at the existing North plant from 70 to 120 TPH, and from 50 to 100 TPH, respectively. North plant process equipment will be modified to achieve the increased production rates. Granular triple super phosphate (GTSP) fertilizer will also no longer be produced at the North plant.

As discussed between Mr. Willard Hanks of your staff and Mr. Stan Kukier of my staff on July 8, 1992, we have reviewed the package as submitted and have no adverse comments.

We concur with your determination of BACT for control of modified North plant fluoride emissions. A wet scrubber system composed of multi-stage combinations of cyclonic, venturi, dual mole, and counter current crossflow tail gas scrubbers will be used to minimize reactor, granulator, dryer, product cooler, and various solids handling equipment fluoride emissions. Phosphoric acid scrubbing solution of varying concentrations and mole ratios will also be used to reduce fluoride emissions. Water vapor condensing in the process ammonia vaporizer/heat exchanger unit assists in scrubbing fluoride compounds from the reactor/granulator exhaust gas stream exiting the dual mole scrubber system.

The Farmland Hydro, L.P. chemical fertilizer facility will be subject to the requirements of 40 CFR Part 60, Subpart V - Standards of Performance for the Phosphate Fertilizer Industry: Diammonium Phosphate Plants.

Thank you for the opportunity to review and comment on this package. If you have any questions or comments, please contact Mr. Stan Kukier of my staff at (404) 347-5014.

Sincerely yours,

Reginald S. Barrino for

Jewell A. Harper, Chief
Air Enforcement Branch
Air, Pesticides, and Toxics
Management Division

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY - REGION IV
AIR, PESTICIDES & TOXICS MANAGEMENT DIVISION
345 Courtland Street, N. E.
Atlanta, Georgia 30365
Fax Number: FTS 347 -5207 or 404/347-5207

FACSIMILE TRANSMISSION SHEET

DATE: 7/15/92 NUMBER OF PAGES (Including this sheet) 3

(Preparer must number all pages)

TO: Clair H. Fancy PHONE: _____

ADDRESS: FDER FAX NUMBER: 904/922-6979

FROM: Stan Kukier PHONE: 404/347-5014

EPA - Region III

If the following pages are received poorly, please call _____

at FTS 347 -_____ or 404/347-_____.

SPECIAL INSTRUCTIONS FOR RECEIVER: Farmland Hydro, L.P. - Preliminary Determination Letter

CC: K. Hanks
C. Holladay
B. Thomas, SW Dist.
G. Thauer, NPS
Jeff Koerner, KBN
CH/F/PL

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION IV

345 COURTLAND STREET, N.E.
ATLANTA, GEORGIA 30365

4APT-AEB

Mr. Howard L. Rhodes, Interim Director
Air Resources Management Division
Florida Department of Environmental
Regulation
Twin Towers Office Building
2600 Blair Stone Road
Tallahassee, Florida 32399-2400

RE: Farmland Hydro, L.P., Bartow, Florida (PSD-FL-186)

Dear Mr. Rhodes:

This is to acknowledge receipt of an application for a Prevention of Significant Deterioration (PSD) permit for the above referenced facility by your letter dated March 27, 1992. Farmland Hydro proposes to increase both the granular monoammonium phosphate (MAP) and diammonium phosphate (DAP) production rates at the existing North plant from 70 to 120 TPH, and from 50 to 100 TPH, respectively. North plant process equipment will be modified to achieve the increased production rates. Granular triple super phosphate (GTSP) fertilizer will also no longer be produced at the North plant.

Additional information regarding the estimated overall wet scrubber system fluoride removal efficiency was received by fax on June 10, 1992, from Mr. Willard Hanks of your staff. Additional information clarifying the scrubber combinations selected for various process equipment, was received by fax on June 12, 1992, from Mr. Pradeep Raval of Koogler & Associates Environmental Services. Details of both dual mole and crossflow scrubber system operation, as well as a scrubbing water neutralization system cost analysis, were also included in the additional information. As discussed between Mr. Willard Hanks of your staff and Mr. Stan Kukier of my staff on June 10, and June 15, 1992, we have reviewed the package as submitted, including the additional information requested, and have no adverse comments.

We agree that the wet scrubber system as proposed by Farmland Hydro is BACT for control of modified North plant fluoride emissions. Multi-stage combinations of cyclonic, venturi, dual mole, and counter current crossflow tail gas scrubbers will be used to minimize reactor, granulator, dryer, product cooler, and various solids handling equipment fluoride emissions. Phosphoric acid scrubbing solution of varying concentrations and mole ratios will also be used to reduce fluoride emissions. Water vapor condensing in the process ammonia vaporizer/heat exchanger unit assists in scrubbing fluoride

compounds from the reactor/granulator exhaust gas stream exiting the dual mole scrubber system.

The Farmland Hydro, L.P. chemical fertilizer facility will be subject to the requirements of 40 CFR § 60.222, Subpart V - Standards of Performance for the Phosphate Fertilizer Industry: Diammonium Phosphate Plants.

Thank you for the opportunity to review and comment on this package. If you have any questions or comments, please contact Mr. Stan Kukier of my staff at (404) 347-5014.

Sincerely yours,

Jewell A. Harper, Chief
Air Enforcement Branch
Air, Pesticides, and Toxics
Management Division

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

KA 123-92-01

June 17, 1992

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

Subject: Farmland Hydro, LP
MAP/DAP North Plant Permit Application

Dear Mr. Hanks:

Attached is information provided to Mr. Stan Kukier of EPA Region IV regarding the above project. This information will also serve to update your file on the project.

If you have any questions, please do not hesitate to call me.

Very truly yours,

KOOGLER & ASSOCIATES

Pradeep A. Raval

PAR:wa
Enc.

Willard's copy of submittal to EPA.

Faxed to Stan Kutier, EPA. PR 6/11/92

MEMORANDUM

TO: Mr. Willard Hanks
FDER, Tallahassee

FROM: Pradeep Raval

DATE: April 20, 1992

SUBJECT: Additional Information on Farmland Hydro, L.P.
North Plant MAP/DAP Modification

This is in response to your request to identify the overall fluoride control in the proposed MAP/DAP North Plant project.

The fluorides in the feed to the North plant under DAP and MAP production mode will be 114.54 and 91.65 pounds fluoride/per ton of P_2O_5, respectively.

Based on the proposed fluoride emission limit of 0.06 pound per ton of P_2O_5, the overall process control efficiency can be estimated as follows:

MAP Mode:

Fluoride Control Eff. = (91.65 - 0.06)/91.65 x 100

= 99.9%

DAP Mode:

Fluoride Control Eff. = (114.65 - 0.06)/114.65 x 100

= 99.9%

It is anticipated that this response will satisfy the only remaining question you had on the proposed project.

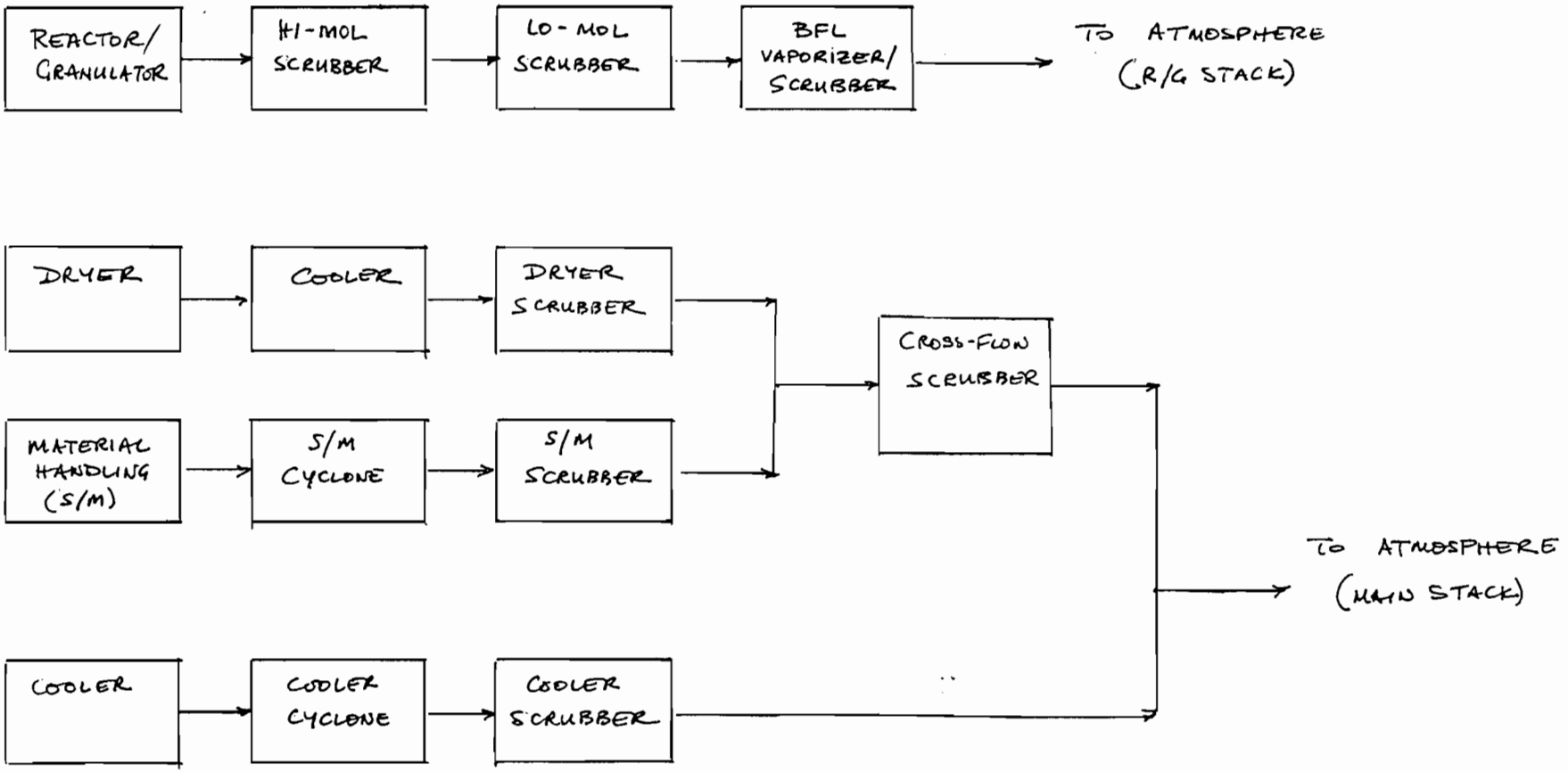
If you have any additional questions, please do not hesitate to give me a call.

PROCESS FLOW - CONTROLS (APC)

FARMLAND HYDRO, L.P.

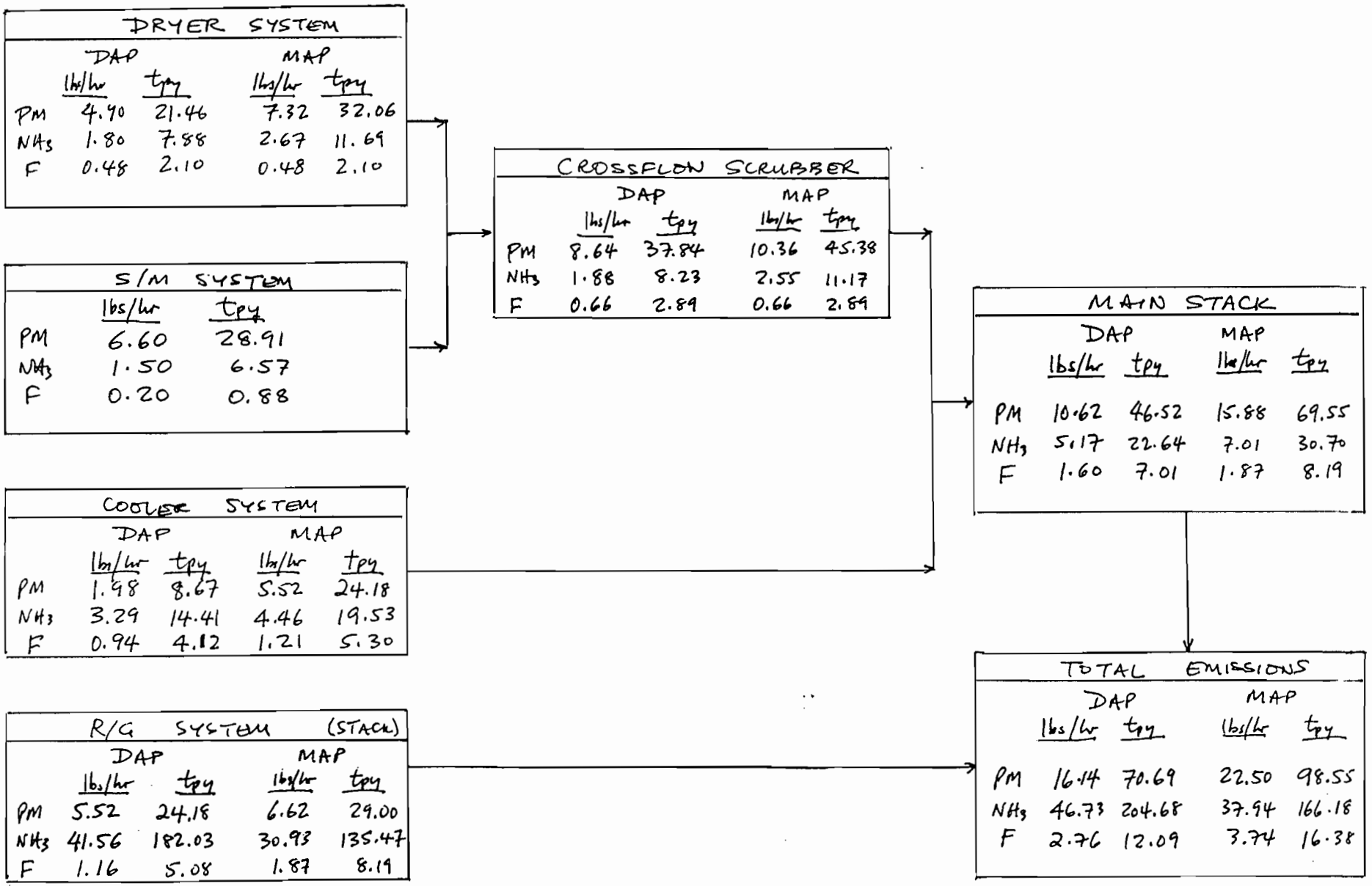
MAP/DAP NORTH PLANT

(PROPOSED LAYOUT)



EMISSION LEVELS

FARMLAND HYDRO, L.P
MAP/DAP NORTH PLANT
(PROPOSED LAYOUT)



Concerning Fluoride Scrubbing

During the granulation of wet phosphoric acid into either DAP or MAP using the conventional TVA rotary granulator with preneutralizer process, the neutrilization, granulation, crushing, screening, and transport of dry product does not liberate large quantities of fluoride. The gas streams form the granulation equipment contain mostly water vapor, gaseous ammonia and dust which later have to be scrubbed before discharge to the atmosphere. Low strength phosphoric acid (about 28% P_2O_5 by weight) is used to capture the ammonia and dust and return it to the granulation process. Fluoride, in various forms is, liberated from the acid into the air stream in the acid scrubbing stage. This fact causes a problem in determining fluoride scrubbing efficiency; that is, compared to the normal perception of efficiency defined as the removal of a percentage of a pollutant entering the scrubbing system. This fluoride liberation (release) is in proportion to the fluoride vapor pressure developed in the scrubbing liquor and the vapor pressure is influenced by two factors; temperature of the scrubbing liquor, and concentration of available fluoride. Fluoride control therefore, is achieved by reducing the fluoride vapor pressure in the scrubber system.

One way to reduce the vapor pressure of fluoride in the scrubber is to increase the ammonia to phosphoric acid mole ratio of the scrubbing acid or in other words to increase the pH of the scrubbing acid. The increased ammonia tends to hold the fluoride in combination with other elements in the acid therefore, not allowing it to be liberated into the air stream. A second method of reducing the fluoride vapor pressure is to lower the concentration of fluoride in the acid scrubbing liquor. 28% P_2O_5 phosphoric acid typically contains from 2.0 to 2.5% fluoride, therefore, lowering the strength to about 10% by diluting it with pond water with a fluoride content of about 0.45%, results in a final concentration of about 1.0% fluoride.

The Cooler, Dryer and Screens & Mills (S/M) scrubbers will all be modified to utilize low strength (about 10% P_2O_5) acid taking advantage of the second method of fluoride release control. These scrubbers collect mostly product dust which has a high mole ratio (1 for MAP and 2 for DAP). When this dust is captured in the weak acid, it tends to quickly increase the mole ratio of the weak scrubbing liquor and as some gaseous ammonia is released in the dryer, the weak scrubbing liquor will have mole ratios in the order of 1.0 to 1.5. This increased mole ratio raises the pH of the weak acid scurubbing liquor thus, taking advantage of the first fluoride vapor pressure reduction method as well. A 0.5 or better mole ratio is considered the optimum for reduction of fluoride release.

The dual mole scrubber system is designed to reduce fluoride emissions by increasing the mole ratio of the scrubbing liquor. Under normal operation the first stage would have a mole ratio of about 1.4 while the second stage would be about 0.5. The end result is that the Reactor/Granulator (R/G) and the above three scrubbers liberate less fluoride containing compounds into the air stream than conventional 28% P_2O_5 acid scrubbers.

The Dryer and S/M scrubbers are followed by a counter current cross-flow scrubber. This scrubber uses the complex pond water as a scrubbing medium. The fluoride concentration in the Farmland Hydro pond water runs a maximum of about 0.45% which is lower than most phosphate fertilizer manufacturers because we recover fluorine in our evaporators and sell it as a by-product. By comparison, it is not unusual to see fluoride values in other manufacturers' pond water of over 1.0%. Large amounts of pond water (about 1,200 gpm) are used in this scrubber and therefore the exiting air contains about as low a concentration of fluoride as can be achieved with pond water even though the actual scrubbing efficiency works out to be less than 4%. Expected emissions would be 0.014 lb/ton P_2O_5 for DAP and 0.011 for MAP from the cross-flow scrubber.

The cooler scrubber is shown without tail end scrubbing and this could be done with pond water as the scrubbing liquor for a capital cost of about $500,000.00 amortized over 20 years of life plus about $2,000.00 per year power cost and $5,000.00 per year maintenance for a yearly cost of $65,730.00. Assuming the same efficiency as the BFL vaporizer of 75.5%, this would result in a reduction from a maximum of 5.3 tons per year of fluoride to a maximum of 1.3 tpy. The cost of this reduction would be $16,433.00 per ton.

It has been proposed that neutralization of the scrubbing water with lime (calcium oxide) would cause the fluoride in the water to form calcium-fluoride (CaF_2) which precipitates and produces a low fluoride tail gas scrubbing liquor. Test results show that neutralization to a pH of about 4 will result the lowest practical achievable fluoride concentration of about 300 to 500 ppm. If large amounts of water are used (in the order of 15 to 20 gallons per 1,000 cubic feet of air) we could obtain exhaust temperatures of about 120 °F and could achieve about 95% fluoride

scrubbing efficiency. This would result in a reduction of maximum fluoride emissions per year of 15.6 tons.

An appropriate system for the liming scrubbing water would require a separate granulation cooling pond of approximately 30 acres at a nominal 5 foot depth for a total of 45 million gallons. The scrubbing requirements would be about 3,000 gallons per minute (gpm). Pumping requirements are assumed to be 3,000 gpm at 50 feet of head requiring 58 horsepower at 65% pumping efficiency. At $0.05 per kwh, we would consume about $22,400 per year pumping cost. A lined 30 acre pond would cost about $4,500,000 complete. The estimated cost of the liming station and associated piping and pumping is $1,500,000 and the cost of operating, including power cost, about $15,000 per year.

The practical problems that would be encountered with such a design are that the water will also pick up ammonia. Assuming that the ammonia scrubbing efficiency is only 50%, at a maximum of 205 lb/hr input, a scrubber return water loading of 102.5 lb/hr would be generated, for a return water concentration of about 68.3 ppm. Assuming at least 10% blow-down to keep the ammonia concentration near that of pond water or about 650 ppm, and using as much of this water in the granulation process as possible and performing a heat balance around the pond results in a net make-up of 282 gpm. As we would use our pond water as the make-up, then we would need to lime this water at 853 lbs. per hour. Total liming cost for the make-up water is about $186,800 per year. One other problem would be encountered and that is the problem of disposal of the sludge generated by the liming process. There would be about 3,759 tons per year generated and if a disposal cost of $50.00 per ton is assumed, this amounts to an annual cost of $261,650. Looking at this whole system on an annual cost basis assuming a 20 year life with an annual rate of return of 10% gives:

$6,000,000 @ 10% for 20 years	$704,758
lime cost	189,150
power	22,300
operating	15,000
maintenance	10,000
sludge disposal	261,650
TOTAL	$1,202,938

The total cost to reduce the pollutant loading by 15.6 tons of fluoride per year is:

$$1,202,938/15.6 = \$77,110 \text{ per ton}$$

In conclusion, lower total emissions of fluoride can not practically be achieved without excessive expenditures on the part of the applicant. It is my understanding that Mississippi Chemical tried this scrubbing method several years ago and found that operating problems involving calcium build-up or fall-out in the tail gas scrubber caused them to switch to straight pond water scrubbing.

Florida Department of Environmental Regulation

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

Lawton Chiles, Governor

Carol M. Browner, Secretary

June 16, 1992

CERTIFIED MAIL-RETURN RECEIPT REQUESTED

Mr. C. M. Farris
Vice President of Operations
Farmland Hydro, L.P.
P. O. Box 960
Bartow, Florida 33830

Dear Mr. Farris:

Attached is one copy of the Technical Evaluation and Preliminary Determination and proposed permit for the modification of the North GTSP/MAP/DAP Granulation Plant at the Green Bay phosphate fertilizer chemical complex located on County Road 640 West near Bartow, 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

Farmland c/ (original) and J. Koogler copies sent Fed. Express 6-17-92 Billed To J Koogler

STATE OF FLORIDA
DEPARTMENT OF ENVIRONMENTAL REGULATION

CERTIFIED MAIL

In the Matter of an
Application for Permit by:

DER File No. AC 53-210886
PSD-FL-186
Polk County

Mr. C. M. Farris
Farmland Hydro, L.P.
P. O. Box 960
Bartow, Florida 33830

_____/

INTENT TO ISSUE

The Department of Environmental Regulation gives notice of its intent to issue a permit (copy attached) for the proposed project as detailed in the application specified above, for the reasons stated in the attached Technical Evaluation and Preliminary Determination.

The applicant, Farmland Hydro, L.P., applied on March 25, 1992, to the Department of Environmental Regulation for a permit to modify the North GTSP/MAP/DAP Granulation Plant at the Green Bay phosphate fertilizer chemical complex located on County Road 640 West near Bartow, Polk County, Florida 33830.

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 Permit. The notice shall be published one time only within 30 days in the legal ad section of a newspaper of general circulation in the area affected. For the purpose of this rule, "publication in a newspaper of general circulation in the area affected" means publication in a newspaper meeting the requirements of Sections 50.011 and 50.031, F.S., in the county where the activity is to take place. The applicant shall provide proof of publication to the Department's Bureau of Air Regulation, 2600 Blair Stone Road, Tallahassee, Florida 32399-2400, within seven days of publication. Failure to publish the notice and provide proof of publication within the allotted time may result in the denial of the permit.

The Department will issue the permit with the attached conditions unless a petition for an administrative proceeding

(hearing) is filed pursuant to the provisions of Section 120.57, F.S.

A person whose substantial interests are affected by the Department's proposed permitting decision may petition for an administrative proceeding (hearing) in accordance with Section 120.57, 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 6-17-92 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

6-17-92
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 PERMIT

The Department of Environmental Regulation gives notice of its intent to issue a construction permit (AC 53-210886/PSD-FL-186) to Farmland Hydro, L.P., P. O. Box 960, Bartow, Florida 33830. The permit will allow the applicant to modify and increase production of the North GTSP/MAP/DAP Granulation Plant located on County Road 640 West near Bartow, Polk County, Florida. The allowable emissions will be 22.5 lbs/hr (98.6 TPY) of particulate matter, 3.7 lbs/hr (16.4 TPY) fluorides, and 46.7 lbs/hr (204.7 TPY) ammonia. The proposed project is subject to Prevention of Significant Deterioration (PSD) regulations for fluorides. A determination of Best Available Control Technology (BACT) was required for fluorides. There are no PSD increments or ambient air quality standards for fluorides. These emissions will not cause a violation of any ambient air 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

Farmland Hydro, L.P.
Bartow, Polk County, Florida

North GTSP/MAP/DAP Granulation Plant Modification
File No.: AC 53-210886 (PSD-FL-186)

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

June 16, 1992

I. General Information

A. Applicant

Farmland Hydro, L.P.
P. O. Box 960
Bartow, Florida 33830

B. Request

On March 25, 1992, Farmland Hydro, L.P., submitted an application for permit to construct (modify) their existing North GTSP/MAP/DAP* Granulation Plant located at the Green Bay phosphate fertilizer chemical complex (SIC 2819) on County Road 640 West near Bartow, Polk County, Florida 33830. The UTM coordinates of this facility are Zone 17, 409.5 km E and 3079.5 km N. The application was considered complete on April 21, 1992, when the Department received additional information on the project from Koogler & Associates.

*GTSP - Granular Triple Superphosphate
MAP - Monoammonium Phosphate
DAP - Diammonium Phosphate

C. Project

The applicant proposes to modify the North GTSP/MAP/DAP Granulation Plant to discontinue the manufacture of GTSP, increase the allowable production of MAP from 70 to 120 TPH, and increase the allowable production of DAP from 50 to 100 TPH. No associated modifications are needed to the sulfuric acid plant, phosphoric acid plant, or granular fertilizer handling and storage facilities to accomplish the higher MAP and DAP production from the North Granulation Plant.

The primary physical changes to the existing North Granulator Plant are:

1. A new reactor-granulator (R/G) scrubber system consisting of a two stage scrubber (second stage is a venturi scrubber) with each stage followed by a cyclonic separator.

2. A new BFL* scrubber, following the R/G scrubber (described above), which is a shell and tube heat exchanger (ammonia on shell side) that circulates either condensed water from the gas stream or pond water, to control fluoride emissions, and a new stack that is 129 feet high and 5.5 feet in diameter.

*Scrubber based on process developed by Belladune Fertilizer, Limited of Nova Scotia.

3. A new cooler-chiller to evaporate ammonia and uses the cold air produced to cool the granulated product in the fluid bed cooler.

4. A new venturi-cyclonic scrubber system to control the emissions from the fluid bed cooler. The scrubbing liquid will be 10% P_2O_5. This system will discharge to the existing main stack (along with the dryer and screen and mill (S/M) scrubber systems). This stack is 129 feet high and 7.5 feet in diameter.

5. A new MAP pipe reactor and granulator.

6. New screens and recycle conveyor along with relocated screens, elevators, elevator drive, and recycle conveyor in the screening system.

7. New controls for the dryer scrubber and screen/mill scrubber.

8. Relocated pipe reactor feed tank system.

9. Relocated and modified DAP reactor system.

10. Smaller fans for the screens and mills which will reduce the air flow from 35,000 to 28,000 scfm.

11. Relocation of the north fines bin.

12. Relocation of the reclaim water tank system.

13. Removal of the existing GTSP scrubber system used to control the GTSP reactor.

D. Emissions

The increased production in the MAP/DAP Granulation plant will cause an increase in actual particulate matter (PM) and fluoride (F) emissions. Ammonia (NH_3) emissions are expected to decrease. The cooler scrubber system discharges through the existing plant stack. The S/M and dryer scrubber systems discharge to the cross-flow scrubber which also discharges to the existing plant stack. The proposed discharges to the cross-flow scrubber, as projected by the applicant, are summarized in the following tables.

Cooler Scrubber System

	Emissions*			
	DAP Production		MAP Production	
Pollutant	lbs/hr	TPY	lbs/hr	TPY
PM	1.98	8.67	5.52	24.18
F	0.94	4.12	1.21	5.30
NH_3	3.29	14.41	4.46	19.53

*Emissions though the existing stack, along with the cross-flow scrubber's emissions, to the ambient air.

Screen and Mill Scrubber System

	Emissions*			
	DAP Production		MAP Production	
Pollutant	lbs/hr	TPY	lbs/hr	TPY
PM	6.60	28.91	6.60	28.91
F	0.20	0.88	0.20	0.88
NH_3	1.50	6.57	1.50	6.57

*Emissions to the cross-flow scrubber, not directly to the ambient air.

Dryer Scrubber System

	Emissions*			
	DAP Production		MAP Production	
Pollutant	lbs/hr	TPY	lbs/hr	TPY
PM	4.90	21.46	7.32	32.06
F	0.48	2.10	0.48	2.10
NH_3	1.80	7.88	2.67	11.69

*Emissions to the cross-flow scrubber, not directly to the ambient air.

The gases leaving the screen and mill, and dryer scrubber systems pass through the cross-flow scrubber before being discharged to the atmosphere through the main stack.

Cross-Flow Scrubber System

	Emissions*			
	DAP Production		MAP Production	
Pollutant	lbs/hr	TPY	lbs/hr	TPY
PM	8.64	37.84	10.36	45.38
F	0.66	2.89	0.66	2.89
NH_3	1.88	8.23	2.55	11.17

*Emissions through the existing stack, along with the cooler scrubber system's emissions, to the ambient air.

The reactor/granulator process will be controlled by a new scrubber system that discharges through a new stack for the plant.

Reactor/Granulator (R&G) Scrubber System

	Emissions*			
	DAP Production		MAP Production	
Pollutant	lbs/hr	TPY	lbs/hr	TPY
PM	5.52	24.18	6.62	29.00
F	1.16	5.08	1.87	8.19
NH_3	41.56	182.03	30.93	135.47

*Emissions to the ambient air.

The total emissions from the plant are discharged through two stacks; the existing one and the new R/G stack. The total emissions to the ambient air from the plant during DAP and MAP production are summarized in the following tables.

100 TPH DAP Production (46.0 TPH P_2O_5)

	Existing Stack	R/G Stack	Total	
Pollutant	lbs/hr	lbs/hr	lbs/hr	TPY
PM	10.62	5.52	16.14	70.69
F	1.60	1.16	2.76	12.09
NH_3	5.17	41.56	46.73	204.68

120 TPH MAP Production (62.4 TPH P_2O_5)				
	Existing Stack	R/G Stack	Total	
Pollutant	lbs/hr	lbs/hr	lbs/hr	TPY
PM	15.88	6.62	22.50	98.55
F	1.87	1.87	3.74	16.38
NH_3	7.01	30.93	37.94	166.18

From the above tables, it can be seen that the maximum proposed PM emissions (98.55 TPY) and fluorides (F) emissions (16.38 TPY) will occur during the manufacture of MAP and the maximum NH_3 emissions (204.68 TPY) would occur during the manufacture of DAP.

The applicant has reported the actual emissions from the GTSP/MAP/DAP plant for 1989-90 (average for PM) and 1990-91 (average for F and ammonia) to be: 45.2 TPY PM, 9.4 TPY F, and 291.4 TPY NH_3.

The plant will also emit small quantities of the products of combustion (CO, NO_x, VOC) from the natural gas or No. 2 fuel oil fuels used in the dryer. None of the pollutants from the fuel are emitted at a rate that will require regulation of them. As there is no increase in heat input to the dryer, the emissions on these products are unchanged.

The applicant has noted that the dry rock system at this facility (rock unloading, PAD 1 Ball Mill, and PAD 2 Ball Mill) ceased operation in 1990-91 when the plant began to use wet rock. Actual particulate matter emissions from this equipment was 49.3 TPY.

II. Rule Applicability

The proposed project, modification of the north GTSP/DAP/MAP granulation plant, is subject to preconstruction review requirements under the provisions of Chapter 403, Florida Statutes, and Chapter 17-2, Florida Administrative Code (F.A.C.).

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

The phosphate fertilizer chemical facility (SIC 2874) is a major source of particulate matter and sulfur dioxide because the potential emissions of each of these air pollutants exceed 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, including the preconstruction review requirements listed in this rule, because the contemporaneous emissions increase of fluorides exceed the significant emission rate listed in Table 500-2 of F.A.C. Rule 17-2. The emission limit for fluorides will be established by a Best Available Control Technology (BACT) determination pursuant to F.A.C. Rule 17-2.500(5).

In addition, the proposed modification is subject to 40 CFR 60, Subpart V, Standards of Performance for the Phosphate Fertilizer Industry: Diammonium Phosphalt Phosphate Plants.

III. Technical Evaluation

The applicant has stated that the higher production rate will not require an increase in the fuel consumption of the dryer. The dryer is permitted for a heat input of 50 MMBtu/hr from natural gas, or for up to 400 hrs/yr No. 2 fuel oil, when natural gas fuel is curtailed. The estimated air pollutant emissions from the burning of this fuel were based on the emission factors in the publication referred to as AP-42 and the net emissions of the products of combustion are not expected to change.

Ammonia is one of the air pollutants that will be emitted by this plant. The proposed scrubber systems will be more efficient at capturing the ammonia than the present system. The applicant estimates that the ammonia loss from the plant will be reduced from 291.4 TPY to 204.7 TPY.

Particulate matter (PM) will be emitted from both the new cooler scrubber system stack and the dryer and S/M scrubber systems that discharge through the cross-flow scrubber and existing stack. The applicant requested that the PM emission limit for the facility be reduced from 26.9 lbs/hr (117.8 TPY) to 22.5 lbs/hr (98.6 TPY) during the manufacture of MAP and 16.1 lbs/hr (70.7 TPY) during the manufacture of DAP. The proposed standard is equivalent to an emission slightly greater than 0.02 grains PM/dscf which the Department believes is reasonable for a scrubber in this application. The actual PM emissions from this plant have been 45.2 TPY. As part of this application, a contemporaneous PM emission credit is requested for a 1990-1991 process change that resulted in the facility being able to use wet instead of dry phosphate rock in their plant. This allowed the plant to cease operation of the dry rock unloading equipment (AO 53-151296), PAD 1 Ball Mill (AO 53-157062), and PAD 2 Ball Mill (AO 53-157064). The total PM permitted emissions for this equipment was 389.4 TPY and the average actual emissions were 49.3 TPY.

Allowable fluoride emissions will be set by a BACT analysis. The applicant has proposed meeting the new source performance standard of 0.06 lbs F/T P_2O_5 for DAP plants during both MAP and DAP manufacture. This will be accomplished by use of the following:

Reactor-granulation equipment will be controlled by a three stage scrubbing system. The first stage will use low strength phosphoric acid as the scrubbing liquid to minimize fluoride being evolved from the acid. The second stage will be a venturi-cyclonic scrubber. The third stage will be a BFL scrubber which uses condensate from the cooler-chiller and processes water as the scrubbing liquid.

The product cooler will use a venturi-cyclonic scrubber with low strength phosphoric acid as the scrubbing liquid to capture particulate matter.

The dryer will be controlled by a downflow scrubber which will use phosphoric acid as the scrubbing liquid and be followed by a cyclonic separator and another downflow scrubber that will use process water to remove fluorides. This scrubber system will discharge to the cross-flow scrubber which will also use process water as the scrubbing liquid. The cross-flow scrubber will also control the emissions from the screens and mills equipment.

The screens and mills equipment will be controlled by a system that is identical to that used for the dryer.

Because fluorides are recovered at this facility, the fluoride content of the process water is relatively low - 0.45%. Other considerations prevent the use of fresh water in the cross-flow scrubber which should further lower fluoride emissions. The cost of using treated water in the scrubber is prohibitive - up to $77,000/ton fluoride removed. The Department's BACT analysis has concluded that 0.06 lbs F/T P_2O_5 is BACT for this process. Thus, the allowable fluoride emissions from the facility will be 3.74 lbs/hr and 16.4 TPY.

IV. Air Quality Analysis

The production rate increases due to the proposed GTSP/MAP/DAP North plant production increase will result in emissions increases which are projected to be greater than the PSD significant rates for fluorides. 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 which includes:

- A PSD increment analysis.
- An Ambient Air Quality Standards (AAQS) analysis.
- An analysis of existing air quality.
- An analysis of impacts on soils, vegetation, visibility, and growth-related air quality impacts.
- A Good Engineering Practice (GEP) stack height determination.

In the case of this proposed project, no PSD or AAQS analysis was required since there are no PSD increments or AAQS established for fluorides. 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.

However, EPA's general position for a pollutant for which there is no AAQS is to not require monitoring data, but to base the air quality analysis on modeled impacts.

The applicant modeled the impact of increased fluorides emissions from the project by using the EPA-approved Industrial Source Complex Short-Term (ISCST) dispersion model. All recommended EPA default options were used. Direction-specific downwash parameters were used because the stacks were less than the good engineering practice (GEP) stack height. Five years of sequential hourly surface and mixing depth data from the Tampa, Florida National Weather Service (NWS) station collected during 1982 through 1986 were used in the model.

The EPA does have a significant monitoring concentration of 0.25 ug/m^3, 24-hour average, for fluorides whereby an applicant may be exempted from preconstruction monitoring if the maximum predicted impact is less than this value. The maximum concentration increase for this project is 3.41 ug/m^3, 24-hour average. However, even though the maximum predicted impact is greater than the significant monitoring concentration, the Department is not requiring preconstruction monitoring for this project because there are no EPA-approved monitoring methods for fluorides. Additionally, the Department has a draft Air Toxics Permitting Strategy which defines no threat levels (NTLs) for fluorides for the 8-hour and 24-hour averaging times. The maximum predicted 8-hour and 24-hour concentration increases are 6.66 ug/m^3 and 3.41 ug/m^3, respectively. These values are less than the NTLs of 25.0 ug/m^3, 8-hour average and 6.0 ug/m^3, 24-hour average. If all of the fluoride sources at the facility were modeled, however,

the NTLs would likely be exceeded. The NTLs, though, are guideline values and since the fluoride emission limits will be established by a BACT determination, the Department is not requiring more stringent limitations for the project than those set by the Department's BACT determination.

The draft Air Toxics Permitting Strategy also defines NTLs for ammonia. The applicant modeled the reduction in ammonia emissions using the same modeling procedure used for fluorides. The maximum predicted increase in ammonia concentrations (the increases are due to plume downwash) in the ambient air are 120.0 ug/m^3, 8-hour average and 30.0 ug/m^3, 24-hour average. These values are lower than the 8-hour average NTL of 180 ug/m^3 and the 24-hour average NTL of 43.2 ug/m^3.

The applicant performed an analysis of impacts on soils, vegetation, visibility, and growth-related air quality impacts. No significant air quality impacts are expected.

V. Conclusion

Based on the information provided by Farmland Hydro, L.P., the Department has reasonable assurance that the proposed project, as described in this evaluation, and subject to the conditions proposed herein, will not cause or contribute to a violation of any air quality standard, PSD increment, or any other technical provision of Chapter 17-2 of the Florida Administrative Code.

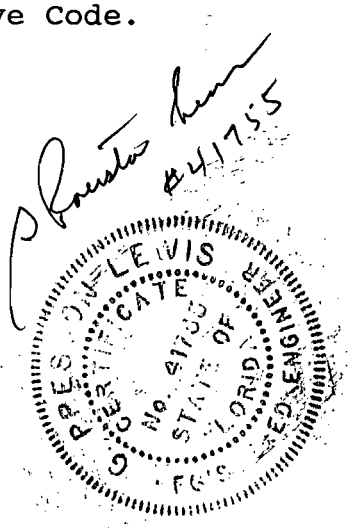
the NTLs would likely be exceeded. The NTLs, though, are guideline values and since the fluoride emission limits will be established by a BACT determination, the Department is not requiring more stringent limitations for the project than those set by the Department's BACT determination.

The draft Air Toxics Permitting Strategy also defines NTLs for ammonia. The applicant modeled the reduction in ammonia emissions using the same modeling procedure used for fluorides. The maximum predicted increase in ammonia concentrations (the increases are due to plume downwash) in the ambient air are 120.0 ug/m^3, 8-hour average and 30.0 ug/m^3, 24-hour average. These values are lower than the 8-hour average NTL of 180 ug/m^3 and the 24-hour average NTL of 43.2 ug/m^3.

The applicant performed an analysis of impacts on soils, vegetation, visibility, and growth-related air quality impacts. No significant air quality impacts are expected.

V. Conclusion

Based on the information provided by Farmland Hydro, L.P., the Department has reasonable assurance that the proposed project, as described in this evaluation, and subject to the conditions proposed herein, will not cause or contribute to a violation of any air quality standard, PSD increment, or any other technical provision of 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:
Farmland Hydro, L.P.
P. O. Box 960
Bartow, Florida 33830

Permit Number: AC 53-210886
PSD-FL-186
Expiration Date: January 1, 1994*
County: Polk
Latitude/Longitude: 27°50'37"N
81°56'05"W
Project: North GTSP/MAP/DAP
Granulation Plant Modifications

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:

Authorization to modify the existing North GTSP/MAP/DAP** Granulation Plant to increase allowable production from 70 to 120 TPH MAP and from from 50 to 100 TPH DAP. The modifications include: installing a new reactor-granulator scrubber system followed by a new BFL scrubber system; a new cooler-chiller; a new venturi-cyclonic scrubber system; a new MAP pipe reactor and granulator; new screens and recycle conveyor; new smaller fans for the screens and mills; relocation of existing screens, elevators, elevator drive, and recycle conveyor in the screen system; new controls for the dryer scrubber and the screen/mill scrubber; relocation of the pipe reactor feed tank system; relocation and modification of the DAP reactor system; relocation of the north fines bin; relocation of the reclaim water tank system; removal of the existing GTSP scrubber systems; and other associated alterations. The plant will discharge air pollutants through the existing MAP/DAP main stack (114,000 acfm/88,000 dscfm/129 ft. elevation/7.5 ft. diameter/108°F) and the new reactor-granulator stack (49,700 acfm/27,000 dscfm/129 ft. elevation/5.5 ft. diameter/178°F). The North MAP/DAP Granulation Plant is located at Farmland Hydro, L.P.'s phosphate fertilizer chemical manufacturing facility on County Road 640 West, near Bartow, Polk County, Florida. The UTM coordinates of this facility are Zone 17, 409.5 km E and 3079.5 km N.

PERMITTEE:
Farmland Hydro, L.P.

Permit Number: AC 53-210886
PSD-FL-186
Expiration Date: January 1, 1994

This permit will replace operation permit No. AC 53-171758 (40 TPA 53005329) when the permittee places any of the new/modified equipment authorized by this permit in service.

*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 plant placed in operation within a reasonable time.

**GTSP - Granular Triple Superphosphate
MAP - Monoammonium Phosphate
DAP - Diammonium Phosphate

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. Application received March 25, 1992.
2. Koogler & Associates' memo dated April 16, 1992.
3. Koogler & Associates' memo dated April 20, 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

GENERAL CONDITIONS:

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 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.

GENERAL CONDITIONS:

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 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.

GENERAL CONDITIONS:

13. This permit also constitutes:

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

14. The permittee shall comply with the following:

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

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

Construction Requirements

1. The modification of this facility shall reasonably conform to the plans and schedule submitted in the application.

2. The stack sampling facilities must comply with F.A.C. Rule 17-2.700(4).

3. The air pollution control systems shall be designed to meet the ammonia, fluorides, and particulate matter standards in this permit.

4. The plant shall be equipped with flow monitoring devices that comply with 40 CFR 60.223 (July 1, 1991) to continuously measure and record the phosphorus-bearing feed material to the process and the total pressure drop across each scrubbing systems.

Emission Restrictions

5. Emissions from the modified plant shall not exceed any of the limits listed in the following tables:

MAP Production

Pollutant		Main Stack	R/G Stack	Plant Total
Fluorides	lbs/TP_2O_5	--	--	0.06
	lbs/hr	1.87	1.87	3.74
	TPY	8.2	8.2	16.4
Particulate Matter	lbs/hr	15.9	6.6	22.5
	TPY	69.6	29.0	98.6
Ammonia	lbs/hr*	7.0	30.9	37.9
	TPY	30.7	135.5	166.2

*24-hour average

SPECIFIC CONDITIONS:

DAP Production				
Pollutant		Main Stack	R/G Stack	Plant Total
Fluorides	lbs/TP$_2$O$_5$	--	--	0.06
	lbs/hr	1.60	1.16	2.76
	TPY	7.0	5.1	12.1
Particulate Matter	lbs/hr	10.6	5.5	16.1
	TPY	46.5	24.2	70.7
Ammonia	lbs/hr*	5.2	41.6	46.7
	TPY	22.7	182.0	204.7

*24-hour average

6. Visible emissions from any part of this plant shall not exceed 20% opacity.

7. No person shall cause, suffer, allow or permit the discharge of air pollutants which cause or contribute to an objectionable odor (F.A.C. Rule 17-2.620).

Operation Requirements

8. Production shall not exceed 120 TPH MAP and 100 TPH DAP.

9. Phosphoric acid feed shall not exceed 62.4 TPH P_2O_5 during MAP manufacture and 46.0 TPH P_2O_5 during DAP manufacture. Consumption of sulfuric and nitric acids shall be reported in the AOR.

10. Ammonia feed shall not exceed 16.1 TPH during MAP manufacture and 21.9 TPH during DAP manufacture.

11. The system shall be properly operated and maintained (F.A.C. Rule 17-2.210(2)). No person shall circumvent any pollution control device or allow the emissions of air pollutants without the applicable air pollution control device operating properly (F.A.C. Rule 17-2.240). Pressure drop across the R-G venturi scrubbers shall be at least 12 inches of water.

12. Any process equipment, vessel, seal tank, duct, etc., having the potential to emit air pollutants shall be sealed or covered during plant operation to minimize fugitive emissions.

SPECIFIC CONDITIONS:

13. This plant shall not manufacture GTSP.

14. The plant may operate continuously, 8760 hrs/yr.

15. Heat input to the dryer shall not exceed 50 MMBtu/hr. Only natural gas (max. 0.05 MMCF/hr) shall be burned in the dryer; except when the natural gas supply to the plant is curtailed, then No. 2 fuel oil with a maximum of 0.5% sulfur may be burned for up to 400 hrs during any 12 month period.

16. Lignosulphonates (lignin) shall be used when needed to control unconfined dust emissions when handling MAP and DAP product. Defoamers may be added to the 28% P_2O_5 scrubbing liquid.

17. Reasonable precautions for minimizing fugitive emissions of ammonia shall include routine inspection of vessels, piping, and hoses; placing scrubbers in operation prior to feeding ammonia to the process; and prompt repair of any leaks.

Testing Requirements

18. This plant shall be tested at a production rate of 108 to 120 TPH MAP and 90 to 100 TPH DAP within 60 days of commercial production of these products by the modified plant and annually thereafter for particulate matter, fluorides, and visible emissions. It shall also be tested for ammonia on achieving commerical production and prior to the renewal of any permit to operate issued for the modified plant (test every 5 years). The annual test during MAP and DAP production will be waived if that product is not manufactured during that year. All compliance tests shall meet the requirements listed in F.A.C. Rule 17-2.700. The unit shall not operate above the maximum permitted MAP or DAP production rates; except during the time of the compliance tests.

19. Test methods to determine compliance are EPA Method 5 for particulate matter, EPA Method 9 for visible emissions, and EPA 13A or 13B for fluorides. These methods are described in 40 CFR 60, Appendix A (July 1, 1991). Ammonia emissions shall be determined using a variation of the EPA Draft Method, using large impingers with 100 mls of 1.0 normal sulfuric acid in the first three impingers, the last impinger dry and a probe with an external design similar to that used in EPA Method 16, or any other test method agreed to by the Department.

Administrative Requirements

20. The Department's Southwest District shall be notified in

SPECIFIC CONDITIONS:

writing a minimum of 15 days in advance of any compliance test to be conducted on this source. The permittee shall comply with the notification and recordkeeping requirements of 40 CFR 60.7 (July 1, 1991).

21. The permittee shall maintain records showing the plant's operating time, phosphoric acid (P_2O_5), and ammonia consumption; MAP and DAP production (TPY); and scrubber pressure drops for a minimum of 2 years.

22. The permittee shall submit annual operation reports (AOR) that include a summary of the consumption of phosphoric acid and ammonia, the production of MAP and DAP, the fuel consumption, and a complete test report (F.A.C. Rule 17-2.700(7)) which includes the production and operation parameters (scrubber pressure drops) during the test and a report of any recent maintenance on the scrubbers.

23. Prior to placing the modified plant in service, the permittee shall surrender the permits for the rock unloading section (AO 53-151296), the PAD 1 Ball Mill (AO 53-157062), and the PAD 2 Ball Mill (AO 53-157064) to the Southwest District.

24. 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).

25. 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. 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
Farmland Hydro, L.P.
Polk County
MAP/DAP Granulation Plant

The applicant proposes to modify their existing MAP/DAP granulation plant and increase production to 100 TPH diammonium phosphate (DAP) and 120 TPH monammonium phosphate (MAP). This plant is located at their phosphate fertilizer chemical manufacturing facility on County Road 640 West near Bartow, Polk County, Florida.

The proposed project will result in a significant increase in the emissions of fluorides and 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. 17-2.500(5)(c).

Date of Receipt of a BACT Application

March 25, 1992

Control Technology

The proposed reactor-granulator scrubbing system is a "double mole" three stage scrubber using 10% and 28% P_2O_5 acid as the scrubbing liquids. The second stage is a low pressure (12" water) venturi scrubber. Each stage is followed by a cyclonic separator. This system is followed by a BFL scrubber that uses recirculated condensate and process water as the final scrubbing liquid. The gases are discharged through a new stack that served only this scrubber system.

The existing dryer scrubber system consists of a down flow scrubber using 28% P_2O_5 phosphoric acid scrubber liquid followed by a cyclonic separator. The gases from this separator pass through a cross-flow scrubber that is shared with the screen and mill (S/M) scrubber. The cross-flow scrubber uses recycled process water as the scrubber medium. The gases are discharged through the existing plant stack to the atmosphere. Except for new controls and fans, this scrubber system is not being modified.

The description of the S/M scrubber system is identical to the above one for the dryer scrubber system.

The product cooler system will cool air by the evaporation of ammonia which is then used to cool the product. (The condensate from cooling the air is used in the BFL scrubber.) The air leaving the product cooler passes through a venturi scrubber that uses 10% P_2O_5 phosphoric acid as the scrubber liquid and through a cyclonic separator before being mixed with the gases leaving the cross-flow scrubber and discharged through the existing plant stack to the atmosphere.

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 Determination by DER

The Department accepts the applicant's recommendation for BACT. The following table summarizes the fluoride emission standards for the modified MAP/DAP plant.

	Fluoride Emissions					
	DAP Production (46 TPH P_2O_5)			MAP Production (62.4 TPH P2O5)		
Control	lbs/hr	TPY	lbs/TP$_2$O$_5$	lbs/hr	TPY	lbs/TP$_2$O$_5$
R-G Scrubber System	1.16	5.08	0.025	1.87	8.19	0.030
Cross-Flow Scrubber System (Dryer plus S/M scrubbing)	0.66	2.89	0.014	0.66	2.89	0.011
Product Cooler Scrubbing System	0.94	4.12	0.020	1.21	5.30	0.03
TOTAL	2.76	12.09	0.06	3.74	16.38	0.06

BACT Determination Rationale

DER's BACT determination is the same as proposed by the applicant, earlier BACT determinations for similar processes in Florida, and the new source performance standards for diammonium phosphate plants, 40 CFR 60, Subpart V. The MAP/DAP plants emit both fluoride and ammonia -- along with particulate matter. Most first stage scrubbers in these plants use phosphoric acid scrubbing liquid to recover ammonia. Ammonia is a raw material for the plant and a generally unregulated air pollutant that has the potential to cause objectionable odors, even in low ambient air concentrations. Fluorides are evolved from the phosphoric acid in the scrubber. This plant modification uses a lower strength acid (10% P_2O_5 instead of the more common 28% acid) in the first stage of some scrubbers. This lowers the amount of fluoride evolved. Final fluoride removal occurs in a scrubber using recycle process water. The recycle process water contains traces of fluoride (0.45%) that limit the amount of fluoride that can be readily adsorbed from the gas stream. Fluosilicic acid production at this facility will also help reduce the quantity of fluorides getting into the recycle plant process water which will lower the fluoride emissions. Fresh or treated water in the final scrubber would lower fluoride emissions. However, because of the large consumption of fresh water by the phosphate industry in Florida which is concentrated near this plant, the companies are being forced to lower the quantity of fresh water used. Using treated water does not appear cost effective as the proposed system is estimated to achieve over 99.9% fluoride removal while also providing reasonable control of ammonia emissions.

Environmental Impact Analysis

The actual ambient air impact of the increased fluorides emissions is expected to be approximately:

Averaging Time (hrs)	Increase Impact ug/m^3
8	6.7
24	3.4
Annual	0.2

The Department and U. S. Environmental Protection Agency (EPA) do not have an ambient air standard for fluorides. Fluorides are classified by EPA as a welfare-related pollutant (no demonstrated effect on public health).

Conclusion

There will be no significant change in the ambient effects of fluorides on the soils and vegetation as a result of the increased fluoride emissions resulting from the modification of this plant.

Details of the Analysis May be Obtained by Contacting:

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

Recommended by:	Approved by:
C. H. Fancy, P.E., Chief Bureau of Air Regulation	Carol M. Browner, Secretary Dept. of Environmental Regulation
_____1992 Date	_____1992 Date

file

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

FAX TRANSMITTAL FORM

TO: Cleve Holladay + Willard Hanks
FDER

FROM: Pradeep Laval
K+A

PROJECT: 123-92-01

SENT BY: Marion

DATE: 5/15/92

FAX PHONE: 904-377-7158

The text being transmitted consists of 4 pages PLUS this one.

REMARKS: Please copy both Cleve and Willard on this transmittal. Thanks.
PR

MEMORANDUM

TO: Mr. Cleve Holladay

FROM: Pradeep Raval

DATE: May 15, 1992

SUBJECT: Air Quality Analysis
Farmland Hydro, L.P.

A. INTRODUCTION

The proposed MAP/DAP North plant production increase will result in a greater than the PSD significant increase in fluoride emissions as defined by FAC Rule 17-2.500, but less than a significant increase in particulate matter emissions and emissions of other pollutants. Therefore, the project is subject to PSD review requirements contained in FAC Rule 17-2.500 for fluorides. Part of these requirements is an air quality impact analysis which includes:

1. An analysis of existing air quality;
2. A PSD increment analysis;
3. An Ambient Air Quality Standards (AAQS) analysis;
4. An analysis of impacts on soils, vegetation, visibility and growth-related air quality impacts; and
5. A Good Engineering Practice (GEP) stack height determination.

In the case of the proposed MAP/DAP North Plant project, no PSD or AAQS

analysis was required since there is no PSD increment or Ambient Air Quality Standard established for fluorides. No ambient monitoring was deemed necessary for the proposed project based on the historical ambient air data and the relatively small projected ambient impacts. The predicted ambient air impact analysis was based on air quality dispersion modeling completed in accordance with EPA guidelines.

Based on the required analyses, the Department has reasonable assurance that the proposed MAP/DAP North Plant project, 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 ambient air quality standard. A brief description of the modeling methods used and the results of the required analyses follow. A more complete description is contained in the permit application on file.

B. MODELING METHOD

The EPA approved Industrial Source Complex Short-Term (ISC-ST) 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. Direction-specific downwash parameters were used because the stacks were less than the good engineering practice)GEP) stack height. Five years of sequential hourly surface and mixing depth data from the Tampa, Florida National Weather Service (NWS) station collected during 1982 through 1986 were used in the model. The results of the modeling presented below show the predicted increases in ambient ground-level concentrations for all averaging times.

METEOROLOGICAL DATA	FLUORIDE IMPACT (ug/m^3)		
	ANNUAL	8-HOUR	24-HOUR
1982	0.22	5.62	2.02
1983	0.18	5.33	3.41
1984	0.16	5.64	2.44
1985	0.15	6.66	2.45
1986	0.15	5.65	2.72
De minimis Impact 17-2.500 (3)(e)1,FAC	NA	NA	0.25

Based on the modeling results, historical ambient data, and the limitations of the available ambient fluoride monitoring methods, FDER concluded that ambient air monitoring for fluorides will not be required for the proposed project.

C. ADDITIONAL IMPACT ANALYSIS

Based on the modeling results, no adverse impacts are expected at the nearest Class I area (Chassahowitzka National Wildlife Refuge) located more than 100 km from the Farmland Hydro, L.P. facility. Also, no harmful effects on soils and vegetation are expected from the proposed project. In addition, the proposed fertilizer production increase will not significantly change employment, population, housing, or commercial/industrial development in the area to the extent that a

significant air quality impact would result.

D. CONCLUSION

Based on the information provided by Farmland Hydro, L.P., the Department has reasonable assurance that the proposed MAP/DAP North Plant project, as described in this evaluation, and subject to the conditions proposed herein, will not cause or contribute to a violation of any air quality standard, PSD increment, or any other technical provision of Chapter 17-2 of the Florida Administrative Code.

MEMORANDUM

TO: Mr. Willard Hanks
FDER, Tallahassee

FROM: Pradeep Raval

DATE: April 20, 1992

SUBJECT: Additional Information on Farmland Hydro, L.P.
North Plant MAP/DAP Modification

This is in response to your request to identify the overall fluoride control in the proposed MAP/DAP North Plant project.

The fluorides in the feed to the North plant under DAP and MAP production mode will be 114.54 and 91.65 pounds fluoride/per ton of P_2O_5, respectively.

Based on the proposed fluoride emission limit of 0.06 pound per ton of P_2O_5, the overall process control efficiency can be estimated as follows:

MAP Mode:

Fluoride Control Eff. = (91.65 - 0.06)/91.65 x 100

= 99.9%

DAP Mode:

Fluoride Control Eff. = (114.65 - 0.06)/114.65 x 100

= 99.9%

It is anticipated that this response will satisfy the only remaining question you had on the proposed project.

If you have any additional questions, please do not hesitate to give me a call.

MEMORANDUM

RECEIVED
APR 16 1992
Bureau of
Air Regulation

TO: Willard Hanks, FDER Tallahassee

FROM: Pradeep Raval

DATE: April 16, 1992

SUBJECT: Additional Information on Farmland Hydro, L.P.
North Plant MAP/DAP Modification

This is in response to the questions you raised in our telephone conversation on April 7, 1992, concerning the North Plant's MAP/DAP project. The questions are listed below followed by the responses.

QUESTIONS

1. Confirm that Farmland will discontinue GTSP production capability.

2. What additional materials (state quantities) are used in the North Plant besides those listed in the application form (eg., lime, sulfuric acid, etc.)?

3. Is RACT applicable to the source as a result of any significant impact of Farmland on the Hillsborough County particulate matter nonattainment area?

4. Identify overall scrubber efficiencies.

5. Explain why the R/G stack temperature is as high as 178°F despite a wet scrubbing system on line.

6. FDER requires a review of all sources for which there will be an actual emissions increase as a result of the proposed project.

7. Address MAP/DAP storage and shipping building emission changes.

8. Since the particulate matter emissions during a compliance test in 1991 are not representative of normal operations, submit revised calculations that reflect representative emission rates.

9. The BACT review should address all available control technology. For fluorides, the addition of lime to the recirculated tail gas scrubber water should be evaluated if it enhances fluoride emission reduction. If such a system is technically feasible, a cost analysis should be done to

see if the system would be cost effective on an annualized basis in terms of dollars/ton fluoride removed.

10. Describe how Farmland handles ammonia from the point it is received at the facility until it is used in the process. State the measures taken to reduce/minimize fugitive ammonia emissions from the system. Address ammonia emissions from the ammonia storage tank safety (pop-off) valve.

11. Reconcile air emissions presented in Section 3.1.2 and Table 3-3.

12. Are the ammonia emission estimates in the permit application accurate.

RESPONSES

1. The MAP/DAP North Plant will not retain any GTSP production capability after the proposed modification.

2. The minor ingredients used in MAP/DAP process are discussed in Attachment 1.

3. The Farmland Hydro, L.P. facility does not have a significant impact on Hillsborough County's particulate matter nonattainment area (see FDER's letter presented in Attachment 2).

4. The overall control efficiency of the scrubbing system proposed for the MAP/DAP North Plant is about 99 percent for particulate matter and ammonia. The fluoride scrubbing efficiency is addressed in more detail in Attachment 3.

5. The Reactor Granulator (R/G) exhaust temperature is explained in Attachment 4.

6. The proposed modification will result in an increase in the overall facility's material throughput. However, none of the existing permits covering operations of various chemical process and material handling sources will need to be modified as a result of the proposed project. The sulfuric acid, phosphoric acid and material handling/storage/shipping facilities will continue to operate in full compliance with their existing permits. There will be no net emission increases (as defined in FAC Rule 17-2.500) resulting from the proposed project beyond those documented in the MAP/DAP North plant modification application. The sulfuric and phosphoric acid plants have been permitted in accordance with the preconstruction review requirements under FAC Rule 17-2.500 and are not subject to a modification review at this time (see Attachment 5). The increased product handling in the storage and shipping building is addressed in Response 7.

7. The existing permit for the fertilizer product storage and shipping building addresses emissions of particulate matter. Although the permitted emission limits are based on the Process Weight Table, actual emissions from the building can be estimated based on the operation of the

scrubber which controls the particulate matter. The current actual emissions can be estimated using the exit flow rate, particulate loading (0.02 gr/dscf) and annual operating hours. The proposed emissions calculations would be based on the same numbers since the fan gas flow rate, particulate loading (0.02 gr/dscf) and annual fan operating hours will not change. Therefore, there will be no increase in the estimated actual emissions of particulate matter from the MAP/DAP storage and shipping building as a result of the proposed project.

8. As recognized by FDER, the particulate matter emission rate reflected by the 1991 compliance test is not representative of normal operations as indicated in the application. The following revised calculations reflect 1989 compliance test results (3/28/89, 7/28/89 and 9/22/89) and operating hours:

1989 PM = (10.16 + 13.78 + 11.22) lbs/hr /3

x 7071 hrs/yr x ton/2000 lbs

= 41.4 tpy

1990 PM = 48.9 tpy (documented in the application)

1989-1990 PM = (41.4 + 48.9) tpy /2

= 45.2 tpy

The corresponding net emission increase can be estimated as follows:

Net Change = New Estimate - Previous Estimate

= (45.2 - 35.1) tpy

= 10.1 tpy

Net PM Increase = Previous Estimate - Net Change in Calculated Actuals

= (14.1 - 10.1) tpy

= 4.0 tpy

9. Additional information on the fluoride BACT analysis is presented in Attachment 3.

10. A discussion on ammonia handling is presented in Attachment 6.

11. There are a few typographical errors which need to be corrected in the emission tables presented in the permit application package, as follows:

LIST OF CORRECTIONS

Page No.	Process	Pollutant	Correct Emissions lb/hr	tpy
36	MAP	Ammonia	OK	135.47
37	MAP	PM	22.50	98.55
37	MAP	F	3.74	16.38
56	DAP	PM	16.14	70.69

12. The ammonia emission estimates presented in the application of 37.9 pounds per hour for MAP and 46.7 pounds per hour for DAP reflect the most current information available on the process design. The North Plant is expected to operate within those estimated emissions based on a 24-hour (daily) average basis.

It is anticipated that the information provided in this response will help expedite the review of the proposed project.

ATTACHMENT 1

Minor Ingredients Used In Granulation:

Several chemicals are used from time to time in the granulation of DAP and MAP depending on the need at the time of production. These minor ingredients are sulfuric acid, nitric acid, defoaming agents and lignosulphonates. These ingredients are used in the following ways;

Sulfuric acid is used to increase the nitrogen content of the finished product by causing the formation of ammonium sulfate. The problem with using this is that the compound dilutes the final product and the weight percent of phosphate (P_2O_5) becomes lower. In fact, sulfuric acid reduces the P_2O_5 content over 10 times greater than it increases the nitrogen (N). We have used sulfuric acid in the past only one or two days per year for a total consumption less than 40 tons of 100% H_2SO_4.

Nitric acid has been used to a much greater extent than sulfuric acid as a nitrogen booster. This causes the formation of ammonium nitrate which dilutes the P_2O_5 by less than three times the increase in N. We have used nitric acid an average of 11.5 tons per day of 100% HNO_3. This represents about 0.65% of the finished product.

Defoamers are added as needed to the scrubbing recirculation pots containing the 28% scrubbing liquor. According to the MSDS this is a sodium salt of sulfonated fatty acids. There is no hazardous ingredients and no OSHA exposure limits. During the last production year we have used a average of 1.5 lbs. of defoamer per ton of product produced.

The use of lignosulphonates (lignin) has been mostly on an experimental basis as a granulation conditioner and dust control agent. Lignin is a by-product of the calcium bisulfite pulping process. Lignosulfonates are derived from lignins, a family of three-dimensional polymers which bind together the cellulose fibers in wood. The MSDS also lists no hazardous ingredients and no health hazards. We have used a total of about 200,000 gallons in last year's production. This amounts to less than 2 lbs. per ton of product produced.

ATTACHMENT 2

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

October 11, 1982

Mr. Gene Meier
Director, Technical Services
Farmland Industries, Inc.
P. O. Box 960
Bartow, Florida 33830

Re: Evaluation of Refined Modeling Submitted in Support of Exemption from Rule 17-2.650(2), Florida Administrative Code (FAC).

Dear Mr. Meier:

The Department has reviewed the dispersion modeling submitted to show compliance with the exemption criteria of Section 17-2.650(2)b.2., FAC, i.e. to demonstrate an insignificant impact on the Tampa particulate matter nonattainment area. The modeling was found to be complete and run within the guidelines set forth by the Department. Since the maximum highest, second-highest 24-hour concentration predicted to occur on the nonattainment area was less than 5.0 ug/m^3 over a five year period and the maximum annual concentration was less than 1.0 ug/m^3, the Department finds that Farmland Industries' Green Bay plant meets the exemption criteria set forth in the rule given the emission characteristics defined in the modeling.

Sincerely,

for/ Steve Smallwood, P.E.
Chief
Bureau of Air Quality
Management

SS/TR/bjm

cc: Dan Williams
Anthony Jones

ATTACHMENT 3

Concerning Fluoride Scrubbing Efficiency:

During the granulation of wet phosphoric acid into either DAP or MAP using the conventional TVA rotary granulator with preneutralizer process, the neutrilization, granulation, crushing, screening, and transport of dry product does not liberate large quantities of fluoride. The gas streams form the granulation equipment contain mostly water vapor, gaseous ammonia and dust which later have to be scrubbed before discharge to the atmosphere. Low strength phosphoric acid (about 28% P_2O_5 by weight) is used to capture the ammonia and dust and return it to the granulation process. Fluoride, in various forms is, liberated from the acid into the air stream in the acid scrubbing stage. This fact causes a problem in determining fluoride scrubbing efficiency; that is, compared to the normal perception of efficiency defined as the removal of a percentage of a pollutant entering the scrubbing system. This fluoride liberation (release) is in proportion to the fluoride vapor pressure developed in the scrubbing liquor and the vapor pressure is influenced by two factors; temperature of the scrubbing liquor, and concentration of available fluoride. Fluoride control therefore, is achieved by reducing the fluoride vapor pressure in the scrubber system. Fluoride scrubbing efficiency often turns out to be in the order of as much as -200% efficiency or in other words, twice as much fluoride exits the acid scrubbing stage as enters while efficiencies for ammonia and dust are typically above 98%.

One way to reduce the vapor pressure of fluoride in the scrubber is to increase the ammonia to phosphoric acid mole ratio of the scrubbing acid or in other words to increase the pH of the scrubbing acid. The increased ammonia tends to hold the fluoride in combination with other elements in the acid therefore, not allowing it to be liberated into the air stream. A second method of reducing the fluoride vapor pressure is to lower the concentration of fluoride in the acid scrubbing liquor. 28% P_2O_5 phosphoric acid typically contains from 2.0 to 2.5% fluoride, therefore, lowering the strength to about 10% by diluting it with pond water with a fluoride content of about 0.45%, results in a final concentration of about 1.0% fluoride.

The Cooler, Dryer and Screens & Mills (S/M) scrubbers will all be modified to utilize low strength (about 10% P_2O_5) acid taking advantage of the second method of fluoride release control. These scrubbers collect mostly product dust which has a high mole ratio (1 for MAP and 2 for DAP). When this dust is captured in the weak acid, it tends to quickly increase the mole ratio of the weak scrubbing liquor and as some gaseous ammonia is released in the dryer, the weak scrubbing liquor will have mole ratios in the order of 1.0 to 1.5. This increased mole ratio raises the pH of the weak acid scurubbing liquor thus, taking advantage of the first fluoride vapor pressure reduction method as well. A 0.5 or better mole ratio is considered the optimum for reduction of fluoride release.

The dual mole scrubber system is designed to reduce fluoride emissions by increasing the mole ratio of the scrubbing liquor. Under normal operation the first stage would have a mole ratio of about 1.4 while the second stage would be about 0.5. The end result is that the Reactor/Granulator (R/G) and the above three scrubbers liberate less fluoride containing compounds into the air stream than conventional 28% P_2O_5 acid scrubbers.

In order to remove fluoride compounds from the scrubber gas steam you must consider tail gas scrubbers. The BFL vaporizer/scrubber is the tail gas scrubber for the dual mole scrubbing of the R/G gases. During DAP production the fluoride scrubbing efficiency is about 70.7% and during MAP production about 75.5%. These efficiencies seem low but in concert with the lower evolution of fluoride experienced with the dual mole scrubber, we should be able to meet an emission value of 0.024 lb/ton P_2O_5 for DAP and 0.029 for MAP from the Reactor/Granulator scrubbing system.

The Dryer and S/M scrubbers are followed by a counter current cross-flow scrubber. This scrubber uses the complex pond water as a scrubbing medium. The fluoride concentration in the Farmland Hydro pond water runs a maximum of about 0.45% which is lower than most phosphate fertilizer manufacturers because we recover fluorine in our evaporators and sell it as a by-product. By comparison, it is not unusual to see fluoride values in other manufacturers' pond water of over 1.0%. Large amounts of pond water (about 1,200 gpm) are used in this scrubber and therefore the exiting air contains about as low a concentration of fluoride as can be achieved with pond water even though the actual scrubbing efficiency works out to be less than 4%. Expected emissions would be 0.014 lb/ton P_2O_5 for DAP and 0.011 for MAP from the cross-flow scrubber.

The cooler scrubber is shown without tail end scrubbing and this could be done with pond water as the scrubbing liquor for a capital cost of about $500,000.00 amortized over 20 years of life plus about $2,000.00 per year power cost and $5,000.00 per year maintenance for a yearly cost of $65,730.00. Assuming the same efficiency as the BFL vaporizer of 75.5%, this would result in a reduction from a maximum of 5.3 tons per year of fluoride to a maximum of 1.3 tpy. The cost of this reduction would be $16,433.00 per ton.

It has been proposed that neutralization of the scrubbing water with lime (calcium oxide) would cause the fluoride in the water to form calcium-fluoride (CaF_2) which precipitates and produces a low fluoride tail gas scrubbing liquor. Test results show that neutralization to a pH of about 4 will result the lowest practical achievable fluoride concentration of about 300 to 500 ppm. If large amounts of water are used (in the order of 15 to 20 gallons per 1,000 cubic feet of air) we could obtain exhaust temperatures of about 120 °F and could achieve about 95% fluoride

scrubbing efficiency. This would result in a reduction of maximum fluoride emissions per year of 15.6 tons.

An appropriate system for the liming scrubbing water would require a separate granulation cooling pond of approximately 30 acres at a nominal 5 foot depth for a total of 45 million gallons. The scrubbing requirements would be about 3,000 gallons per minute (gpm). Pumping requirements are assumed to be 3,000 gpm at 50 feet of head requiring 58 horsepower at 65% pumping efficiency. At $0.05 per kwh, we would consume about $22,400 per year pumping cost. A lined 30 acre pond would cost about $4,500,000 complete. The estimated cost of the liming station and associated piping and pumping is $1,500,000 and the cost of operating, including power cost, about $15,000 per year.

The practical problems that would be encountered with such a design are that the water will also pick up ammonia. Assuming that the ammonia scrubbing efficiency is only 50%, at a maximum of 205 lb/hr input, a scrubber return water loading of 102.5 lb/hr would be generated, for a return water concentration of about 68.3 ppm. Assuming at least 10% blow-down to keep the ammonia concentration near that of pond water or about 650 ppm, and using as much of this water in the granulation process as possible and performing a heat balance around the pond results in a net make-up of 282 gpm. As we would use our pond water as the make-up, then we would need to lime this water at 853 lbs. per hour. Total liming cost for the make-up water is about $186,800 per year. One other problem would be encountered and that is the problem of disposal of the sludge generated by the liming process. There would be about 3,759 tons per year generated and if a disposal cost of $50.00 per ton is assumed, this amounts to an annual cost of $261,650. Looking at this whole system on an annual cost basis assuming a 20 year life with an annual rate of return of 10% gives:

$6,000,000 @ 10% for 20 years	$704,758
lime cost	189,150
power	22,300
operating	15,000
maintenance	10,000
sludge disposal	261,650
TOTAL	$1,202,938

The total cost to reduce the pollutant loading by 15.6 tons of fluoride per year is:

1,202,938/15.6 = $77,110 per ton

In conclusion, lower total emissions of fluoride can not practically be achieved without excessive expenditures on the part of the applicant. It is my understanding that Mississippi Chemical tried this scrubbing method several years ago and found that operating problems involving calcium build-up or fall-out in the tail gas scrubber caused them to switch to straight pond water scrubbing.

ATTACHMENT 4

Concerning the R/G Stack Temperature:

The Reactor Granulator (R/G) scrubber gas exhaust will contain about 42% water by volume, which accounts for the higher than anticipated (178 °F) stack temperature. This stack moisture content is high due to the fact that the ammonia vaporization does not require all the heat the stack can give-up. This should not pose an emission problem however, since experience has shown that the dual mole scrubber releases less fluoride than a conventional single pass acid scrubber.

"new" emissions levels for a new or modified emissions unit which has not begun normal operation is its potential to emit.

An emissions increase or decrease is creditable only if the relevant reviewing authority has not relied on it in issuing a PSD permit for the source, and the permit is still in effect when the increase in actual emissions from the proposed modification occurs. A reviewing authority relies on an increase or decrease when, after taking the increase or decrease into account, it concludes that a proposed project would not cause or contribute to a violation of an increment or ambient standard. In other words, an emissions change at an emissions point which was considered in the issuance of a previous PSD permit for the source is not included in the source's "net emissions increase" calculation. This is done to avoid "double counting" of emissions changes.

> *For example, an emissions increase or decrease already considered in a source's PSD permit (state or federal) can not be considered a contemporaneous increase or decrease since the increases or decrease was obviously relied upon for the purpose of issuing the permit. Otherwise the increase or decrease would not have been specified in the permit. In another example, a decrease in emissions from having previously switched to a less polluting fuel (e.g., oil to gas) at an existing emissions unit would not be creditable if the source had, in obtaining a PSD permit (which is still in effect) for a new emissions unit, modeled the source's ambient impact using the less polluting fuel.*

Changes in PM (PM/PM-10), SO_2 and NO_x emissions are a subset of creditable contemporaneous changes that also affect the available increment. For these pollutants, emissions changes which do not affect allowable PSD increment consumption are not creditable.

ATTACHMENT 6

Concerning Ammonia Handling:

The ammonia handling system including tanks and associated piping and valves are installed according to the appropriate sections of the American National Standards Institute, Inc. (ANSI) Standard K61.1 titled Safety Requirements for the Storage and Handling of Anhydrous Ammonia. Farmland Hydro is involved with a self initiated/self imposed program of ammonia tank inspection on a schedule of every five years. During these times we also send out all valves and safety relief devices for certified repair. We have always been attentive to such things as valve stem and flange leaks. This is not only an environmental and safety concern but also a loss of a valuable commodity. Farmland several years ago had a problem with one particular ammonia safety relief valve on four separate occasions, which was supposed to release at above 250 psi and in fact was found to be defective and opened above 165 psi. It took some time to locate the problem and then the entire system had to be shutdown in order to replace the offending safety release valve.

Farmland Hydro presently receives all of their ammonia by pipeline but, when we received ammonia by rail cars we were careful to make sure that all unloading rubber hoses were in good working condition and that no liquid ammonia was left in the hoses before disconnecting rail cars.

Concerning ammonia use in the granulation of DAP and MAP, the control panel is equipped with an ammonia tank over-pressure alarm and an ammonia tank over-full alarm. No ammonia flows are started to the process without the appropriate scrubber system operating. And finally all pertinent scrubber functions will be monitored during operation to assure proper operation at all times. Farmland Hydro in conjunction with the Florida Phosphate Council is in the process of drafting a memorandum of understanding for best management practices for handling and using anhydrous ammonia.

United States Department of the Interior

FISH AND WILDLIFE SERVICE
75 Spring Street, S.W.
Atlanta, Georgia
30303

April 10, 1992

RECEIVED
APR 13 1992
Bureau of
Air Regulation

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

Dear Mr. Fancy:

We have completed our review of the material that you sent us regarding Farmland Hydro's proposal to expand the granular monoammonium phosphate and diammonium phosphate production capacity at their Green Bay facility. The Green Bay Complex is located near Bartow, approximately 112 km southeast of the Chassahowitzka Wilderness Area (WA), a class I air quality area administered by the U.S. Fish and Wildlife Service. The higher production rates will result in a significant increase in fluoride emissions and a small increase in emissions of particulate matter. Based on this small increase in emissions and the distance from the facility, we do not anticipate that the proposed project will have an impact on sensitive resources in the Chassahowitzka WA.

We appreciate the opportunity to comment on Farmland Hydro's permit application. If you have any further questions regarding this matter, please contact Tonnie Maniero of our Air Quality office in Denver at 303/969-2071.

Sincerely yours,

John R. Eadie

John R. Eadie
Acting Regional Director

cc: Jellell Harper, Chief
Air Enforcement Branch
Air, Pesticides and Toxic Management Division
U.S. EPA, Region 4
345 Courtland Street, NE
Atlanta, Georgia 30365

N. Hamfa
C. Holladay
B. Thomas
CHF/BA/PL
P. Raval

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 27, 1992

Ms. Jewell A. Harper, Chief
Air Enforcement Branch
U.S. EPA, Region IV
345 Courtland Street, N.E.
Atlanta, Georgia 30308

Dear Ms. Harper:

RE: Farmland Hydro, L.P.
MAP/DAP Granulation Plant North
Polk County, PSD-FL-186

The Department has received the above referenced PSD application package. Please review this package and forward your comments to the Department's Bureau of Air Regulation. The Bureau's FAX number is (904)922-6979.

If you have any questions, please contact Willard Hanks or Cleve Holladay at (904)488-1344 or write to me at the above address.

Sincerely,

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

CHF/pa

Enclosures

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 27, 1992

Mrs. Chris Shaver, Chief
Permit Review and Technical Support Branch
National Park Service-Air Quality Division
Post Office Box 25287
Denver, Colorado 80225

Dear Mrs. Shaver:

RE: Farmland Hydro, L.P.
MAP/DAP Granulation Plant North
Polk County, PSD-FL-186

The Department has received the above referenced PSD application. Please review this package for completeness and forward your comments to the Bureau of Air Regulation. The Bureau's FAX number is (904)922-6979.

If you have any questions, please call Willard Hanks or Cleve Holladay at (904)488-1344 or write to me at the above address.

Sincerely,

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

CHF/pa

Enclosure

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

KA 123-92-01

March 26, 1992

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

Subject: Farmland PSD Permit Application

Dear Mr. Holladay:

As per our conversation today, enclosed is a diskette that contains the input and output modeling files of the fluoride and ammonia air quality impact analysis in support of the Farmland PSD permit application submitted previously.

If you have any questions concerning the data on the enclosed diskette, please give our office a call.

Very truly yours,

KOOGLER & ASSOCIATES

Raval

Pradeep A. Raval

PAR:mab

cc: Charles Jenkins, Farmland

Best Available Copy

FEDERAL EXPRESS [redacted]

QUESTIONS? CALL 800-238-5355 TOLL FREE.

AIRBILL
PACKAGE TRACKING NUMBER 2229318560

2229318560

RECIPIENT'S COPY

1 [redacted] Date 3/26/92

From (Your Name) Please Print: Pradeep Paul
Your Phone Number (Very Important): (606) 377-
Company: OLER & ASSOC
Department/Floor No.
Street Address: 4 NW 13TH ST
City: N'VILLE
State
ZIP Required

2 To (Recipient's Name) Please Print: Mr. Clete Holladay
Recipient's Phone Number (Very Important)
Company: FDER
Department/Floor No.
Exact Street Address (We Cannot Deliver to P.O. Boxes or P.O. Zip Codes.): 2600 Blair Stone Road
City: Tallahassee
State: FL
ZIP Required: 32399

YOUR INTERNAL BILLING REFERENCE INFORMATION (optional) (First 24 characters will appear on invoice.): 123-22-01

H IF HOLD FOR PICK-UP, Print FEDEX Address Here
Street Address
City
State
ZIP Required

3 PAYMENT 1 [X] Bill Sender 2 [ ] Bill Recipient's FedEx Acct. No. 3 [ ] Bill 3rd Party FedEx Acct. No. 4 [ ] Bill Credit Card
5 [ ] Cash/Check [redacted]

4 SERVICES (Check only one box)

Priority Overnight (Delivery by next business morning†)	Standard Overnight (Delivery by next business afternoon†)
11 [ ] YOUR PACKAGING	51 [ ] YOUR PACKAGING
16 [ ] FEDEX LETTER *	56 [ ] FEDEX LETTER *
12 [ ] FEDEX PAK *	52 [ ] FEDEX PAK *
13 [ ] FEDEX BOX	53 [ ] FEDEX BOX
14 [ ] FEDEX TUBE	54 [ ] FEDEX TUBE
Economy Two-Day (Delivery by second business day†)	**Government Overnight** (Restricted to authorized users only)
30 [ ] ECONOMY	46 [ ] GOV'T LETTER
	41 [ ] GOV'T PACKAGE

Freight Service (for Extra Large or any package over 150 lbs.)
70 [ ] OVERNIGHT FREIGHT ** (Confirmed reservation required)
80 [ ] TWO-DAY FREIGHT **
† Delivery commitment may be later in some areas
* Declared Value Limit $100.
** Call for delivery schedule.

5 DELIVERY AND SPECIAL HANDLING (Check services required)

1 [ ] HOLD FOR PICK-UP (Fill in Box H)
2 [ ] DELIVER WEEKDAY
3 DELIVER SATURDAY (Extra charge) (Not available to all locations) [ ]
4 [ ] DANGEROUS GOODS (Extra charge)
5 [ ]
6 [ ] DRY ICE ________ Lbs
7 [ ] OTHER SPECIAL SERVICE ________
8 [ ]
9 [ ] SATURDAY PICK-UP (Extra charge)
10 [ ]
11 [ ]
12 [ ] HOLIDAY DELIVERY (If offered) (Extra charge)

6 PACKAGES | WEIGHT In Pounds Only | YOUR DECLARED VALUE
Total | Total | Total

DIM SHIPMENT (Chargeable Weight)
[ ] ________ lbs.
L x W x H =

Received At
1 [ ] Regular Stop 3 [ ] Drop Box
4 [ ] B.S.C.
2 [ ] On-Call Stop 5 [ ] Station

Emp. No. | Date
[ ] Cash Received
[ ] Return Shipment
[ ] Third Party [ ] Chg. To Del. [ ] Chg. To Hold
Street Address
City State Zip
Received By:
X
Date/Time Received FedEx Employee Number

7 Release Signature:
FedEx Emp. No. Date/Time

Federal Express Use
Base Charges
Declared Value Charge
Other 1
Other 2
Total Charges

REVISION DATE 6/91
PART #137204 FXEM 2/92
FORMAT #099
099

Farmland Hydro, L.P.

Charles W. Jenkins
Environmental Coordinator

Green Bay Plant
County Road 640
Post Office Box 960
Bartow, Florida 33830
Tele.: 813 533-1141

March 24, 1992

Mr. Clair H. Fancy
State of Florida Department
of Environmental Regulation
2600 Blair Stone Road
Tallahassee, Florida 32301

Dear Mr. Fancy,

Please find enclosed one completed application for construction/modification for a granulation fertilizer plant.

Also enclosed is the application fee and supporting documentation.

If you should have any questions please contact me.

Very truly yours,

Charles Jenkins
Environmental Coordinator

CWJ:dr/cwj2192

Farmland Hydro, L.P.

Charles W. Jenkins
Environmental Coordinator

Green Bay Plant
County Road 640
Post Office Box 960
Bartow, Florida 33830
Tele.: 813 533-1141

March 24, 1992

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State of Florida Department
of Environmental Regulation
2600 Blair Stone Road
Tallahassee, Florida 32301

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CWJ:dr/cwj2192

001031

Farmland Hydro, L.P.

Charles W. Jenkins
Environmental Coordinator

Green Bay Plant
County Road 640
Post Office Box 960
Bartow, Florida 33830
Tele.: 813 533-1141

March 24, 1992

Mr. Clair H. Fancy
State of Florida Department
of Environmental Regulation
2600 Blair Stone Road
Tallahassee, Florida 32301

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If you should have any questions please contact me.

Very truly yours,

Charles Jenkins
Environmental Coordinator

CWJ:dr/cwj2192

Farmland Hydro, L.P.
P.O. Box 7305
Kansas City, Missouri 64116

CHECK NO. 69982363

80-182
1019

16 25 F0345 03/20/92
CO. BR. VEND. NO. CHECK DATE

PAY EXACTLY $****7,500 DOLLARS AND 00 CENTS

CHECK AMOUNT
$****7,500.00

VOID AFTER 180 DAYS

Boatmen's Bank of Marshall
Marshall, Missouri 65340

Farmland Hydro, L.P.

PAY TO THE ORDER OF
FLORIDA DEPARTMENT OF
ENVIRONMENTAL REGULATION
4520 OAK FAIR BLVD
TAMPA FL 33610

[redacted]

Farmland

A Delaware Limited Partnership

HYDRO

FLH-7204 (01/91)

25 F0345 FLORIDA DEPARTMENT OF

REMITTANCE ADVICE · 82363 CHECK NUMBER 69982363

O.	BR.	VENDOR NO.	VENDOR NAME	DESCRIPTION	P.O.	VOUCHER	INVOICE NO.	INV. DATE	INVOICE AMOUNT	DISCOUNT TAKEN	AMOUNT PAID
						91211	31992	03 19 92	7,500.00		7,500.00
				TOTALS					7,500.00	-	7,500.00

Farmland Hydro, L.P.
P.O. Box 7305
Kansas City, Missouri 64116

I-6310 (10/91)

Farmland Hydro, L.P.
P.O. Box 7305
Kansas City, Missouri 64116

CHECK NO. 69982363

80-182
1019

16 25 F0345 03/20/92
CO. BR. VEND. NO. CHECK DATE

PAY EXACTLY $****7,500 DOLLARS AND 00 CENTS

CHECK AMOUNT
$****7,500.00
VOID AFTER 180 DAYS

Boatmen's Bank of Marshall
Marshall, Missouri 65340

Farmland Hydro, L.P.

PAY TO THE ORDER OF
FLORIDA DEPARTMENT OF
ENVIRONMENTAL REGULATION
4520 OAK FAIR BLVD
TAMPA FL 33610

[redacted]

STATE OF FLORIDA

DEPARTMENT OF ENVIRONMENTAL REGULATION

$7,500 pd. 3-25-92 Recpt #180750

TWIN TOWERS OFFICE BUILDING
2600 BLAIR STONE ROAD
TALLAHASSEE, FLORIDA 32399-2400

AC 53-210886
PSD-FL-186

BOB MARTINEZ
GOVERNOR

DALE TWACHTMANN
SECRETARY

APPLICATION TO OPERATE/CONSTRUCT AIR POLLUTION SOURCES

SOURCE TYPE: MAP/DAP GRANULATION DRYER & R/G [ ] New[1] [X] Existing[1]

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

COMPANY NAME: Farmland Hydro, L.P. - Green Bay Complex 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) MAP/DAP Granulation Plant North

SOURCE LOCATION: Street County Road 640 West City Bartow

UTM: East 17-409.5 km North 3079.5 km

Latitude 27 ° 50 ' 37 "N Longitude 81 ° 56 ' 05 "W

APPLICANT NAME AND TITLE: C. M. Farris - Vice President Operations

APPLICANT ADDRESS: P. O. Box 960, Bartow, Florida 33830

SECTION I: STATEMENTS BY APPLICANT AND ENGINEER

A. APPLICANT

I am the undersigned owner or authorized representative* of Farmland Hydro, L.P.

I certify that the statements made in this application for a construction modification 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 contro facilities in such a manner as to comply with the provision of Chapter 403, Florid Statutes, and all the rules and regulations of the department and revisions thereof. also understand that a permit, if granted by the department, will be non-transferabl and I will promptly notify the department upon sale or legal transfer of the permitte establishment.

*Attach letter of authorization

Signed: C M Farris

C. M. Farris - Vice President Operations
Name and Title (Please Type)

Date: 3/24/92 Telephone No. (813) 533-1141

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 hav been ~~designed~~/examined by me and found to be in conformity with modern engineerin principles applicable to the treatment and disposal of pollutants characterized in th permit application. There is reasonable assurance, in my professional judgment, tha

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

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

Signed _____

_____
Name (Please Type)

_____
Company Name (Please Type)

_____
Mailing Address (Please Type)

Florida Registration No. _____ Date: _____ Telephone No. _____

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.

_____

_____

_____

_____

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

Start of Construction _____ Completion of Construction _____

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.)

_____

_____

_____

_____

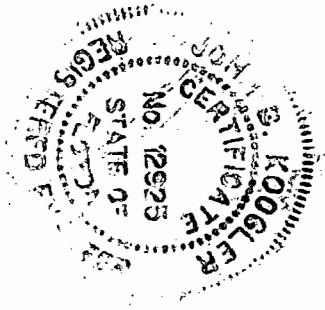
D. Indicate any previous DER permits, orders and notices associated with the emission point, including permit issuance and expiration dates.

_____

_____

_____

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: 3/23/92 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.

See attached PSD Report for Process Description.

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

Start of Construction May 4, 1992 Completion of Construction July 3, 1993

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.)

Dual Mole Scrubber	$1,200,000.00
BFL Vaporizer After Scrubber	500,000.00
Product Cooler Scrubber	750,000.00
Total	$2,450,000.00

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

North DAP/MAP/GTSP Fertilizer Plant, DER File No. A053-171758 issued April 13, 1990 with expiration date of April 4, 1995.

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

if power plant, hrs/yr ____; if seasonal, describe: 8760 hrs/yr

F. If this is a new source or major modification, answer the following questions. (Yes or No)

1. Is this source in a non-attainment area for a particular pollutant? NO

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

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

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

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

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

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

5. Do "National Emission Standards for Hazardous Air Pollutants" (NESHAP) apply to this source? NO

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

   a. If yes, for what pollutants? NA

   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 juatification 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		
Phosphoric Acid	Fluoride	2.11	124,800 lb/hr MAP of P205 (62.4 tph P205) 92,000 lb/hr DAP of P205 (46.0 tph P205)	
Anhydrous Ammonia			32,060 lb/hr MAP 43,714 lb/hr DAP	

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

1. **Total Process Input Rate (lbs/hr):** 124,800 lb/hr P205 MAP; 92,000 lb/hr P205 DAP

2. **Product Weight (lbs/hr):** 240,000 lb/hr MAP; 200,000 lb/hr DAP

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

(See also Section 3 in PSD Report)

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	
Part. Matter	22.5	98.6	17-2.610	37.2	22.5	98.6	
Fluoride	3.74	16.4	17-2.660	3.74	3.74	16.4	

[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)

Name and Type (Model & Serial No.)	Contaminant	Efficiency	Range of Particles Size Collected (in microns) (If applicable)	Basis for Efficiency (Section V Item 5)
Double Mole Scrubber	Particulate	98.5%	0 - 25	Mfr
Double Mole Scrubber	Fluoride	98.5%	NA	
BFL Vaporizer	Fluoride	95.0%	NA	
Prod. Cooler Scrubber	Particulate	98.0%	0 - 25	

E. Fuels

Type (Be Specific)	Consumption*		Maximum Heat Input (MMBTU/hr)
	avg/hr	max./hr	
Natural Gas	0.03	0.05	50

*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: 1000 BTU/~~lb~~cf _____ BTU/gal

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

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

Annual Average NA Maximum _____

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

Scrubber pond water recirculated.

MAP/DAP Main Stack (Existing)

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

Stack Height: 129 ft. Stack Diameter: 7.5 ft.

Gas Flow Rate: 114,000 ACFM 88,000 DSCFM Gas Exit Temperature: 108 °F.

Water Vapor Content: 16 % Velocity: 43.0 FPS

SECTION IV: INCINERATOR INFORMATION

NOT APPLICABLE

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)_____

MAP/DAP Reactor-Granulator Stack (Proposed)

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

Stack Height: 129 ft. Stack Diameter: 5'6" ft.

Gas Flow Rate: 49,700 ACFM 27,000 DSCFM Gas Exit Temperature: 178 °F.

Water Vapor Content: 34 % Velocity: 34.9 FPS

SECTION IV: INCINERATOR INFORMATION

NOT APPLICABLE

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)							

escription of Waste _____

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

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

anufacturer _____

ate Constructed _____ Model No. _____

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

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

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

f 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.

pe 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 must be included where applicable.

SECTION V: SUPPLEMENTAL REQUIREMENTS

SEE ATTACHED REPORT

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)]

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.

3. Attach basis of potential discharge (e.g., emission factor, that is, AP42 test).

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.)

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).

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.

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).

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.

9. The appropriate application fee in accordance with Rule 17-4.05. The check should be made payable to the Department of Environmental Regulation.

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.

SECTION VI: BEST AVAILABLE CONTROL TECHNOLOGY

SEE ATTACHED REPORT

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:

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

SEE ATTACHED REPORT

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.

NORTH PLANT INFORMATION

Florida Department of Environmental Regulation

Southwest District • 4520 Oak Fair Boulevard • Tampa, Florida 33610-7347 • 813-623-5561

Bob Martinez, Governor Dale Twachtmann, Secretary John Shearer, Assistant Secretary
Dr. Richard Garrity, Deputy Assistant Secretary

APPLICANT:
Farmland Industries, Inc.
P.O. Box 960
Bartow, Florida 33830

PERMIT/CERTIFICATION
Permit No.: AO53-171758
County: Polk
Expiration Date: 04/04/95
Project: North DAP/MAP/GTSP
Fertilizer Plant

This permit is issued under the provisions of Chapter 403, Florida Statutes, and Florida Administrative Code Rules 17-2 & 17-4. The above named permittee is hereby authorized to perform the work or operate the facility shown on the approved drawings(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 operation of a MAP/DAP/GTSP plant consisting of the following components: a reactor/blunger system with emissions controlled by venturi/cyclonic acid scrubber; a natural gas-fired dryer with emissions controlled by a dry cyclone and a venturi/cyclonic acid scrubber; a mill/screens system with emissions controlled by a dry cyclone and a venturi/cyclonic acid scrubber; and a cooler with emissions controlled by a dry cyclone and the mills/screens system venturi/cyclonic acid scrubber. The exhausts from the reactor/blunger, dryer, and mills/screens/cooler scrubbers are further scrubbed with pond water in a shared cross-flow scrubber then emitted through a shared stack. The permitted production rates are as follows:

Product	Rate
MAP	70 TPH
GTSP	33.2 TPH
DAP	50 TPH

Location: S.R. 640 West, South of Bartow

UTM: 17-409.5E 3079.5N NEDS No.: 0053 Point ID: 29

Replaces Permit Nos. AC53-166067 and AO53-160330.
Old R/B stack

PERMITTEE:
Farmland Industries, Inc.

PERMIT NO.: AO53-171758
PROJECT: North MAP/DAP/GTSP Fertilizer Plant

SPECIFIC CONDITIONS:

1. A part of this permit is the attached 15 General Conditions.

2. The maximum permitted production rate shall be dependent upon the specific product being manufactured as follows:

Product	Production Rate
MAP	70 TPH
GTSP	33.2 TPH
DAP	50 TPH

The permittee shall maintain logs that can be used to determine compliance with these restrictions. These logs shall include the hourly quantity of phosphate rock and phosphoric acid feed rate to the plant along with the P205 content.

3. Test the emissions for the following pollutants at intervals of 6 months from the date September 22, 1989 and submit a copy of test data to the Air Section of the Southwest District Office within 45 days of such testing (Subsection 17-2.700(2), Florida Administrative Code):

(X) Particulates
(X) Fluorides
(X) Opacity

Within 30 days of switching production to another one of the three permitted product types, emissions shall be tested for that product type if it has not previously been tested in that current six-month testing interval.

4. In accordance with the RACT particulate allocation, the maximum allowable particulate emissions for this source shall be 26.9 lbs/hour or as calculated by the Process Weight Table contained in F.A.C. Rule 17-2.610, whichever is less.

5. The visible emissions shall not be equal to or greater than 20% opacity in accordance with Subsection 17-2.610(2)(a), F.A.C.

SPECIFIC CONDITIONS (cont'd):

6. The maximum allowable fluoride emissions for the source shall be dependent upon the specific product being manufactured as follows:

Product	Allowable Fluoride Emissions		
	lbs/Ton P_2O_5 input	lbs/hr	TPY
GTSP	0.53	8.18	35.8
MAP	0.12	3.4	14.9
DAP	0.06	2.4	10.5

7. Compliance with the emission limitations of Specific Condition Nos. 4, 5 and 6 shall be determined using EPA Methods 1, 2, 4, 5, 9, and 13A or 13B, contained in 40 CFR 60, Appendix A and adopted by reference in Section 17-2.700, F.A.C. The minimum requirements for stack sampling facilities, source sampling and reporting, shall be in accordance with Section 17-2.700, F.A.C. and 40 CFR 60, Appendix A.

8. The average gas pressure drop across the mill/screens/cooler scrubber is 5 inches of water. The pressure drop shall be measured and logged at least twice per week, just before and right after a maintenance down-day, to establish a database of pressure drop ranges at which the scrubber operates. The pressure drop shall be measured during compliance tests and reported in the compliance test reports. Unless a stack test shows compliance at a lesser pressure drop, at no time shall the pressure drop fall below 4.9 inches of water.

9. Approved compliance testing of emissions shall be conducted while simultaneously operating the reactor/blunger, dryer, and mill/screens/cooler within $\pm$10% of the permitted capacities. A compliance test submitted at operating levels less than 90% of the permitted capacity will automatically constitute an amended permit at the lesser rate until another test, showing compliance at a higher capacity is submitted. Any time the permitted operating capacity of the plant is exceeded by more than 10%, a compliance test shall be performed within 30 days of initiation of the higher rate and the results submitted to the Department. Acceptance of the test by the Department will automatically constitute an amended permit at the greater rate. Emission limitations are not automatically adjusted above the allowables established by this permit. Failure to submit the input rates and actual operating conditions may invalidate the test (Subsection 403.161(1)(c), Florida Statutes).

SPECIFIC CONDITIONS (cont'd):

10. The production rate during stack testing shall be included in the stack test report in units of tons/hour as well as tons P2O5/hour.

11. The visible emissions compliance test shall be conducted by a certified observer and be a minimum of 60 minutes.

12. The Southwest District Office of the Department of Environmental Regulation shall be notified in writing 15 days prior to compliance testing.

13. No objectionable odors shall be allowed, in accordance with F.A.C. Rule 17-2.620(2).

14. The dryer shall be fired by natural gas only. The normal firing rate is 25M cubic feet/hour or 25 MMBTU/hour. The maximum permitted firing rate is 50 MMBTU/hour.

15. The north fertilizer plant shall be allowed to operate continuously (8760 hours/year).

16. All reasonable precautions shall be taken to prevent and control generation of unconfined emissions of particulate matter in accordance with the provision in Section 17-2.610(3), F.A.C. These provisions are applicable to any source, including, but not limited to, vehicular movement, transportation of materials, construction, alteration, demolition or wrecking; or industrial related activities such as loading, unloading, storing and handling. The permittee shall minimize the escape of unconfined emissions by keeping covers on process equipment, prompt clean up of spills within the plant, and cleaning or wetting areas used by vehicles.

PERMITTEE:
Farmland Industries, Inc.

PERMIT NO.: AO53-171758
PROJECT: North MAP/DAP/GTSP
Fertilizer Plant

SPECIFIC CONDITIONS (cont'd):

17. Submit for this source, each calendar year, on or before March 1, an emission report for the preceding calendar year containing the following information:

(A) Annual amount of materials and/or fuels utilized.
(B) Annual emissions (note calculation basis).
(C) Any changes in the information contained in the permit application.

This report shall be submitted to the Air Section of the Southwest District of the Department of Environmental Regulation.

18. An application to renew this operating permit shall be submitted to the Department at least 60 days prior to the expiration date of this permit.

Issued this 13 day of April 1990.

STATE OF FLORIDA DEPARTMENT OF ENVIRONMENTAL REGULATION

For Richard D. Garrity, Ph.D.
Deputy Assistant Secretary

STACK SAMPLE SUMMARY SHEET

PLANT: MAP
STACK: MAP Dryer (North) PERMIT NO. AO53-171758
TEST DATE: Sep 4, 1991 LIMITS: 26.9 lbs. Particulate/Hour;
0.12 lbs. F/Ton

	RUN NO. 1	RUN NO. 2	RUN NO. 3	AVERAGE
STACK DIAMETER (ft.)	7.500	7.500	7.500	7.500
NOZZLE DIAMETER (inches)	0.245	0.245	0.245	0.245
SAMPLING TIME (min.)	60	60	60	60
STACK TEMPERATURE (deg. F)	118.00	119.00	114.00	117.00
STACK STATIC PRESSURE (WC)	0.300	0.300	0.300	0.300
VOLUME SAMPLED (ACF)	44.336	42.870	46.186	44.464
VOLUME SAMPLED (SCF)	42.760	40.226	43.133	42.040
STACK MOISTURE (%)	9.833	10.105	9.622	9.853
STACK VELOCITY (ft./sec.)	42.925	40.157	43.519	42.200
VOLUMETRIC FLOWRATE (ACFM)	113783.16	106445.34	115355.60	111861.37
VOLUMETRIC FLOWRATE (SCFM)	93867.70	87398.06	96051.56	92439.11
FLUORIDE (mg. collected)	4.620	5.526	3.966	4.704
PARTICULATE (mg. collected)	19.800	23.800	15.800	19.800
FLUORIDE (lbs./hour)	1.342	1.588	1.168	1.366
PARTICULATE (lbs./hour)	5.750	6.841	4.655	5.749
STACK GAS MOLECULAR WT.	28.820	28.787	28.845	28.818
ISOKINETIC VARIATION %	102.479	103.543	101.022	102.348
PRODUCTION RATE(TPH of P2O5)	33.8	33.8	33.8	33.8
PRODUCTION RATE(TPH product)	65.0	65.0	65.0	65.0
FLUORIDE (lbs./ton)	0.021	0.024	0.018	0.021 0.040 (8)
PARTICULATE (lbs./ton)	0.088	0.105	0.072	0.088 0.170 (8)

PERMIT SPECIFIC CONDITIONS

# 8 Average gas pressure drop =	3.50 (4.90	inch H2O min.)

STACK SAMPLE SUMMARY SHEET

PLANT: MAP
STACK: MAP Dryer (North) PERMIT NO. AO53-171758
TEST DATE: Dec 18, 1990 LIMITS: 26.9 lbs. Particulate/Hour;
0.12 lbs. F/Ton

	RUN NO. 1	RUN NO. 2	RUN NO. 3	AVERAGE
STACK DIAMETER (ft.)	7.500	7.500	7.500	7.500
NOZZLE DIAMETER (inches)	0.241	0.241	0.241	0.241
SAMPLING TIME (min.)	60	60	60	60
STACK TEMPERATURE (deg. F)	101.00	102.00	103.00	102.00
STACK STATIC PRESSURE (WC)	0.310	0.310	0.310	0.310
VOLUME SAMPLED (ACF)	36.009	36.352	37.142	36.501
VOLUME SAMPLED (SCF)	35.362	35.123	35.759	35.414
STACK MOISTURE (%)	7.072	7.117	6.999	7.063
STACK VELOCITY (ft./sec.)	33.929	34.687	35.135	34.584
VOLUMETRIC FLOWRATE (ACFM)	89937.25	91946.31	93134.50	91672.69
VOLUMETRIC FLOWRATE (SCFM)	79048.86	80631.98	81632.21	80437.68
FLUORIDE (mg. collected)	4.750	14.520	17.450	12.240
PARTICULATE (mg. collected)	41.800	49.500	40.900	44.067
FLUORIDE (lbs./hour)	1.405	4.410	5.270	3.695
PARTICULATE (lbs./hour)	12.362	15.034	12.353	13.250
STACK GAS MOLECULAR WT.	29.151	29.146	29.160	29.152
ISOKINETIC VARIATION %	104.004	101.271	101.841	102.372
PRODUCTION RATE(TPH of P2O5)	33.8	33.8	33.8	33.8
PRODUCTION RATE(TPH product)	65.0	65.0	65.0	65.0
FLUORIDE (lbs./ton)	0.022	0.068	0.081	~~0.057~~ .109
PARTICULATE (lbs./ton)	0.190	0.231	0.190	~~0.204~~ .392

PERMIT SPECIFIC CONDITIONS

# 8 Average gas pressure drop =	3.50 (4.90	inch H2O min.)

STACK SAMPLE SUMMARY SHEET

PLANT: MAP
STACK: MAP Dryer (North) PERMIT NO. AO53-160330
TEST DATE: Apr 17, 1990 LIMITS: 30.2 lbs. Particulate/Hour;
0.12 lbs. F/Ton

	RUN NO. 1	RUN NO. 2	RUN NO. 3	AVERAGE
STACK DIAMETER (ft.)	7.500	7.500	7.500	7.500
NOZZLE DIAMETER (inches)	0.241	0.241	0.241	0.241
SAMPLING TIME (min.)	60	60	60	60
STACK TEMPERATURE (deg. F)	100.00	102.00	102.00	101.33
STACK STATIC PRESSURE (WC)	0.000	0.000	0.000	0.000
VOLUME SAMPLED (ACF)	41.097	41.013	42.387	41.499
VOLUME SAMPLED (SCF)	39.454	39.730	40.624	39.936
STACK MOISTURE (%)	6.277	6.236	6.107	6.207
STACK VELOCITY (ft./sec.)	38.456	38.607	39.297	38.787
VOLUMETRIC FLOWRATE (ACFM)	101935.67	102337.07	104164.68	102812.47
VOLUMETRIC FLOWRATE (SCFM)	90635.15	90707.74	92454.56	91265.81
FLUORIDE (mg. collected)	10.450	11.290	12.120	11.287
PARTICULATE (mg. collected)	46.000	39.500	35.600	40.367
FLUORIDE (lbs./hour)	3.176	3.410	3.649	3.412
PARTICULATE (lbs./hour)	13.980	11.931	10.719	12.210
STACK GAS MOLECULAR WT.	29.247	29.252	29.267	29.255
ISOKINETIC VARIATION %	101.205	101.830	102.155	101.730
PRODUCTION RATE(TPH of P2O5)	30.0	31.5	31.5	31.0
PRODUCTION RATE(TPH product)	57.7	60.6	60.6	59.6
FLUORIDE (lbs./ton)	0.055	0.056	0.060	0.057 0.110 (P2O5)
PARTICULATE (lbs./ton)	0.242	0.197	0.177	0.205 0.394 (P2O5)

PERMIT SPECIFIC CONDITIONS

8 Average gas pressure drop = 16.30 inch H2O

Form No. ____
Effective Date ____
DER Application No. ____

Best Available Copy

ANNUAL OPERATION REPORT FORM FOR AIR EMISSIONS SOURCES

For each permitted emission point, please submit a separate report for calendar year 1990 prior to March 1st of the following year.

I GENERAL INFORMATION

1. Source Name: Farmland Industries, Inc.
2. Permit Number: A053-17158
3. Source Address: P. O. Box 960
   Bartow, Florida 33830
4. Description of Source: MAP/DAP/TSP Dryer Scrubber

II ACTUAL OPERATING HOURS: 24 hrs/day 7 days/wk 42.820 MAP 2,843 DAP wks/yr 76

III RAW MATERIAL INPUT PROCESS WEIGHT: (List separately all materials put into process and specify applicable units if other than tons/yr)

Raw Material	Input Process Weight	
30% Phosphoric Acid as P2O5 (MAP)	58,320	tons
54% Phosphoric Acid as P2O5 (MAP)	141,699	tons
Ammonia as NH3 (MAP)&(DAP)	34,339	tons
30% Phosphoric Acid as P2O5 (DAP)	3,365	tons
54% Phosphoric Acid as P2O5 (DAP)	3,669	tons

IV PRODUCT OUTPUT (Specify applicable units)

398,065 Tons MAP

14,917 Tons DAP

0 Tons TSP

DER Form 17-1.202(6)
Effective November 30, 1982

STATE OF FLORIDA
DEPARTMENT OF ENVIRONMENTAL REGULATION

SOUTHWEST DISTRICT
4520 OAK FAIR BLVD.
TAMPA, FLORIDA 33610-7347
813-623-5561
Suncom—552-7612

ANNUAL OPERATION REPORT FORM FOR AIR EMISSIONS SOURCES

For each permitted emission point, please submit a separate report for calendar year 19[illegible] prior to March 1st of the following year.

I GENERAL INFORMATION

1. Source Name: Farmland Hydro, L.P.
2. Permit Number: A053- 171758
3. Source Address: P. O. Box 960
   Bartow, Florida 33830
4. Description of Source: MAP/DAP/TSP DRYER SCRUBBER

II ACTUAL OPERATING HOURS: 24 hrs/day 7 days/wk 43.83 wks/yr

III RAW MATERIAL INPUT PROCESS WEIGHT: (List separately all materials put into process and specify applicable units if other than tons/yr)

Raw Material	Input Process Weight	
30% PHOSPHORIC ACID AS P_2O_5	55,939	tons/
54% PHOSPHORIC ACID AS P_2O_5	153,228	tons/
AMMONIA AS NH_3	53,118	tons/
		tons/
		tons/

IV PRODUCT OUTPUT (Specify applicable units)

400,936 SHORT TONS OF MAP

1,291 SHORT TONS OF DAP

0 SHORT TONS OF TSP

SHUT DOWN SOURCES

Florida Department of Environmental Regulation

Southwest District • 4520 Oak Fair Boulevard • Tampa, Florida 33610-7347

Lawton Chiles, Governor 813-623-5561 FAX 813-272-2279 Carol M. Browner, Secretary

June 17, 1991

Mr. Charles W. Jenkins
Environmental Coordinator
Farmland Industries, Inc.
Post Office Box 960
Bartwo, Florida 33830-0960

Dear Mr. Jenkins:

Re: Polk County - AP
Deletion of Permits
A053-151296, A053-157062 & A053-157064

Thank you for your letter of June 13, 1991 informing the Department that the three above referenced operating permits will not longer be needed and the permits are to be considered surrendered. This will help us to keep our air files up to date. As of June 17, 1991 the three referenced operating permits for the rock unloading and storage conveyor system, the 100 and 120 TPH ball mills and 3 ground rock silos, & the 180 TPH ball mill at PAD 2 are deleted from our files.

If you have any questions, please contact George Richardson of my staff at (813)623-5561, extension 420.

Sincerely,

J. Harry Kerns

J. Harry Kerns, P.E.
District Air Engineer
Southwest District

JHK/gr

Florida Department of Environmental Regulation

Southwest District • 4520 Oak Fair Boulevard • Tampa, Florida 33610-7347 • 813-623-5561

Bob Martinez, Governor Dale Twachtmann, Secretary John Shearer, Assistant Secretary
Richard Garrity, Deputy Assistant Secretary

PERMITTEE:
Farmland Industries, Inc.
Post Office Box 960
Bartow, FL 33830

PERMIT/CERTIFICATION
Permit No.: AO53-151296
County: Polk
Expiration Date: 11/30/93
Project: Phosphate Rock Unloading & Handling Facility

This permit is issued under the provisions of Chapter 403, Florida Statutes, and Florida Administrative Code Rules 17-2 & 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 operation of rock unloading and storage conveyor system of a designed capacity of 200 TPH. Dust from 10 transfer/storage points is ducted to the scrubber. Emissions from this source are controlled by an Aerotron Venturi scrubber at a designed flow rate of 16950 ACFM.

Location: S.R. 640, Green Bay, Polk County

UTM: 17-409.5E 3079.5N NEDS NO: 0053 Point ID: 1

Replaces Permit No.:

PERMITTEE:
Farmland Industries, Inc.

PERMIT NO: AO53-151296
PROJECT: Phosphate Rock Unloading & Handling Facility

SPECIFIC CONDITIONS:

1. A part of this permit is the attached 15 General Conditions.

2. Particulate emissions are limited to 35.5 lbs./hour at the permitted process rate of 200 TPH as requested by Farmland to exempt this facility from F.A.C. 17-2.650(2). At lower process rates, emissions are limited to 35.5 lbs./hour or as determined by the appropriate equation in 17-2.610, F.A.C., whichever is less.

3. Visible emissions shall not be equal to or greater than 20% opacity in accordance with Subsection 17-2.610(2)(a), F.A.C.

4. Test the emissions for the following pollutant(s) at intervals of 6 months from the date March 11, 1988 and submit a copy of test data to the Air Section of the Southwest District Office within forty-five days of such testing (Subsection 17-2.700(2), F.A.C.:

(X) Particulates
(X) Opacity

5. Compliance with Specific Conditions No. 2 and 3 shall be determined using EPA Methods 1, 2, 3, 4, 5, and 9 contained in 40 CFR 60, Appendix A and adopted by reference in Section 17-2.700, F.A.C. The EPA Method 9 test shall be for at least 60 minutes. The minimum requirements for stack sampling facilities, source sampling and reporting, shall be in accordance with Section 17-2.700, F.A.C. and 40 CFR 60, Appendix A.

6. All reasonable precautions shall be taken to prevent and control generation of unconfined emissions of particulate matter in accordance with the provision in Subsection 17-2.610 (3), F.A.C. These provisions are applicable to any source, including, but not limited to, vehicular movement, transportation of materials, construction, alteration, demolition or wrecking, or industrial related activities such as loading, unloading, storing and handling.

7. No objectionable odors will be allowed, as per Subsection 17-2.620(2), F.A.C.

Florida Department of Environmental Regulation

Southwest District • 4520 Oak Fair Boulevard • Tampa, Florida 33610-7347 • 813-623-5561

Bob Martinez, Governor Dale Twachtmann, Secretary John Shearer, Assistant Secretary
Richard Garrity, Deputy Assistant Secretary

PERMITTEE:
Farmland Industries, Inc.
Post Office Box 960
Bartow, Florida 33830

PERMIT/CERTIFICATION
Permit No.: A053-157064
County: Polk
Expiration Date: 1-17-94
Project: 120 Ton Ball Mill,
PAD No. 2

This permit is issued under the provisions of Chapter 403, Florida Statutes, and Florida Administrative Code Rules 17-2 & 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 operation of a 120 ton ball mill at PAD No. 2 with emissions controlled by a 17,000 ACFM Mikro-Pulsaire baghouse.

Location: SR 640 South of Bartow, Polk County

UTM: 17-409.5 E 3079.5 N NEDS NO: 0053 Point ID: 11

Replaces Permit No.: A053-79214

PERMITTEE:
Farmland Industries, Inc.

Permit/Certification No.: A053-157064
Project: 120 Ton Ball Mill,
PAD No. 2

SPECIFIC CONDITIONS

1. A part of this permit is the attached 15 General Conditions.

2. Test the emissions for the following pollutant(s) at intervals of 6 months from the date November 14, 1988 and submit a copy of test data to the Air Section of the Southwest District Office of the Department of Environmental Regulation within forty-five days of such testing (Section 17-2.700(2), Florida Administrative Code (F.A.C.)).

(X) Particulates
( ) Fluorides
(X) Opacity
( ) Sulfur Oxides
( ) Nitrogen Oxides
( ) Hydrocarbons

3. Testing of emissions must be accomplished within ±10% of the process rate of 120 tons per hour. Failure to submit the input rates or operation at conditions which do not reflect actual operating conditions may invalidate the data (Section 403.161(1)(c), Florida Statutes).

4. At the request of the Permittee, the maximum allowable particulate emission rate from this baghouse shall not exceed 27.2 pounds/hour, in order to qualify for the particulate RACT exemption in Subsection 17-2.650(2)(b), F.A.C.

5. Visible emissions shall not be equal to or greater than 20% opacity in accordance with Subsection 17-2.610(2)(a), F.A.C.

6. Compliance with the emission limitations of Specific Conditions Nos. 4 and 5 shall be determined using EPA Methods 1,2,4,5 and 9 contained in 40 CFR 60, Appendix A and adopted by reference in Section 17-2.700, F.A.C. The minimum requirements for stack sampling facilities, source sampling and reporting, shall be in accordance with Section 17-2.700, F.A.C. and 40 CFR 60, Appendix A.

7. The maximum allowable emission rate for particulate matter for this source is set by Specific Condition No. 4. Because of the expense and complexity of conducting a stack test on minor sources of particulate matter, the Department pursuant to the authority granted under Subsection 17-2.700(3)(d), F.A.C. hereby waives the requirement for a stack test. The alternative standard set forth by this provision establishes a visible emission limitation not to exceed an opacity of 5%.

8. Should the Department have reason to believe the particulate emission standard is not being met, the Department may require that compliance with the particulate emission standards be demonstrated by testing in accordance with Section 17-2.700, F.A.C.

Florida Department of Environmental Regulation

Southwest District • 4520 Oak Fair Boulevard • Tampa, Florida 33610-7347 • 813-623-5561

Bob Martinez, Governor Dale Twachtmann, Secretary John Shearer, Assistant Secretary
Richard Garrity, Deputy Assistant Secretary

PERMITTEE:
Farmland Industries, Inc.
Post Office Box 960
Bartow, Florida 33830

PERMIT/CERTIFICATION
Permit No.: A053-157062
County: Polk
Expiration Date: 1-17-94
Project: 120 Ton Ball Mill,
PAD No. 1

This permit is issued under the provisions of Chapter 403, Florida Statutes, and Florida Administrative Code Rules 17-2 & 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 operation of a 120 ton ball mill at PAD No. 1 with emissions controlled by a 17,000 ACFM Mikro-Pulsaire baghouse.

Location: SR 640 South of Bartow, Polk County

UTM: 17-409.5 E 3079.5 N NEDS NO: 0053 Point ID: 27

Replaces Permit No.: A053-78873

PERMITTEE: Farmland Industries, Inc.

Permit/Certification No.: A053-157062
Project: 120 Ton Ball Mill, PAD No. 1

SPECIFIC CONDITIONS

1. A part of this permit is the attached 15 General Conditions.

2. Test the emissions for the following pollutant(s) at intervals of 6 months from the date November 14, 1988 and submit a copy of test data to the Air Section of the Southwest District Office of the Department of Environmental Regulation within forty-five days of such testing (Section 17-2.700(2), Florida Administrative Code (F.A.C.)).

(X) Particulates
( ) Fluorides
(X) Opacity
( ) Sulfur Oxides
( ) Nitrogen Oxides
( ) Hydrocarbons

3. Testing of emissions must be accomplished within ±10% of the process rate of 120 tons per hour. Failure to submit the input rates or operation at conditions which do not reflect actual operating conditions may invalidate the data (Section 403.161(1)(c), Florida Statutes).

4. At the request of the Permittee, the maximum allowable particulate emission rate from this baghouse shall not exceed 26.2 pounds/hour, in order to qualify for the particulate RACT exemption in Subsection 17-2.650(2)(b), F.A.C.

5. Visible emissions shall not be equal to or greater than 20% opacity in accordance with Subsection 17-2.610(2)(a), F.A.C.

6. Compliance with the emission limitations of Specific Conditions Nos. 4 and 5 shall be determined using EPA Methods 1,2,4,5 and 9 contained in 40 CFR 60, Appendix A and adopted by reference in Section 17-2.700, F.A.C. The minimum requirements for stack sampling facilities, source sampling and reporting, shall be in accordance with Section 17-2.700, F.A.C. and 40 CFR 60, Appendix A.

7. The maximum allowable emission rate for particulate matter for this source is set by Specific Condition No. 4. Because of the expense and complexity of conducting a stack test on minor sources of particulate matter, the Department pursuant to the authority granted under Subsection 17-2.700(3)(d), F.A.C. hereby waives the requirement for a stack test. The alternative standard set forth by this provision establishes a visible emission limitation not to exceed an opacity of 5%.

8. Should the Department have reason to believe the particulate emission standard is not being met, the Department may require that compliance with the particulate emission standards be demonstrated by testing in accordance with Section 17-2.700, F.A.C.

STACK SAMPLE SUMMARY SHEET

PLANT: TSD Rock Unloading
STACK: Scrubber Stack PERMIT NO. AO53-151296
TEST DATE: Nov 13, 1990 LIMITS: 40.41 lbs. Particulate/Hour; 20% Visible Emission

	RUN NO. 1	RUN NO. 2	RUN NO. 3	AVERAGE
STACK DIAMETER (ft.)	3.000	3.000	3.000	3.000
NOZZLE DIAMETER (inches)	0.299	0.299	0.299	0.299
SAMPLING TIME (min.)	60	60	60	60
STACK TEMPERATURE (deg. F)	86.00	86.00	87.00	86.33
STACK STATIC PRESSURE (WC)	0.000	0.000	0.000	0.000
VOLUME SAMPLED (ACF)	43.718	45.035	45.135	44.629
VOLUME SAMPLED (SCF)	43.623	44.451	44.632	44.235
STACK MOISTURE (%)	3.096	3.040	3.028	3.055
STACK VELOCITY (ft./sec.)	26.251	27.132	27.247	26.877
VOLUMETRIC FLOWRATE (ACFM)	11133.41	11507.08	11556.08	11398.86
VOLUMETRIC FLOWRATE (SCFM)	10532.45	10892.23	10919.96	10781.55
PARTICULATE (mg. collected)	320.400	178.600	324.400	274.467
PARTICULATE (lbs./hour)	**10.234**	**5.790**	**10.501**	**8.842**
STACK GAS MOLECULAR WT.	28.659	28.666	28.667	28.664
ISOKINETIC VARIATION %	100.090	98.621	98.772	99.161
PRODUCTION RATE(TPH of rock)	437.0	437.0	437.0	437.0
PARTICULATE (lbs./ton)	0.023	0.013	0.024	0.020

STACK SAMPLE SUMMARY SHEET

PLANT: TSD Rock Unloading
STACK: Scrubber Stack PERMIT NO. AO53-151296
TEST DATE: Jun 1, 1990 LIMITS: 40.41 lbs. Particulate/Hour; 20% Visible Emission

	RUN NO. 1	RUN NO. 2	RUN NO. 3	AVERAGE
STACK DIAMETER (ft.)	3.000	3.000	3.000	3.000
NOZZLE DIAMETER (inches)	0.241	0.241	0.241	0.241
SAMPLING TIME (min.)	60	60	60	60
STACK TEMPERATURE (deg. F)	93.00	94.00	98.00	95.00
STACK STATIC PRESSURE (WC)	0.000	0.000	0.000	0.000
VOLUME SAMPLED (ACF)	32.087	33.363	32.885	32.778
VOLUME SAMPLED (SCF)	31.328	31.938	31.479	31.582
STACK MOISTURE (%)	4.882	4.793	4.860	4.845
STACK VELOCITY (ft./sec.)	30.117	31.229	31.276	30.874
VOLUMETRIC FLOWRATE (ACFM)	12773.02	13244.74	13264.71	13094.16
VOLUMETRIC FLOWRATE (SCFM)	11691.29	12112.47	12035.37	11946.38
PARTICULATE (mg. collected)	379.800	333.400	236.100	316.433
PARTICULATE (lbs./hour)	**18.752**	**16.728**	**11.942**	**15.807**
STACK GAS MOLECULAR WT.	28.463	28.473	28.465	28.467
ISOKINETIC VARIATION %	99.676	98.083	97.294	98.351
PRODUCTION RATE(TPH of rock)	200.0	200.0	200.0	200.0
PARTICULATE (lbs./ton)	0.094	0.084	0.060	0.079

SUMMARY SHEET **Best Available Copy**

ANT: TSD
TACK: ROCK UNLOADING SCRUBBER
EST DATE: DECEMBER 13, 1989

PERMIT # A053-151296
LIMITS: 40.41 lbs. PARTICULATE/HOUR;
20% VISIBLE EMISSION(OPACITY)

	RUN NO. 1	RUN NO. 2	RUN NO. 3	AVERAGE
TACK DIAMETER (FT)	3.000	3.000	3.000	3.000
OZZLE DIAMETER (FT)	0.020	0.020	0.020	0.020
AMPLING TIME (MIN)	60.000	60.000	60.000	60.000
STACK TEMP (R)	540.000	540.000	540.000	540.000
STACK MOISTURE (%)	3.370	3.405	3.384	3.387
VOLUME SAMPLED (ACF)	36.780	36.998	36.762	36.847
VOLUME SAMPLED (SCF)	36.324	35.939	36.170	36.144
STACK VELOCITY (F/S)	32.026	31.487	31.577	31.696
VOLUMETRIC FLOWRATE (ACFM)	13582.580	13354.080	13392.178	13442.946
VOLUMETRIC FLOWRATE (SCFM)	12869.586	12648.506	12687.349	12735.147
PARTICULATE (MG. COLL.)	191.000	205.700	92.500	163.067
(MG. COLL.)	0.000	0.000	0.000	0.000
PARTICULATE (LBS/HR)	8.953	9.578	4.293	7.608
(LBS/HR)	0.000	0.000	0.000	0.000
STACK GAS MOL. WEIGHT	28.629	28.625	28.628	28.627
ISOKINETIC VARIATION %	104.991	105.691	106.045	105.576
PRODUCTION RATE (TPH,P205)	200.000	200.000	200.000	200.000
PARTICULATE (LB/HR/TON)	0.045	0.048	0.021	0.038
(LB/HR/TON)	0.000	0.000	0.000	0.000

SUMMARY SHEET

ANT: TSD ROCK UNLOADING
ACK: ROCK UNLOADING SCRUBBER
EST DATE: APRIL 18, 1989

PERMIT # A053-151296
LIMITS: 40.41 lbs. PARTICULATE/HOUR;
20% VISIBLE EMISSION(OPACITY)

	RUN NO. 1	RUN NO. 2	RUN NO. 3	AVERAGE
STACK DIAMETER (FT)	3.000	3.000	3.000	3.000
NOZZLE DIAMETER (FT)	0.025	0.025	0.025	0.025
SAMPLING TIME (MIN)	60.000	60.000	60.000	60.000
STACK TEMP (R)	557.000	554.000	554.000	555.000
STACK MOISTURE (%)	4.545	4.179	4.443	4.389
VOLUME SAMPLED (ACF)	46.780	51.149	48.257	48.729
VOLUME SAMPLED (SCF)	45.203	49.358	46.295	46.952
STACK VELOCITY (F/S)	27.564	29.586	28.003	28.384
VOLUMETRIC FLOWRATE (ACFM)	11690.201	12547.944	11876.582	12038.243
VOLUMETRIC FLOWRATE (SCFM)	10643.272	11530.176	10883.183	11018.878
PARTICULATE (MG. COLL.)	619.700	267.700	338.700	408.700
(MG. COLL.)	0.000	0.000	0.000	0.000
PARTICULATE (LBS/HR)	19.304	8.274	10.534	12.704
(LBS/HR)	0.000	0.000	0.000	0.000
STACK GAS MOL. WEIGHT	28.500	28.540	28.511	28.517
ISOKINETIC VARIATION %	103.327	104.145	103.490	103.654
PRODUCTION RATE (TPH,P205)	200.000	200.000	200.000	200.000
PARTICULATE (LB/HR/TON)	0.097	0.041	0.053	0.064
(LB/HR/TON)	0.000	0.000	0.000	0.000

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

ANNUAL OPERATION REPORT FORM FOR AIR EMISSIONS SOURCES

For each permitted emission point, please submit a separate report for calendar year 19_ prior to March 1st of the following year.

I GENERAL INFORMATION

1. Source Name: Farmland Industries, Inc.
2. Permit Number: A053-75878
3. Source Address: P. O. Box 960
   Bartow, Florida 33830
4. Description of Source: PAD I - 124 Ton Ball Mill and 1 Baghouse

II ACTUAL OPERATING HOURS: 16.11 hrs/day 7 days/wk 35.035 wks/yr

III RAW MATERIAL INPUT PROCESS WEIGHT: (List separately all materials put into process and specify applicable units if other than tons/yr)

Raw Material	Input Process Weight	
Phosphate Rock (Ground)	238,549	tons/
		tons/
		tons/
		tons/
		tons/

IV PRODUCT OUTPUT (Specify applicable units)

238,549 Tons of Ground (50% - 200 Mesh) Phosphate Rock

DER Form 17-1.202(6)
Effective November 30, 1982

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

ANNUAL OPERATION REPORT FORM FOR AIR EMISSIONS SOURCES

For each permitted emission point, please submit a separate report for calendar year 19[illegible] prior to March 1st of the following year.

I GENERAL INFORMATION

1. Source Name: Farmland Industries, Inc.
2. Permit Number: A053-79214
3. Source Address: P. O. Box 960
   Bartow, Florida 33830
4. Description of Source: PAD II - 120 Ton Ball Mill w/Baghouse

II ACTUAL OPERATING HOURS: 19.09 hrs/day 7 days/wk 40.567 wks/yr

III RAW MATERIAL INPUT PROCESS WEIGHT: (List separately all materials put into process and specify applicable units if other than tons/yr)

Raw Material	Input Process Weight	
Phosphate Rock (Ground)	1,058,393	tons/
		tons/
		tons/
		tons/
		tons/

IV PRODUCT OUTPUT (Specify applicable units)

1,058,393 Tons of Ground (50% - 200 Mesh) Phosphate Rock

DER Form 17-1.202(6)
Effective November 30, 1982

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

ANNUAL OPERATION REPORT FORM FOR AIR EMISSIONS SOURCES

For each permitted emission point, please submit a separate report for calendar year 19 prior to March 1st of the following year.

I GENERAL INFORMATION

1. Source Name: Farmland Industries, Inc.
2. Permit Number: A053-151296
3. Source Address: P. O. Box 960
   Bartow, Florida 33830
4. Description of Source: Phosphate Rock Unloading and Storage Scrubbe

II ACTUAL OPERATING HOURS: 16.00 hrs/day 7 days/wk 52 wks/yr

III RAW MATERIAL INPUT PROCESS WEIGHT: (List separately all materials put into proces and specify applicable units if other than tons/yr)

Raw Material	Input Process Weight	
Phosphate Rock	2,203,883	tons
		tons
		tons
		tons
		tons

IV PRODUCT OUTPUT (Specify applicable units)

2,203,883 Tons Phosphate Rock

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

DER Form
Form No.
Effective Date
DER Application No.

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ANNUAL OPERATION REPORT FORM FOR AIR EMISSIONS SOURCES

For each permitted emission point, please submit a separate report for calendar year prior to March 1st of the following year.

I GENERAL INFORMATION

1. Source Name: Farmland Industries, Inc.
2. Permit Number: A053-157062
3. Source Address: P. O. Box 960
   Bartow, Florida 33830
4. Description of Source: Phosphoric Acid Department No. 1 - 120 Ton Ball M
   Baghouse

II ACTUAL OPERATING HOURS: 19.21 hrs/day 7 days/wk 41.499 wks/yr

III RAW MATERIAL INPUT PROCESS WEIGHT: (List separately all materials put into proce and specify applicable units if other than tons/yr)

Raw Material	Input Process Weight	
Phosphate Rock (Ground)	1,260,532	tor
		tor
		tor
		tor
		tor

IV PRODUCT OUTPUT (Specify applicable units)

1,260,372 Tons of Ground (50% - 200 Mesh) Phosphate Rock.

Northwest District
160 Governmental Center
Pensacola, Florida 32501-5794
904-436-8300

Northeast District
3426 Bills Rd
Jacksonville, Florida 32207
904-798-4200

Central District
3319 Maguire Blvd. Suite 232
Orlando, Florida 32803-3767
305-894-7555

Southwest District
4520 Oak Fair Blvd
Tampa, Florida 33610-7347
813-623-5561

South District
2295 Bay St.
Fort Myers, Florida 33901-2896
813 332-6975

Southeast Dis
1900 S. Congress Av
West Palm Beach, Fl
305 964-96

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Effective Date
DER Application No.
(Provided by DER)

Best Available Copy

ANNUAL OPERATION REPORT FORM FOR AIR EMISSIONS SOURCES

For each permitted emission point, please submit a separate report for calendar year 19 90 prior to March 1st of the following year.

I GENERAL INFORMATION

1. Source Name: Farmland Industries, Inc.
2. Permit Number: A053-157064
3. Source Address: P. O. Box 960
   Bartow, Florida 33830
4. Description of Source: PAD II - 120 Ton Ball Mill W/Baghouse

II ACTUAL OPERATING HOURS: 20.73 hrs/day 7 days/wk 42.953 wks/yr

III RAW MATERIAL INPUT PROCESS WEIGET: (List separately all materials put into process and specify applicable units if other than tons/yr)

Raw Material	Input Process Weight	
Phosphate Rock (Ground)	1,081,647	tons/
		tons/
		tons/
		tons/
		tons/

IV PRODUCT OUTPUT (Specify applicable units)

1,081,647 Tons of Ground (50% - 200 Mesh) Phosphate Rock

DER Form 17-1.202(6)
Effective November 30, 1982

Northwest District
160 Governmental Center
Pensacola, Florida 32501-5794
904-436-8300

Northeast District
3426 Bills Rd
Jacksonville, Florida 32207
904-798-4200

Central District
3319 Maguire Blvd. Suite 232
Orlando, Florida 32803-3767
305-894-7555

Southwest District
4520 Oak Fair Blvd
Tampa, Florida 33610-7347
813-623-5561

South District
2269 Bay St.
Fort Myers, Florida 33901-2896
813 332-6870

Southeast District
1900 S. Congress Ave. Suite
West Palm Beach, Florida
305-964-9461

REPORT IN SUPPORT OF AN APPLICATION FOR A PSD CONSTRUCTION PERMIT REVIEW

PREPARED FOR:

FARMLAND HYDRO, L.P.
GREEN BAY COMPLEX
POLK COUNTY, FLORIDA

MARCH 1992

PREPARED BY:

KOOGLER & ASSOCIATES
4014 N.W. 13TH STREET
GAINESVILLE, FLORIDA 32609
(904) 377-5822

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1.0 SYNOPSIS OF APPLICATION

1.1 APPLICANT

Farmland Hydro, L.P.
Green Bay Complex
P.O. Box 960
Bartow, FL 33830

1.2 FACILITY LOCATION

Farmland Hydro, L.P. (Farmland), Green Bay Complex, is a phosphate chemical fertilizer manufacturing facility located approximately six miles Southwest of Bartow, Florida, on County Road 640 in Polk County. The UTM coordinates of the Farmland Hydro L.P., Green Bay Complex are Zone 17, 409.5 km East and 3079.5 km North.

1.3 PROJECT DESCRIPTION

Farmland Hydro, L.P. proposes to increase the granular monoammonium phosphate (MAP) and diammonium phosphate (DAP) production rates of the existing North plant from 70 to 120 tons per hour MAP, and from 50 to 100 tons per hour DAP. This will result in an increase in the MAP/DAP production rate of the North plant from the current maximum rate of 36.4 tph P_2O_5 to 62.4 tph P_2O_5. The proposed project will include the MAP/DAP North plant process equipment enhancements to achieve the production rate increases.

The proposed project will result in a significant net increase (in accordance with Table 500-2 of Chapter 17-2, Florida

Administrative Code, [FAC]) in the emission rate of fluorides and a less than significant increase in the emission rate of particulate matter.

Farmland Hydro L.P. is submitting this report in support of an application to the Florida Department of Environmental Regulation for increasing the fertilizer production rate of the existing MAP/DAP North plant. The report includes a description of the existing chemical complex and the GTSP/MAP/DAP North plant, a review of Best Available Control Technology, an ambient air quality analysis and an evaluation of the impact of the proposed modification on soils, vegetation and visibility.

2.0 FACILITY DESCRIPTION

The Farmland Hydro, L.P., Green Bay Complex, is a phosphate fertilizer manufacturing facility located on County Road 640 in Polk County, Florida (See Figures 2-1 and 2-2). The UTM coordinates of the facility are Zone 17, 409.5 km East and 3079.5 km North.

2.1 EXISTING FACILITY

The existing fertilizer complex processes wet phosphate rock into several different fertilizer products. This is accomplished by reacting the phosphate rock with sulfuric acid to produce phosphoric acid and then converting the phosphoric acid into fertilizer products. The chemical complex includes sulfuric acid plants, phosphoric acid plants, a fluosilicic acid production facility, a super-phosphoric acid plant, plants to produce monoammonium phosphate (MAP), diammonium phosphate (DAP), granular triple super phosphate (GTSP), and storage, handling, grinding and shipping facilities for phosphate rock, ammonia, sulfur, and fertilizer products. Figure 2-3, Plot Plan, shows the location of the existing plants.

2.2 EXISTING GTSP/MAP/DAP PLANT

Farmland Hydro currently operates a granular fertilizer plant with two essentially equal independent granulation trains; a North train where the proposed modification is to take place and a South train. The South train produces exclusively DAP while the North train is capable of producing either GTSP, MAP, or DAP. The currently permitted production rates of the North

GTSP/MAP/DAP plant are 70 tons per hour of MAP, 50 tons per hour of DAP and 33.2 tons per hour of GTSP. Only one product can be produced at a time, and it should be noted that in recent years no GTSP has been produced because of a predominant market demand for DAP/MAP. During 1990 and 1991 the GTSP/MAP/DAP North plant has produced mostly MAP because of favorable production rates of MAP.

As the proposed modification will occur exclusively in the GTSP/MAP/DAP North plant, a brief description of the air emission control systems associated with the GTSP/MAP/DAP North plant is provided below.

The emissions from the GTSP/MAP/DAP North plant include particulate matter, ammonia, fluorides, and negligible quantities of natural gas combustion products from the dryer. The North plant dryer is fired on natural gas but is permitted to fire diesel fuel as a stand-by fuel source for up to 400 hours per year. The existing scrubber system includes of a Reactor/ Blungers (granulator) scrubber which uses a nominal 28 percent P_2O_5 strength acid as a scrubbing liquor for ammonia control and pond water for fluoride control. The scrubber consists of a conventional venturi scrubber which initially scrub these gasses of ammonia (see flow diagram Figure 3-1), followed by a large body cyclonic separator. The gases exiting the separator pass through a condensing section which uses pond water. The gas is then forced to the main plant stack through a cross-flow scrubber by the R/B fan .

Two dust scrubbers which include the Dryer scrubber and the Screens/Mills/Cooler scrubber operate on the same scrubbing principal. The gasses first pass through a dry cyclonic separator and then to the primary scrubbers. Each scrubber sprays 28 percent strength P_2O_5 acid in a vertical contact section followed by a wet cyclonic separator. The separators are followed by pond water polishing prior to the secondary scrubber. The gas is then forced through a cross-flow scrubber (secondary scrubber) to the main plant stack.

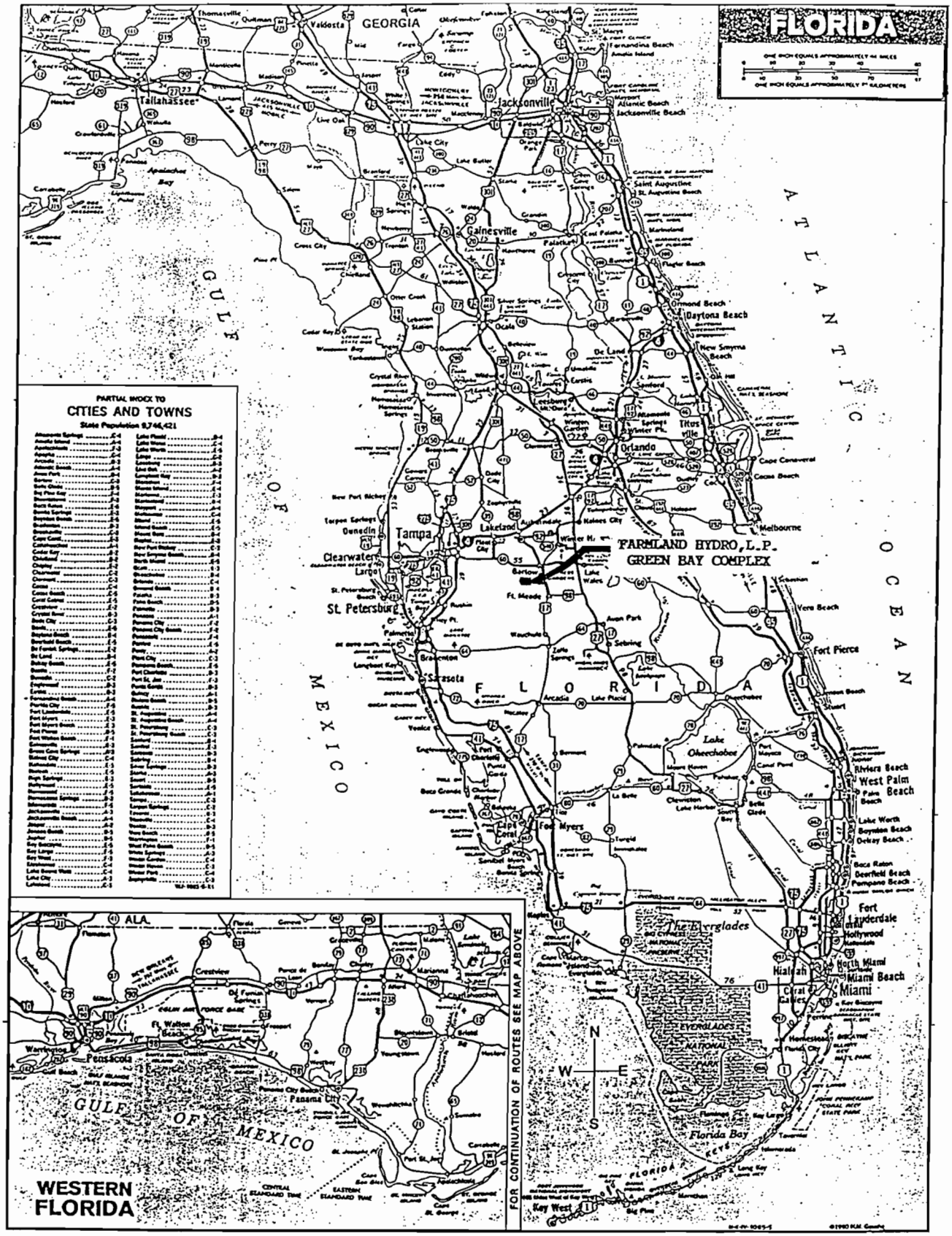
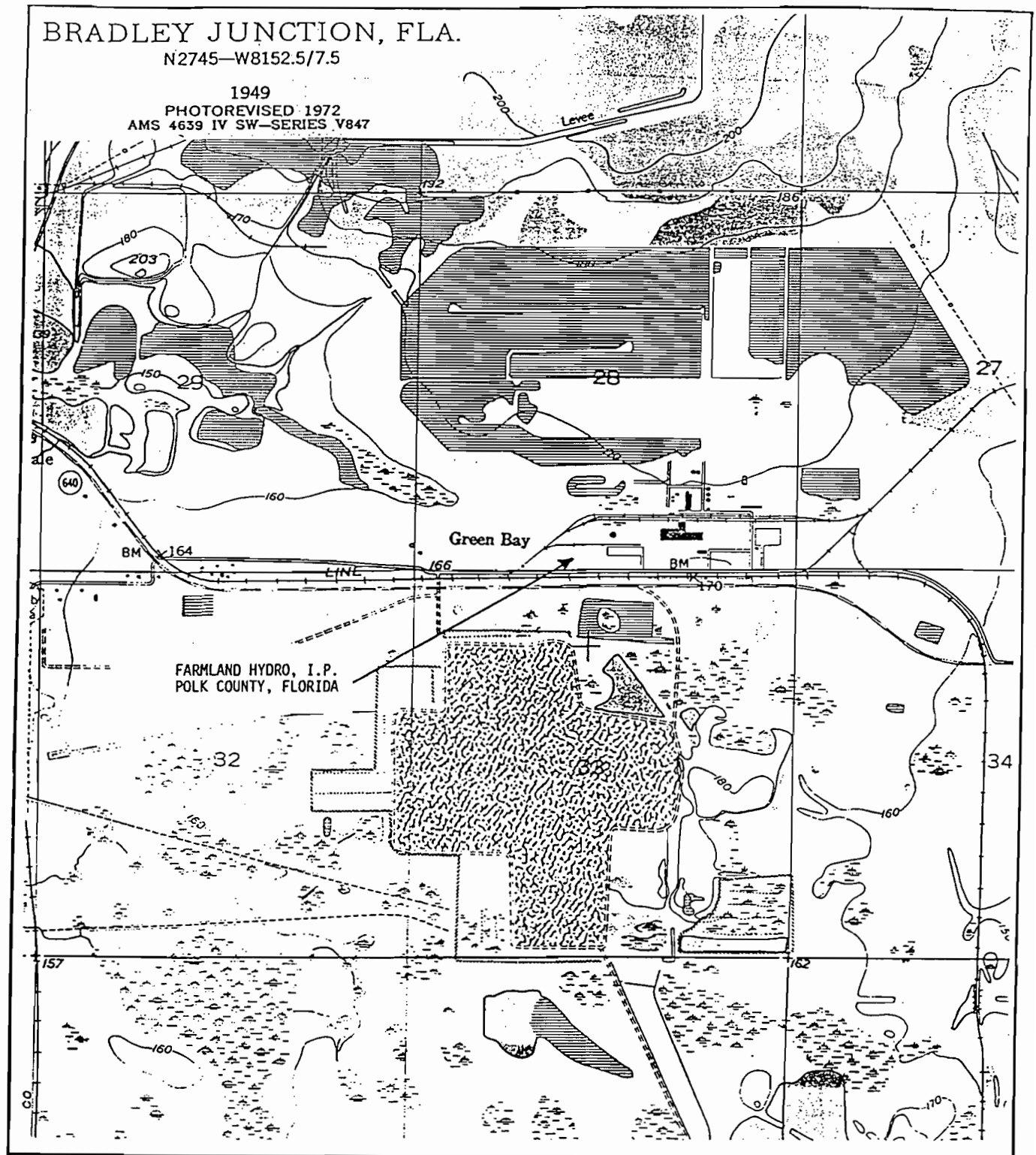
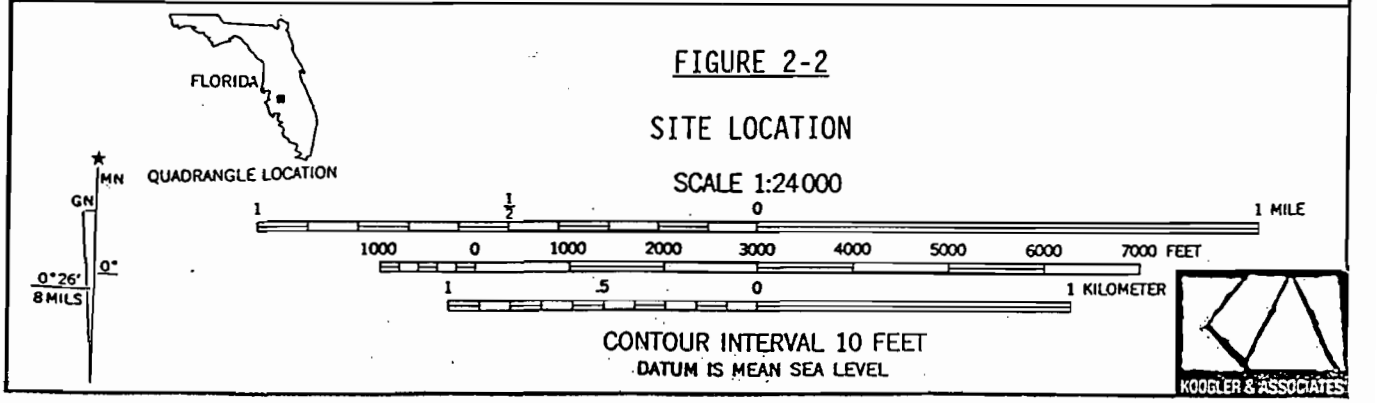


FIGURE 2-1
AREA LOCATION MAP

FARMLAND HYDRO, L.P.
POLK COUNTY, FLORIDA


BRADLEY JUNCTION, FLA.
N2745—W8152.5/7.5
1949
PHOTOREVISED 1972
AMS 4639 IV SW—SERIES V847
Levee
Green Bay
BM 164
BM
LINE
FARMLAND HYDRO, I.P.
POLK COUNTY, FLORIDA
27
28
29
32
33
34
640
200
192
186
180
170
160
150
203
166
157
162


FLORIDA
QUADRANGLE LOCATION
MN
GN
0°26'
8 MILS
0°
FIGURE 2-2
SITE LOCATION
SCALE 1:24000
1 MILE
7000 FEET
1 KILOMETER
CONTOUR INTERVAL 10 FEET
DATUM IS MEAN SEA LEVEL
KOGLER & ASSOCIATES

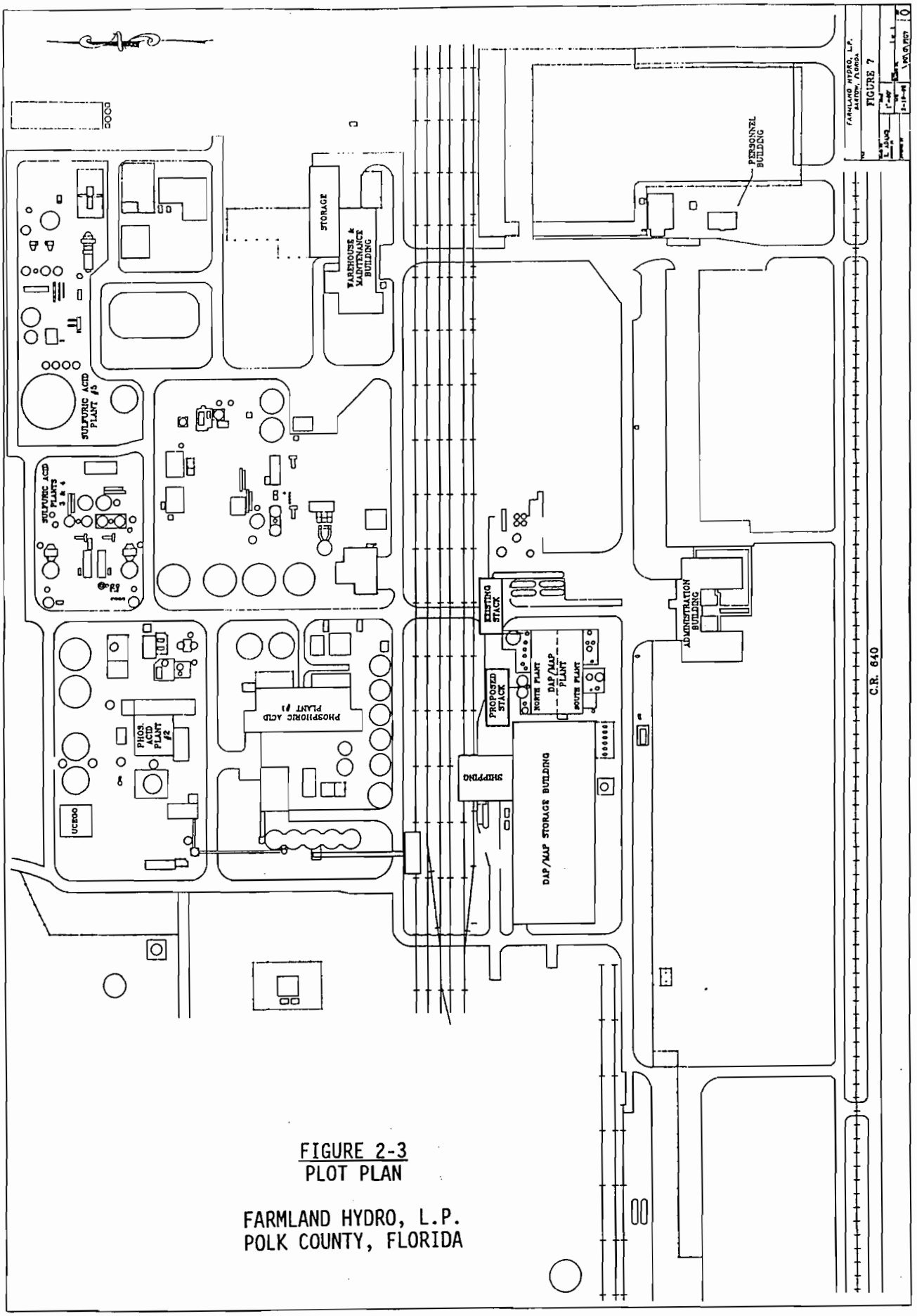


FIGURE 2-3
PLOT PLAN

FARMLAND HYDRO, L.P.
POLK COUNTY, FLORIDA

3.0 PROPOSED PROJECT

Farmland Hydro, L.P. proposes to increase the granular MAP and DAP production rate of the existing North plant from 70 to 120 tons per hour MAP, and from 50 to 100 tons per hour DAP. The GTSP production capability will be removed. This will result in an increase in the MAP/DAP production rate of the North plant from the current maximum rate of 36.4 tph P_2O_5 to 62.4 tph P_2O_5. The proposed project will include the North plant process equipment enhancements to achieve the production rate increases.

An increase in the production rate will require an increase in P_2O_5 feed to the North plant. The existing phosphoric acid plants which currently produce excess acid will supply the additional P_2O_5 required. Farmland Hydro, L.P. currently sells the excess phosphoric acid not used in fertilizer production.

The proposed project will not require a modification of any other plant in the Green Bay Complex other than the MAP/DAP North plant.

3.1 PROJECT DESCRIPTION

As a part of Farmland Hydro, L.P.'s present fertilizer complex, there are two existing granular fertilizer plants contained in a single building. While the two plants share certain common raw material feed storage, product storage facilities, and have a common control room, each plant operates as a separate and independent production facility.

The existing South plant produces exclusively granular DAP fertilizer while the North plant is capable of producing GTSP,

MAP, or DAP depending on market requirements. The proposed modification will affect only the North plant.

3.1.1 PROCESS DESCRIPTION

The proposed project will modify the North plant to produce either MAP or DAP at a higher capacity and will eliminate the capability to produce GTSP. The general scope of the project includes the following:

- Replace existing ammoniator/blungers with a single rotary drum ammoniator/granulator.
- Increase the solids recycle capacity to allow for a higher production rate.
- Modify the air pollution control equipment by completely replacing the Reactor/Granular scrubber system with the most modern technology and modify the other air pollution control systems in the plant to improve their performance.

As the GTSP process inherently releases a much greater portion of the incoming fluoride in the raw materials than the MAP or DAP processes, the potential fluoride emissions will be significantly reduced.

In the basic ammoniated phosphate process, anhydrous ammonia is reacted with phosphoric acid. The level of ammoniation determines whether the product is MAP (less ammoniation) or DAP (more ammoniation). The slurry produced by the ammoniation is then sprayed onto a bed of recycled solids in the granulator and additional ammonia (if required) is added to complete the acid

neutralization and produce the final product grade (see Figure 3-2.3).

The resulting slurry/solids mixture contains excess water which is removed by drying in a fossil fuel fired, direct contact rotary dryer. The dried solids are then screened to remove the on-size product which is transported to storage. The oversize fraction of the solids is crushed, mixed with the undersize fraction and returned to the granulator for addition of more slurry (see Figures 3-2.4).

The product size material is withdrawn from the screening system and passed through an existing fluid-bed cooler. To improve the cooling capacity of this unit, it is proposed, as part of this overall project, to add a new air conditioning coil utilizing the incoming ammonia as a refrigerant to cool and dehumidify the air entering the cooler. This cooled air will be pulled across the product and will be warmed to about 150-160^{o} F while cooling the product to the required storage temperature. This air will then be passed through a new pollution abatement system prior to discharge to the atmosphere (see Figure 3-2.5).

As the process requires about four tons of recycled solids for each ton of slurry, the solids handling capacity (screens, mills, elevators, and conveyors) will be increased as part of this project. In order to eliminate fumes and dust inside the plant, the venting system (referred to as the screen and mills system) will be modified and improved. The fumes and dust from various equipment items will be removed from the process plant

and passed through a pollution control system prior to discharge to the atmosphere.

In the reaction section of the plant, low strength phosphoric acid (about 28 percent P_2O_5) is first used in the pollution control equipment to absorb particulate and ammonia from the exiting gas, and is then mixed with high strength (about 52 percent P_2O_5) acid. The blended acid strength is maintained at about 37 percent P_2O_5 for making DAP and about 45 percent P_2O_5 for making MAP.

In making DAP, the blended acid is partially neutralized with ammonia in a reactor vessel. This reaction is exothermic and a significant amount of water vapor is released from the reactor vessel. Since the DAP production rate will increase, the proposed project will require that the reactor vessel be enlarged in order to allow proper absorption of the ammonia and proper separation of the water vapor and the slurry.

The resulting slurry is then sprayed onto the recycled solids in the granulator and additional ammonia is sparged into the bed in order to complete the neutralization reaction. Not as much ammonia is added to the granulator as is added to the reactor vessel, hence there is not as much heat released in the granulator. The granulator is constantly air swept to remove any excess ammonia fumes, water vapor produced by the heat of reaction and dust.

For MAP grades, the entire neutralization reaction is completed in a contained mixing pipe referred to as a "pipe reactor". The hot slurry is sprayed onto the recycled solids bed

in the granulator but no additional ammonia is required to complete the reaction. Most of the water in the acid is vaporized when the slurry is sprayed onto the solids. A small portion of the ammonia in the slurry is also released into the air stream. As with DAP production, the granulator is swept constantly to remove ammonia fumes, water vapor and dust (see Figure 3-2.3).

3.1.2 AIR EMISSION SOURCES

Air emissions will result from four major sources in the North plant. These are:

A. Dryer Air Stream - This air stream is contacted directly with the fertilizer in the rotary dryer and contains fertilizer particulate matter, ammonia vapor, water vapor, trace quantities of fluoride vapor and the combustion products of natural gas.

B. Screen and Mills Air Stream - This air stream is a collection of all air evacuation from all solids handling equipment (except the granulator and the product cooler). It contains fertilizer particulate matter, possible traces of ammonia vapor and possible traces of fluoride vapor.

C. Product Cooler Air Stream - This air stream is exhausted from the product cooler and contains fertilizer particulate matter, possible traces of ammonia vapor and traces of fluoride vapor.

D. Reactor/Granulator Air Stream - This air stream is exhausted from the DAP reactor vessel and the granulator.

It will contain significant quantities of ammonia vapor and water vapor, small quantities of fertilizer particulate matter and small quantities of fluoride vapor.

The present plant uses three scrubbing systems to clean the gases. These are the screen and mills scrubber which is the primary contaminant removal device for the screens and mills gas stream and the cooler gas stream, the dryer scrubber for the dryer gas stream, and a smaller reactor/blunger scrubber as the reactor and blunger air stream cleaning device. All three systems discharge through a common stack. When GTSP grades are manufactured, there is a separate smaller scrubbing system to clean the gases from the GTSP reactors only. This system will be removed as part of the proposed modifications. The following modifications are proposed for the entire emission control system.

A. Dryer Air Stream - The present dryer air handling equipment is large enough for the expanded plant rate. The present system consists of a cyclone to remove the majority of the particulate matter, an acid scrubber (vertical spray section followed by a cyclonic separator) to remove both the ammonia vapor and the remaining particulate matter, a water spray section prior to the fan, and a final water scrubber to remove any fluoride compounds evolved in the acid scrubber. Both of the water scrubbers utilize plant pond water as the liquid scrubbing medium.

As part of the overall plant modifications, the acid liquid scrubbing media for the dryer scrubber, the screen and mills scrubber and the new cooler scrubber will be changed. At present, 28 percent P_2O_5 acid is used. After the proposed modifications, the liquid scrubbing media will be an acid of about 10 percent P_2O_5 strength. As the lower strength acid has a significantly lower vapor pressure of fluoride containing compounds, the fluoride emissions from this scrubber will be significantly reduced from present. Additional controls will be added to the existing scrubber to improve operations. The lower strength acid will have no effect on the particulate removal ability of the scrubber as all process parameters (flow rates, temperatures, etc.) will remain as at present (see Figure 3-2.2).

B. Screen and Mills Air Stream - The present screen and mills scrubber handles both the cooler air stream and screen and mills air stream. The total gas flow into the scrubber is approximately 35,000 SCFM. The screen and mills and cooler air streams have separate cyclones to remove the majority of the particulate matter. The combined gases are then scrubbed in the acid scrubber (vertical downspray section followed by a cyclonic separator) to remove the remaining ammonia and particulate matter, there is a water polishing downcomer prior to the fan. After the fan, final scrubbing occurs in the crossflow water scrubber to remove fluoride

generated in the acid scrubber. Plant pond water is used as the liquid scrubbing medium in both of the water scrubbers (see Figure 3-1).

The screen and mills air flow will be reduce to approximately 28,000 SCFM by removing the existing fan and installing a new smaller fan. This reduction is possible as the cooler air stream will be separately handled in a new scrubbing system.

While the existing screens and mills scrubbing system will not be modified, improvements will be made in the controls and the scrubbing liquid (as mentioned in the Dryer Air Stream discussion) will be reduced from about 28 percent P_2O_5 acid to about 10 percent P_2O_5 acid. The fluoride evolution will be reduced as a result of using lower strength acid and the particulate removal capacity will be maintained as at present or improved (see Figure 3-2.2).

C. Cooler Air Stream - As mentioned in the Screen and Mills section, the present cooler air passes through the screen and mills scrubber along with the cooler air. The proposed modifications will install a completely new cooler air system. The existing cooler cyclone will be used, and the air flow will be maintained at the cyclone design rating. A new venturi scrubber followed by a cyclonic separator will be used to remove the remaining particulate matter from the air stream. This new scrubber will use 10

percent P_2O_5 acid in the venturi to absorb the particulate and ammonia vapor in the air stream. The scrubbed air will exit the cyclonic separator and pass through a fan which will discharge to the existing main plant stack for discharge to atmosphere (see Figure 3-2.5).

D. Reactor/Granulator Air Stream - The existing Reactor/ Blunger scrubber system will be dismantled and replaced with a completely new system to control emissions from the reactor and granulator. This system will utilize the latest technology to remove the largest possible amounts of contaminants. The combined air stream will first be contacted with weak (about 28 percent P_2O_5) acid maintained by a sophisticated control system at an NH_3 to H_3PO_4 mole ratio of 1.4 to 1.5. At this mole ratio, the majority of the fluoride compounds are complexed and little or no fluoride is evolved. Additionally, approximately 70 percent of the ammonia vapor in the gas stream is reacted in this scrubber. Most of the heat of reaction is liberated in this scrubber where the fluoride evolution is known to be extremely low.

A cyclonic separator separates the scrubbing liquor from the air stream. The air stream is then contacted with weak (about 28 percent P_2O_5) acid at an NH_3 to H_3PO_4 mole ratio of about 0.6. As most of the heat of reaction from the ammonia vapor and the scrubbing liquor has been released in the first stage scrubber, the evolution of

fluoride is significantly lower in this scrubber than in normal single stage scrubbers. This scrubber is a venturi scrubber designed to absorb ammonia vapor and particulate matter from the gas stream. Following the venturi section is a cyclonic scrubber to separate the liquid and the air.

Since there is still a possibility of fluoride vapor in the gas stream, this scrubber is followed by a BFL ammonia vaporizer/scrubber. This unit passes the gases through the tubes of a shell and tube heat exchanger with liquid ammonia in the shell side. The ammonia is maintained at a pressure such that the boiling point is about 35 ^{o}F. As the ammonia boils, some of the water vapor in the gas stream passing through the tubes is condensed. This freshly condensed water vapor has a great affinity for any fluoride compounds in the air stream and absorbs them. Approximately 0.46 gallons of water is condensed per ton of product which translates to about 50 gallons per hour. This condensate is separated from the air stream after the heat exchanger by a demisting chamber, drained to a tank and recirculated to the top of the heat exchanger to maximize the gas/liquid contact surface for fluoride absorption. The tubes of the heat exchanger act as long throat venturis to accelerate the gas liquid mixture to a velocity such that the heat exchanger is acting as a venturi scrubber.

When MAP grade fertilizer is produced, no ammonia is vaporized so fresh pond water is mixed with the incoming

gases prior to the heat exchanger. The heat exchanger tubes provide sufficient mixing to yield excellent contact and fluoride absorption. The pond water also condenses a portion of the water vapor in the air stream which further promotes fluoride vapor absorption (see Figure 3-2.1).

The scrubbing liquids are primarily consumed in the manufacturing process. The weak acid used in the dryer, screen and mills, and cooler scrubbers is formed by mixing controlled amounts of plant wash water and 28 percent acid. This weak acid is then directed to either the DAP reactor to form part of the DAP slurry or the MAP pipe reactor feed tank to be reacted in the pipe reactor. The low mole and high mole scrubbing liquors are piped to the same vessel and are consumed in the manufacturing process (Figure 3-2.6 shows reclaim water and weak phosphoric acid raw material feeds. Figures 3-2.1, 3-2.2, 3-2.3, and 3-2.5 show scrubbing liquor flows).

Plant pond water is used in the crossflow scrubber on a single pass basis for final stage scrubbing of the dryer and the screen and mills gases and returned directly to the plant recirculation pond. The BFL vaporizer/scrubber condensate (during DAP production) or pond water (during MAP production) is also returned to the plant recirculation pond.

The existing dryer scrubber gases, the modified screen and mills scrubber gases, and the new cooler scrubber gases will all discharge to atmosphere through the existing main plant stack. A

new separate Reactor/Granulator stack will be installed as part of the proposed modifications (see Figures 3-2.1 and 3-2.2).

3.1.3 AIR EMISSIONS

The proposed project will result in an overall net increase in the emissions of particulate matter and fluorides. However, the installation of state-of-the art control equipment will result in an overall net decrease in the emissions of ammonia. As shown in the calculations (see Appendix), the overall net increase in particulate matter will be about 14 tons per year (tpy). The net increase in fluoride emissions will be about 7 tpy. The net decrease in the emissions of ammonia will be about 86 tpy. While the net emissions increase of particulate matter from the proposed project will be below the significant rate (defined in Chapter 17-2 of the Florida Administrative Code) of 15 tpy, the net emissions increase of fluorides will exceed the significant rate of 3 tpy. The air emission control systems for the primary sources in the North plant are discussed below.

The proposed plant will have two stacks. The main stack will handle the discharge of the cooler scrubbing system, the dryer scrubbing system, and the screen and mill (S/M) scrubbing system. The reactor/granulator (R/G) stack will handle the discharge to atmosphere of the R/G scrubbing system.

While the plant can produce two different fertilizer grades (MAP and DAP), not all of the air streams change between grades. The cooler air stream and the S/M air stream, both in flow characteristics and emissions, remain the same with the two

products. Only the dryer and the reactor/granulator air streams change with products.

A. COOLER AIR STREAM

The cooler air stream will first be passed through a dry cyclone to remove the majority of the plus 5 micron particles. This gas stream will then pass through a venturi scrubber followed by a cyclonic separator. The scrubbing liquor used will be recirculated 10 percent phosphoric acid. The gas exiting the scrubber will pass through the fan to the main stack.

The maximum emissions from the cooler scrubber are expected to be:

	DAP Emissions		
Pollutant	lbs/hr	ton/yr	lbs/ton P_2O_5
Particulate	1.98	8.67	NA
Ammonia Gas	3.29	14.41	NA
Fluoride Gas	0.94	4.12	0.020

	MAP Emissions		
Pollutant	lbs/hr	ton/yr	lbs/ton P_2O_5
Particulate	5.52	24.18	NA
Ammonia Gas	4.46	19.53	NA
Fluoride Gas	1.21	5.30	0.030

B. S/M AIR STREAM

The gas flow to the S/M Scrubbing System will be the process equipment exhaust gas. It will first pass through a dry cyclone to remove the majority of the plus 5 micron particulate matter. The gas will then enter the S/M Scrubber. This spray cyclonic scrubber will utilize recirculated 10 percent phosphoric acid as the scrubbing medium. The acid will be sprayed into the incoming duct and intimately mixed with the gas stream. The cyclonic separator/scrubber following the spray duct will improve contact between the liquid and the gas and also separate the liquid from the gas stream. After exiting the separator, the gas will be scrubbed with once-through pond water to saturate the gas stream and to control fluoride emissions.

The gas from the pond water polishing duct will then be passed through the S/M fan, combined with the gases exiting the dryer fan, and passed through a crossflow scrubber utilizing once through pond water to remove fluoride vapors. The gas exiting the crossflow scrubber will be discharged to the atmosphere through the main stack.

The maximum material transport between the S/M scrubber pond water polishing duct and the crossflow scrubber will be:

	Emissions		
Pollutant	lbs/hr	ton/yr	lbs/ton P_2O_5
Particulate	6.60	28.91	NA
Ammonia Gas	1.50	6.57	NA
Fluoride Gas	0.20	0.88	0.003

The emissions from the crossflow scrubber to the main stack will be summarized under the crossflow scrubber section (Section E).

C. DRYER SCRUBBER (DAP PRODUCTION)

The dryer scrubbing system will be nearly identical to the S/M scrubbing system. The gas exiting the dryer will first pass through a dry cyclone to separate the larger than five micron particulate fraction and then be contacted in a spray duct with recirculated 10 percent strength phosphoric acid. The pond water polishing system for the dryer will be different in that it will use a much higher liquid to gas ratio. A separator chamber will be used after the spray duct prior to the dryer fan to ensure separation of the pond water from the gas stream.

After the dryer fan, the gas will combine with the S/M gas prior to passing through the crossflow scrubber. Exiting the crossflow scrubber, the combined gas stream will be discharged through the main stack.

The maximum transport between the dryer scrubber pond water polishing step and the crossflow scrubber will be:

	DAP Emissions		
Pollutant	lbs/hr	ton/yr	lbs/ton P_2O_5
Particulate	4.90	21.46	NA
Ammonia Gas	1.80	7.88	NA
Fluoride Gas	0.48	2.10	0.010

The gas exiting the crossflow scrubber will be discussed in the crossflow scrubber section (Section E).

D. DRYER SCRUBBER (MAP PRODUCTION)

The description of the scrubbing system for MAP operation is identical to that for DAP. The gas quantity will be nearly identical for the two grades, but the quantity of particulate will be greater for MAP due to the manufacturing process.

The maximum transport between the dryer pond water polishing step and the crossflow scrubber will be:

	MAP Emissions		
Pollutant	lbs/hr	ton/yr	lbs/ton P_2O_5
Particulate	7.32	32.06	NA
Ammonia Gas	2.67	11.69	NA
Fluoride Gas	0.48	2.10	0.007

The gas exiting the crossflow scrubber is addressed in the following section (Section E).

E. CROSSFLOW SCRUBBER

The crossflow scrubber will use once-through pond water sprayed counter current to the air in order to maximize the absorption of fluoride from the combined S/M and dryer scrubbing system. This type of scrubber will also have minor impact on reducing the amount of ammonia gas and particulate matter in the air stream. The emissions from the crossflow scrubber are expected to be:

CROSSFLOW SCRUBBER DAP PRODUCTION

	Input	Output		
Pollutant	lbs/hr	lbs/hr	ton/yr	lb/ton
Particulate	11.50	8.64	37.84	NA
Ammonia Gas	3.30	1.88	8.23	NA
Fluoride Gas	0.68	0.66	2.89	0.014

CROSSFLOW SCRUBBER MAP PRODUCTION

	Input	Output		
Pollutant	lbs/hr	lbs/hr	ton/yr	lb/ton
Particulate	13.92	10.36	45.38	NA
Ammonia Gas	4.17	2.55	11.17	NA
Fluoride Gas	0.68	0.66	2.89	0.011

F. REACTOR/GRANULATOR SCRUBBER SYSTEM (DAP PRODUCTION)

The gas exiting the reactor will be scrubbed in a spray duct with a high mole ratio (NH_3 to H_3PO_4) recirculated scrubber liquor at the liquid to gas ratio of 12 gpm per 1000 cfm. In a

separate duct, additional scrubbing liquor of the same composition at the same liquid/gas ratio will contact the granulator gas. These two streams will then be combined and introduced to a high efficiency cyclonic separator to separate the scrubbing liquor from the gas stream.

This scrubbing liquor will be maintained at a mole ratio of about 1.45 to 1.5 by process controls. At this mole ratio, ammonia gas will be absorbed with little or no fluoride evolution.

After exiting the cyclonic separator, the combined reactor and granulator gas stream will be scrubbed in a venturi scrubber with a recirculated low mole scrubbing liquor. This venturi scrubber will maintain a 12 inch water column pressure drop with an adjustable throat. This adjustment will be necessary since the gas volume varies with plant rate. The low mole scrubbing liquor will operate at a lower temperature since most of the ammonia gas will be removed in the high mole scrubbing stage. At this lower temperature, the evolution of fluoride will be much lower than single stage, single mole scrubber systems.

The low mole scrubber liquor will be produced by adding fresh low strength (about 28 percent P_2O_5) phosphoric acid to the high mole scrubber liquor. The low mole liquor will be partially used as make up to the high mole scrubber and any excess will be bypassed directly to the process.

The gas will then exit the low mole scrubber venturi and pass into a high efficiency cyclonic separator to separate the low mole scrubbing liquor from the gas stream. The overall

particulate scrubbing efficiency of this two stage scrubber will be in excess of 99.5 percent while the overall ammonia scrubbing efficiency will be about 96 percent. The ammonia efficiency will be dependent upon the plant rate and the actual mole ratio in the low mole scrubber.

When the gas exits the low mole cyclonic separator, it will pass through the tubes of a shell and tube heat exchanger. The heat exchanger size will be such that the gas velocity entering the tubes will be about 7,000 feet per minute. Ammonia liquid will be maintained at the boiling point in the shell side of the heat exchanger and the hot, saturated gas will vaporize the ammonia liquid. As ammonia is vaporized, some of the water vapor in the gas stream will be condensed. The heat balance indicates that about 0.46 gallons of water will be condensed for each ton of fertilizer product produced, or approximately 50 gallons per hour.

This condensed water will be separated from the gas stream in a specially designed chevron-style vessel. The water will drain into a tank, be mixed with a cold (about 50 ^{o} F) water stream from an air conditioning coil, and then recirculated at a rate of about 5 gpm per 1000 cfm to the inlet of the heat exchanger. The water will mix with the gas stream prior to entering the heat exchanger tubes.

The excess water (that produced by the condensation and the air conditioning stream) will overflow the tank and will be returned to the recirculation pond on the plant site. The normal fluoride level in this recirculated water will be less than 500

ppm. Even at the elevated temperature (about 150 ^{o} F), the vapor pressure with this low of a concentration will be quite low and the heat exchanger will act as scrubber.

The gas exiting the separator will go to the fan and then to a separate R/G stack. The maximum emissions from this entire R/G scrubbing system will be:

DAP Emissions

Pollutant	lbs/hr	ton/yr	lbs/ton P_2O_5
Particulate	5.52	24.18	NA
Ammonia Gas	41.56	182.03	NA
Fluoride Gas	1.16	5.08	0.025

G. REACTOR/GRANULATOR SCRUBBING SYSTEM (MAP PRODUCTION)

During MAP production, the reactor will not be utilized and will be shut off by using a damper in the duct. The amount of air withdrawn from the granulator will be increased slightly to handle a higher heat load in the granulator. Other than this increase in gas flow, the high and low mole scrubbers will operate exactly as during DAP production. The sprays in the reactor duct will be shut off as there will be no air flow from the reactor, but all other parts of the system will operate identically. The low mole venturi will be adjusted to maintain 12 inches of water column pressure drop.

As MAP will not utilize vaporized ammonia, once-through pond water will be used at the inlet of the ammonia heat exchanger. The gas flow through the tubes will be at a velocity of about 5,000 feet per minute and will mix the pond water and gas intimately for good contact and absorption. Pond water will used at rate of 10 gpm per 1000 cfm. The pond water will be separated and drained to the plant pond.

Since less ammonia gas will escape the process when producing MAP, the heat load in the double mole scrubbing system will be less and the amount of fluoride volatilized to the gas stream will be less. The maximum emissions from the R/G scrubbing system for MAP production will be:

MAP Emissions

Pollutant	lbs/hr	ton/yr	lbs/ton P_2O_5
Particulate	6.62	29.00	NA
Ammonia Gas	30.93	139.85	NA
Fluoride Gas	1.87	8.19	0.030

H. TOTAL EMISSIONS

The total overall emissions expected during DAP and MAP production are tabulated below:

DAP Production (46.0 tph P_2O_5)

Pollutant	Main Stack lbs/hr	R/G Stack lbs/hr	Total lbs/hr	Total ton/yr	lb/ton P_2O_5
Particulate	10.62	5.52	16.14	70.69	NA
Ammonia Gas	5.17	41.56	46.73	204.68	NA
Fluoride Gas	1.60	1.16	2.76	12.09	0.060

MAP Production (62.4 tph P_2O_5)

Pollutant	Main Stack lbs/hr	R/G Stack lbs/hr	Total lbs/hr	Total ton/yr	lb/ton P_2O_5
Particulate	15.88	6.62	22.51	98.59	NA
Ammonia Gas	7.01	30.93	37.94	166.18	NA
Fluoride Gas	1.87	1.87	3.26	14.28	0.060

3.2 RULE REVIEW

The following are the state and federal air regulatory requirements that apply to new or modified sources subject to a Prevention of Significant Deterioration (PSD) review.

In accordance with EPA and State of Florida PSD review requirements, all major new or modified sources of air pollutants regulated under the Clean Air Act (CAA) are subject to preconstruction review. Florida's State Implementation Plan (SIP), approved by the EPA, authorizes the Florida Department of Environmental Regulation (FDER) to manage the air pollution program in Florida.

The PSD review determines whether or not significant air quality deterioration will result from a new or modified facility. Federal PSD regulations are contained in 40 CFR 52.21, Prevention of Significant Deterioration of Air Quality. The State of Florida has adopted PSD regulations which are essentially identical to the federal regulations and are contained in Chapter 17-2 of the Florida Administration Code (FAC). All new major facilities and major modifications to existing facilities are subject to control technology review, source impact analysis, air quality analysis and additional impact analyses for each pollutant subject to a PSD review. A facility must also comply with the Good Engineering Practice (GEP) stack height rule.

A major facility is defined in the PSD rules as anyone of the 28 specific source categories (see Table 3-5) which has the potential to emit 100 tons per year (tpy) or more, or any other

stationary facility which has the potential to emit 250 tpy or more, of any pollutant regulated under the CAA. A major modification is defined in the PSD rules as a change at an existing major facility which increases the actual emissions by greater than significant amounts (see Table 3-6).

3.2.1 AMBIENT AIR QUALITY STANDARDS

The EPA and the state of Florida have developed/adopted ambient air quality standards, AAQS (see Table 3-7). Primary AAQS protect the public health while the secondary AAQS protect the public welfare from adverse effects of air pollution. Areas of the country have been designated as attainment or nonattainment for specific pollutants. Areas not meeting the AAQS for a given pollutant are designated as nonattainment areas for that pollutant. Any new source or expansion of existing sources in or near these nonattainment areas are usually subject to more stringent air permitting requirements. Projects proposed in attainment areas are subject to air permit requirements which would ensure continued attainment status.

3.2.2 CONTROL TECHNOLOGY EVALUATION

The PSD control technology review requires that all applicable federal and state emission limiting standards be met and that Best Available Control Technology (BACT) be applied to the source. The BACT requirements are applicable to all regulated pollutants subject to a PSD review.

BACT is defined in Chapter 17-2, FAC as an emission limitation, including a visible emission standard, 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 (including fuel cleaning or treatment or innovative fuel combustion techniques) for control of such pollutant. If the Department determines that technological or economic limitations on the application of measurement methodology to a particular part of a source or facility would make the imposition of an emission standard infeasible, a design, equipment, work practice, operational standard or combination thereof, may be prescribed instead, to satisfy the requirement for the application of BACT. Such standard shall, to the degree possible, set forth the emissions reductions achievable by implementation of such design, equipment, work practice or operation. Each BACT determination shall include applicable test methods or shall provide for determining compliance with the standard(s) by means which achieve equivalent results.

The reason for evaluating the BACT is to minimize as much as possible the consumption of PSD increments and to allow future growth without significantly degrading air quality. The BACT review also assures that the most current control systems are incorporated in the design of a proposed facility. The BACT, as a minimum, has to comply with the applicable New Source Performance Standard for the source. The BACT analysis requires the evaluation of the available air pollution control methods

including a cost-benefit analysis of the alternatives. The cost-benefit analysis includes consideration of materials, energy, and economic penalties associated with the control systems, as well as environmental benefits derived from the alternatives.

EPA recently determined that the bottom-up approach (starting at NSPS and working up to BACT) was not providing the level of BACT originally intended. As a result, in December 1987, EPA strongly suggested changes in the implementation of the PSD program including the "top-down" approach to BACT. The top-down approach requires an application to start with the most stringent control alternative, often Lowest Achievable Emission Rate (LAER), and justify its rejection or acceptance as BACT. Rejection of control alternatives may be based on technical or economical infeasibility, physical differences, locational differences, and environmental or energy impact differences when comparing a proposed project with a project previously subject to that BACT.

3.2.3 AIR QUALITY MONITORING

An application for a PSD permit requires an analysis of ambient air quality in the area affected by the proposed facility or major modification. For a new major facility, the affected pollutants are those that the facility would potentially emit in significant amounts. For a major modification, the pollutants are those for which the net emissions increase exceeds the significant emission rate.

Ambient air monitoring for a period of up to one year, but no less than four months, may be required for any pollutant for which ambient air quality standards have been established (other than nonmethane hydrocarbons). For any air pollutant for which no ambient air quality standards have been established, monitoring data may be required by the Department. Existing ambient air data for a location in the vicinity of the proposed project is acceptable if the data meet FDER quality assurance requirements. If not, additional data would need to be gathered. There are guidelines available for designing a PSD air monitoring network in EPA's "Ambient Monitoring Guidelines for Prevention of Significant Deterioration."

FDER may exempt a proposed major stationary facility or major modification from the monitoring requirements with respect to a particular pollutant if the emissions increase of the pollutant from the facility or modification would cause air quality impacts less than the de minimis levels (see Table 3-6) or if no ambient air quality standards have been established.

3.2.4 AMBIENT IMPACT ANALYSIS

An impact analysis is required for a proposed major source subject to PSD for each pollutant for which the increase in emissions exceeds the significant emission rate. Specific atmospheric dispersion models are required in performing the impact analysis. The analysis should demonstrate the project's compliance with AAQS and allowable PSD increments. The impact analysis for criteria pollutants may be limited to only the new

or modified source if the net increase in impacts due to the new or modified source is below significant impact levels.

Typically, a five-year record of meteorological data is used for the evaluation of the highest, second-high short-term concentrations for comparison to AAQS or PSD increments. The term "highest, second-high" refers to the highest of the second-highest concentrations at all receptors. The second-high concentration is considered because short-term AAQS specify that the standard shall not be exceeded at any location more than once a year. If less than five years of meteorological data are used in the modeling analysis, the highest concentration at each receptor is normally used.

3.2.5 ADDITIONAL IMPACT ANALYSIS

The PSD rules also require analyses of the impairment to visibility and the impact on soils and vegetation that would occur as a result of the project. A visibility impairment analysis must be conducted for PSD Class I areas. Impacts due to commercial, residential, industrial, and other growth associated with the source must be addressed.

3.2.6 GOOD ENGINEERING PRACTICE STACK HEIGHT

In accordance with Chapter 17-2, FAC, the degree of emission limitation required for control of any pollutant is not to be affected by a stack height that exceeds Good Engineering Practice (GEP), or any other dispersion technique. GEP stack height is defined as the highest of:

1. 65 meters (m), or
2. A height established by applying the formula:

   Hg = H + 1.5 L

   where:

   Hg - GEP stack height,

   H - Height of the structure or nearby structure, and

   L - Lesser dimension, height or projected width of nearby structure(s), or
3. A height demonstrated by a model or field study.

The GEP stack height regulations require that the stack height used in modeling for determining compliance with AAQS and PSD increments not exceed the GEP stack height. The actual stack height may be higher or lower.

3.3 RULE APPLICABILITY

The MAP/DAP production increase at Farmland Hydro, L.P. is classified as a major modification to a major facility subject to both state and federal regulations as set forth in Chapter 17-2, FAC. The facility is located in an area classified as attainment for each of the regulated air pollutants and the Farmland Hydro, L.P. complex is beyond 100 km from the nearest Class I area. The proposed modification to the existing MAP/DAP North plant will result in significant increases in fluoride emissions as defined by Rule 17-2.500(2)(e)2, FAC, but less than a significant increase in particulate matter emissions and the emissions of other pollutants. The project will therefore be subject to PSD preconstruction review requirements in accordance

with FAC Rule 17-2.500 for fluorides. This will include a determination of Best Available Control Technology, an air quality review, Good Engineering Practice stack height analysis and an evaluation of impacts on soils, vegetation and visibility.

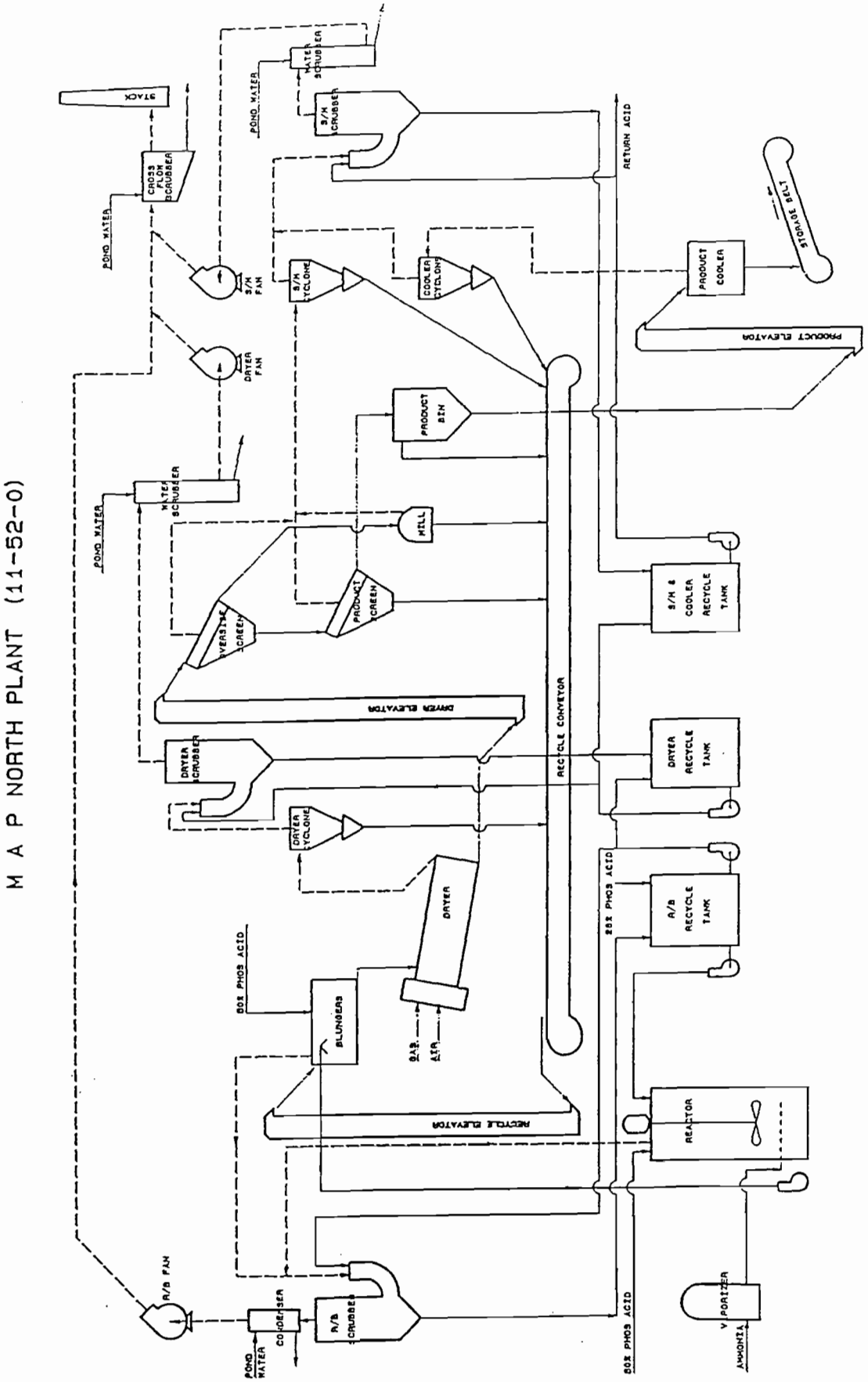


FIGURE 3-1
MAP/DAP PLANT - NORTH
PROCESS FLOW DIAGRAM - EXISTING LAYOUT

FARMLAND HYDRO, L.P.
POLK COUNTY, FLORIDA

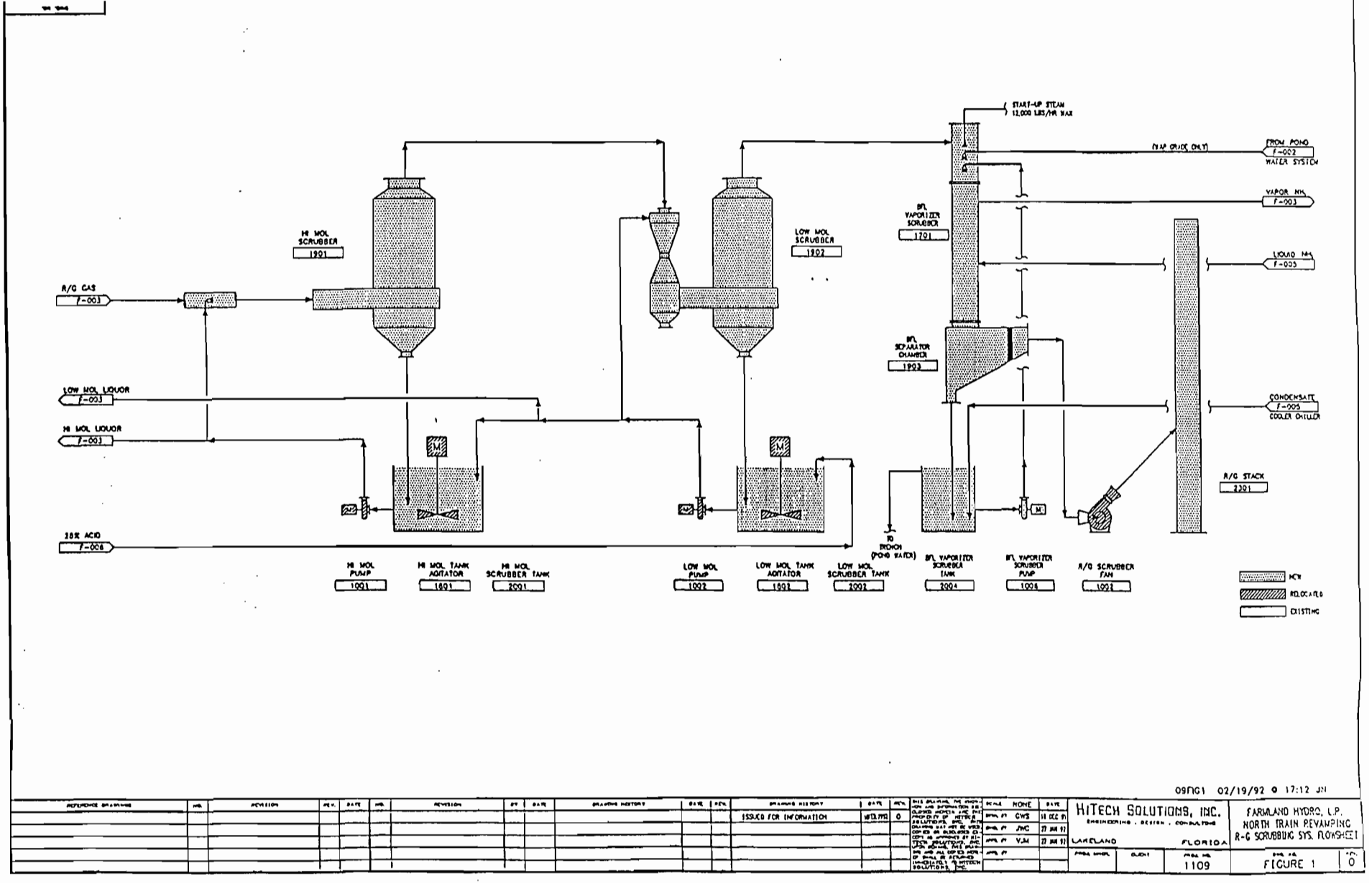


FIGURE 3-2.1
MAP/DAP PLANT - NORTH
PROCESS FLOW DIAGRAM
R-G SCRUBBING SYSTEM

FARMLAND HYDRO, L.P.
POLK COUNTY, FLORIDA

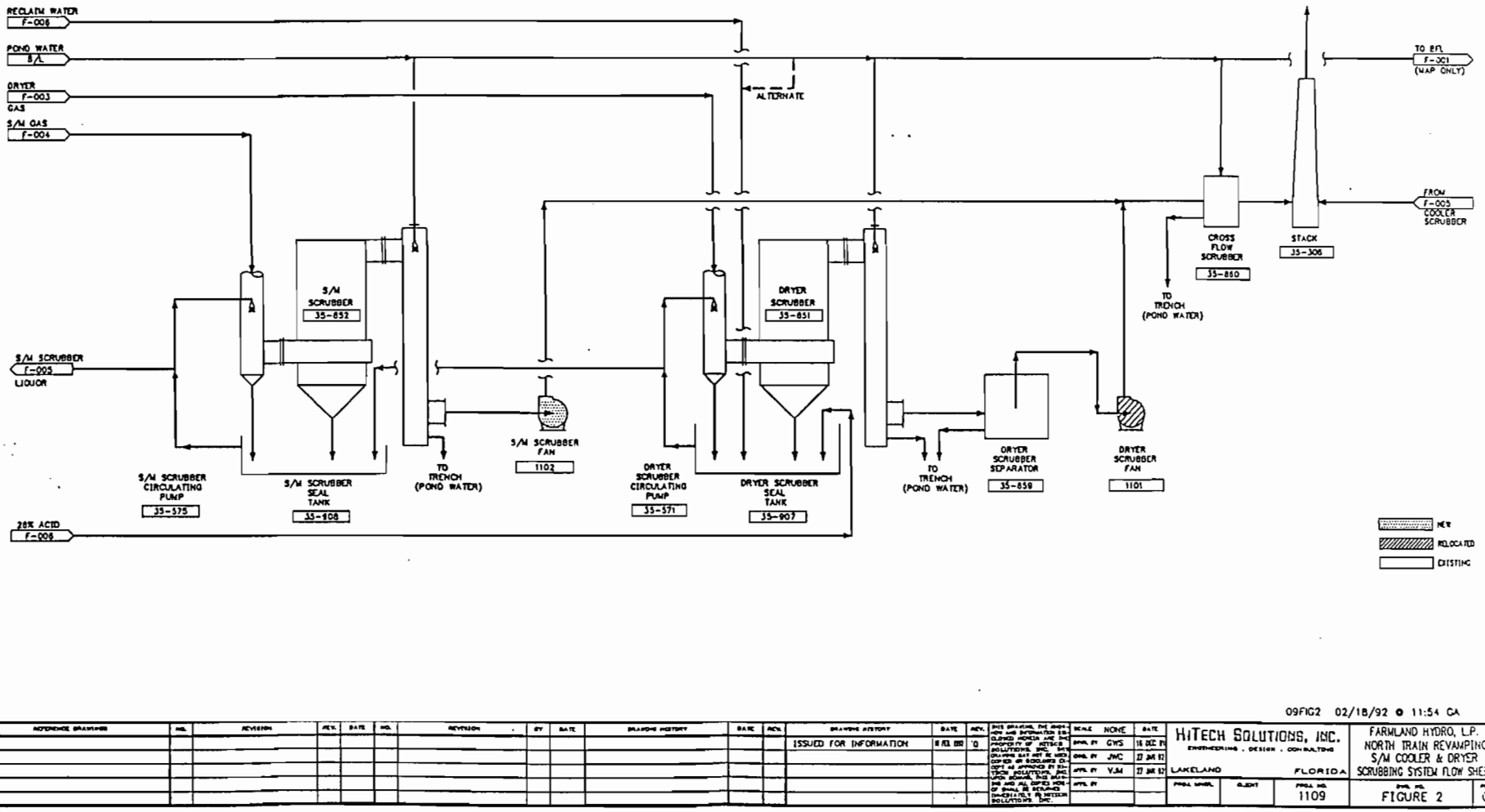


FIGURE 3-2.2
MAP/DAP PLANT - NORTH
PROCESS FLOW DIAGRAM - PROPOSED LAYOUT
S/M COOLER AND DRYER SCRUBBING SYSTEM

FARMLAND HYDRO, L.P.
POLK COUNTY, FLORIDA

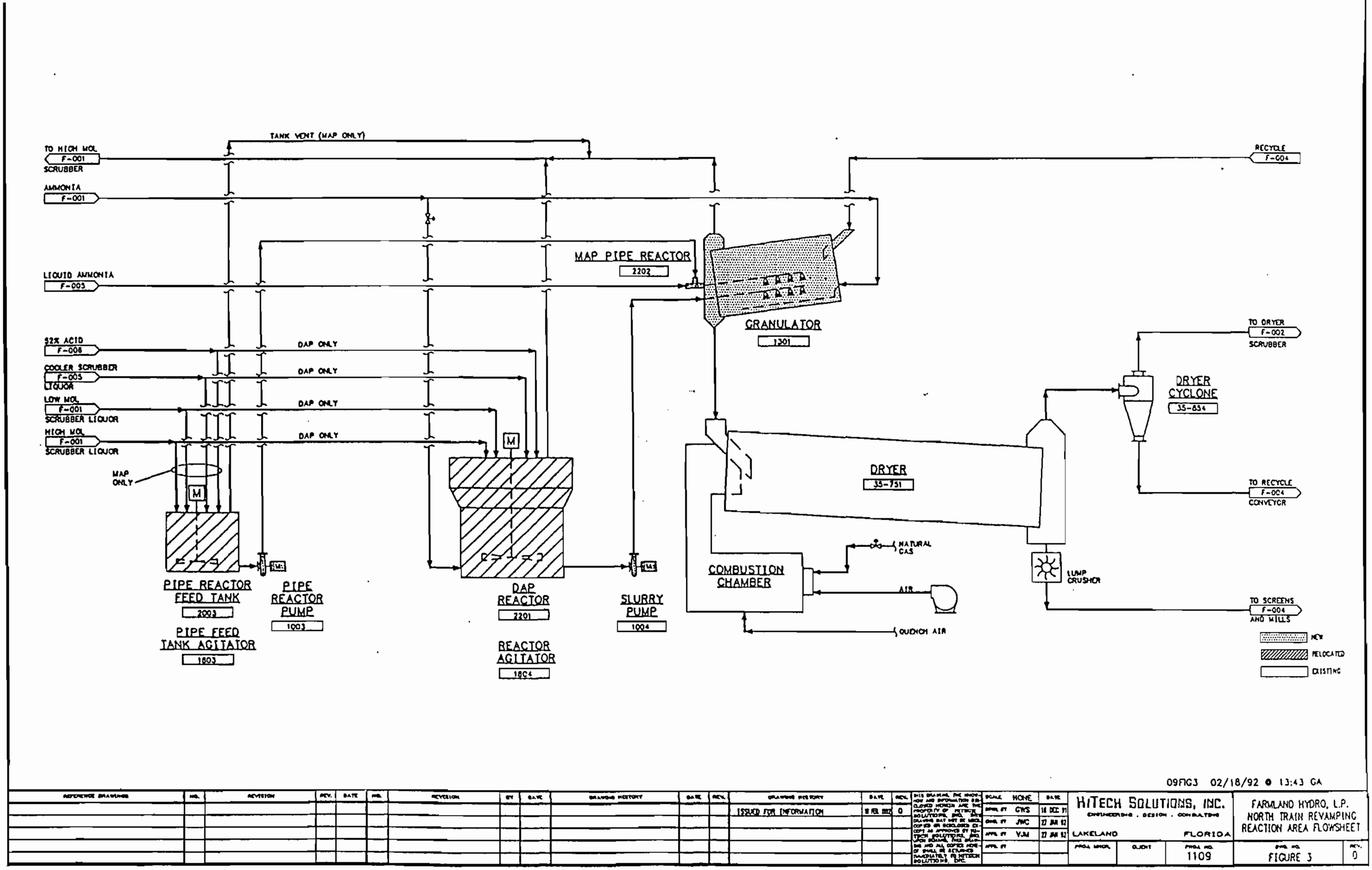

TANK VENT (MAP ONLY)
TO HIGH MOL F-001 SCRUBBER
AMMONIA F-001
LIQUID AMMONIA F-003
52% ACID F-006
COOLER SCRUBBER F-005 LIQUOR
LOW MOL F-001 SCRUBBER LIQUOR
HIGH MOL F-001 SCRUBBER LIQUOR
DAP ONLY
MAP ONLY
MAP PIPE REACTOR 2202
GRANULATOR 1301
RECYCLE F-004
TO DRYER F-002 SCRUBBER
DRYER CYCLONE 35-834
DRYER 35-751
TO RECYCLE F-004 CONVEYOR
NATURAL GAS
COMBUSTION CHAMBER
AIR
LUMP CRUSHER
TO SCREENS F-004 AND MILLS
QUENCH AIR
PIPE REACTOR FEED TANK 2003
PIPE REACTOR PUMP 1003
PIPE FEED TANK AGITATOR 1803
DAP REACTOR 2201
REACTOR AGITATOR 1804
SLURRY PUMP 1004
NEW
RELOCATED
EXISTING
09FIG3 02/18/92 @ 13:43 GA
ISSUED FOR INFORMATION
HITECH SOLUTIONS, INC.
LAKELAND FLORIDA
FARMLAND HYDRO, L.P. NORTH TRAIN REVAMPING REACTION AREA FLOWSHEET
1109
FIGURE 3
0

FIGURE 3-2.3
MAP/DAP PLANT - NORTH
PROCESS FLOW DIAGRAM - PROPOSED LAYOUT
REACTOR AND DRYER SYSTEM

FARMLAND HYDRO, L.P.
POLK COUNTY, FLORIDA

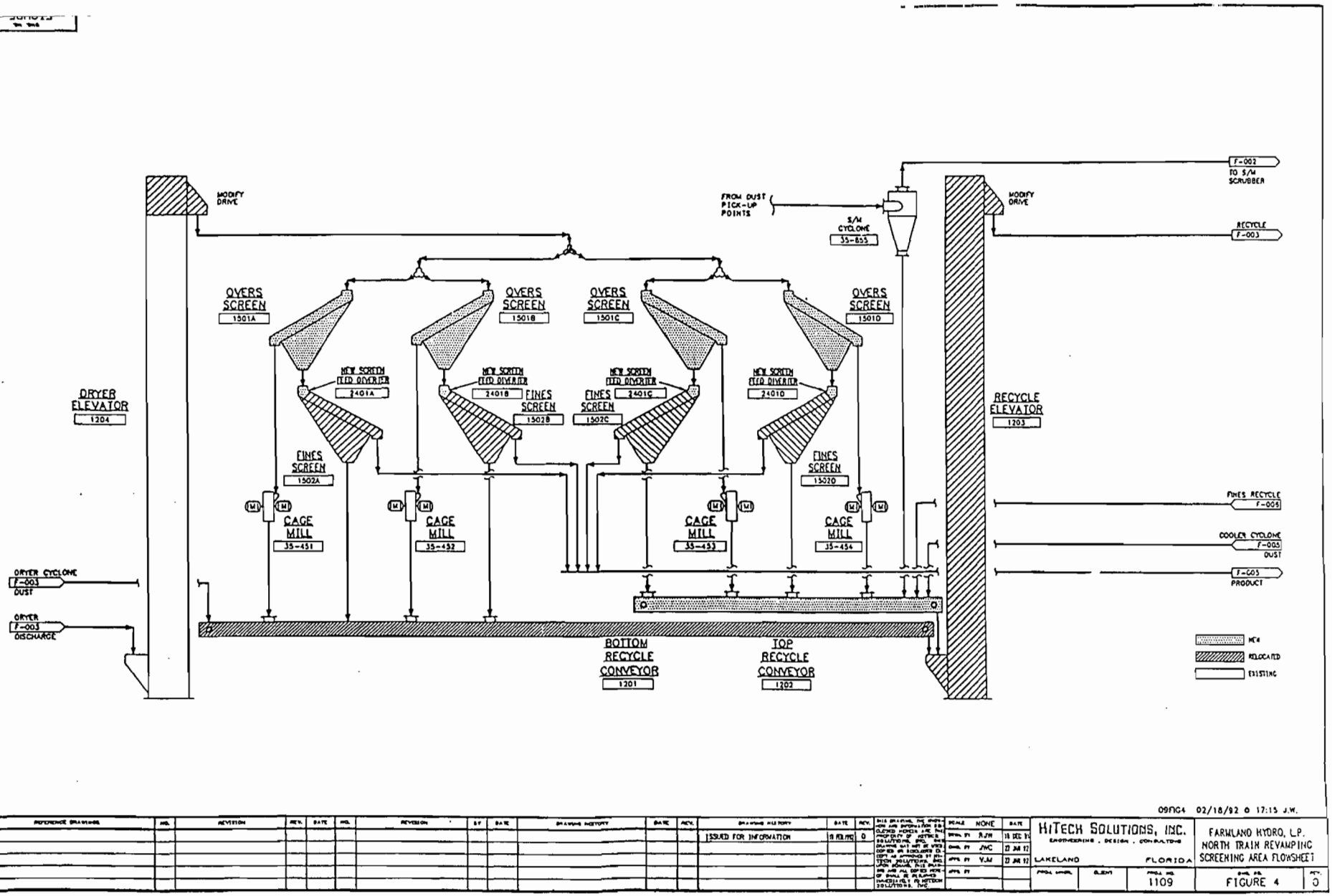


FIGURE 3-2.4
MAP/DAP PLANT - NORTH
PROCESS FLOW DIAGRAM - PROPOSED LAYOUT
SCREENING SYSTEM

FARMLAND HYDRO, L.P.
POLK COUNTY, FLORIDA

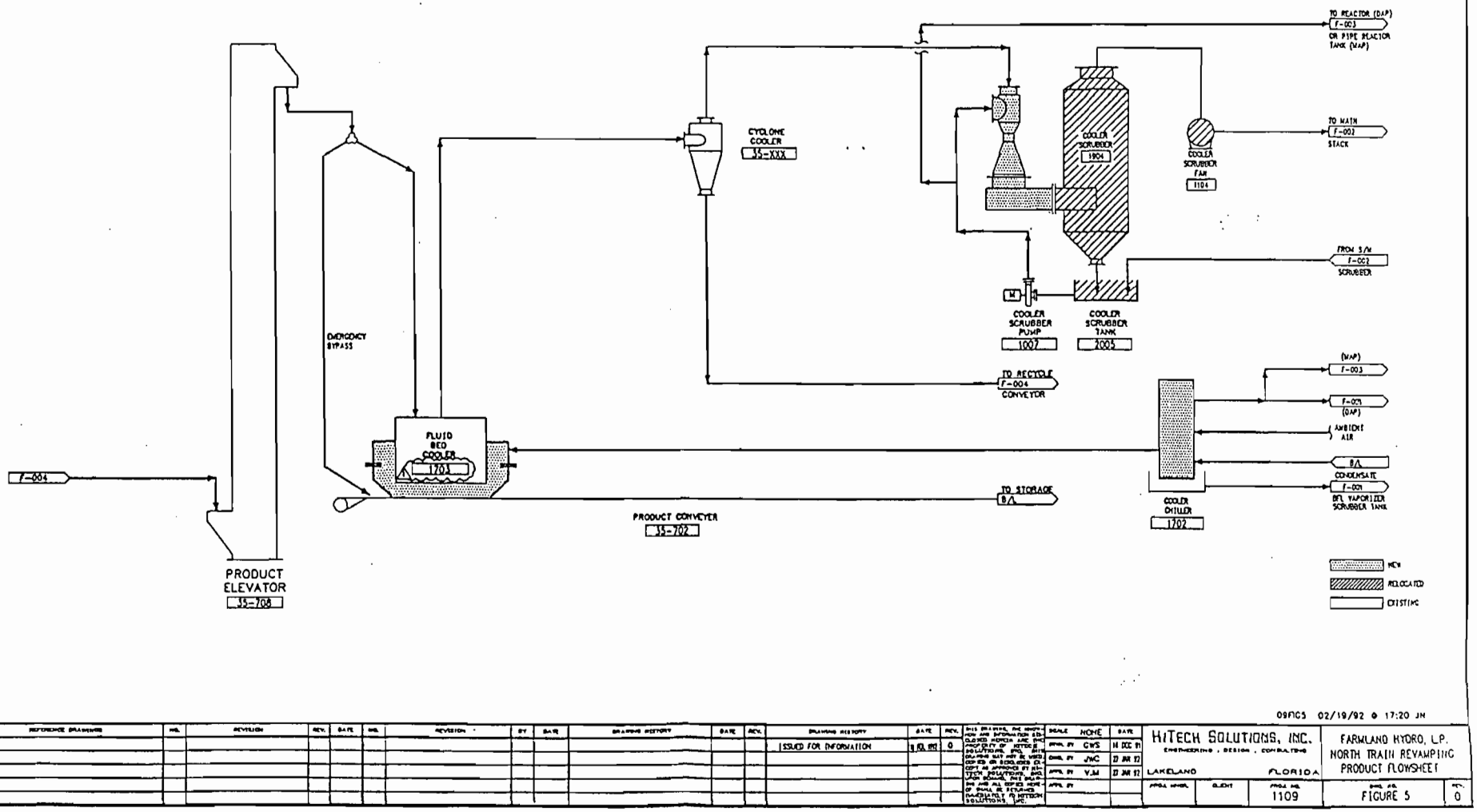


FIGURE 3-2.5
MAP/DAP PLANT
PROCESS FLOW DIAGRAM - PROPOSED LAYOUT
PRODUCT COOLER SCRUBBING SYSTEM

FARMLAND HYDRO, L.P.
POLK COUNTY, FLORIDA

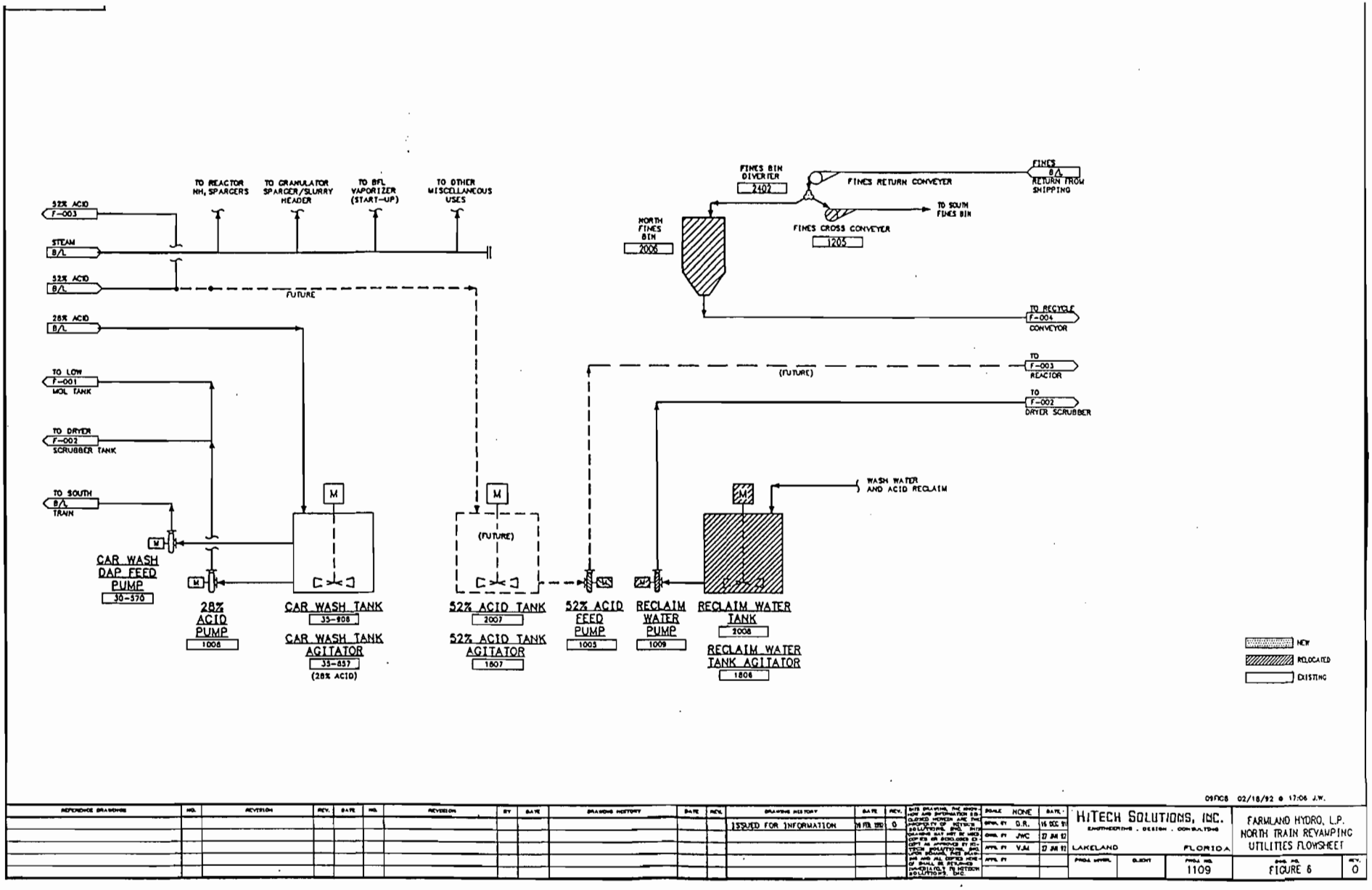


FIGURE 3-2.6
MAP/DAP PLANT - NORTH
PROCESS FLOW DIAGRAM - PROPOSED LAYOUT
UTILITIES FLOW SHEET

FARMLAND HYDRO, L.P.
POLK COUNTY, FLORIDA

TABLE 3-1

GTSP/MAP/DAP NORTH PLANT
MEASURED EMISSION DATA SUMMARY

FARMLAND HYDRO, L.P.
POLK COUNTY, FLORIDA

	TEST DATE	EMISSIONS		
		Part. Matter	Fluorides	
Product	month/year	lb/hr	lb/hr	lb/ton P_2O_5
MAP	4/90	12.21	3.412	0.110
MAP	12/90	13.25	3.695	0.109
MAP	9/91	5.75*	1.366*	0.040*
DAP**	7/89	18.19	1.035	0.056
DAP**	5/90	4.70	0.825	0.045

* The 1991 MAP test data for particulate matter and fluorides indicates low emission rates because of operational difficulty experienced in achieving adequate air flow through the product dryer and cooler. The lower air flow rate resulted in lower particulate matter entrainment as well as inadequate drying and cooling of the product.

** These are the only recent test data available on DAP, which was produced less than 10% of the time.

TABLE 3-2

CONTEMPORANEOUS PM EMISSION CHANGES

FARMLAND HYDRO, L.P.
POLK COUNTY, FLORIDA

Source	Permit No.	Exp. Date [1]	Permitted Emissions lb/hr	Permitted Emissions tpy	Actual Emissions [2] lb/hr	Actual Emissions [2] tpy
Rock Unloading	AO53-151296	11/30/93	35.5	155.5	11.2	32.8
PAD 1 Ball Mill	AO53-157062	1/17/94	26.2	114.8	2.9	8.1
PAD 2 Ball Mill	AO53-157064	1/17/94	27.2	119.1	2.9	8.4
TOTAL				389.4		49.3

[1] Permits surrendered to FDER on 6/17/91 when dry rock processing was discontinued.

[2] Emissions averaged over 1989 and 1990. See calculations provided in the Appendix

TABLE 3-3

PROPOSED CHANGES IN PRODUCTION AND EMISSION RATES(1)

FARMLAND HYDRO, L.P.
POLK COUNTY, FLORIDA

	NORTH PLANT		
	GTSP	MAP	DAP
PERMIT ALLOWABLE CONDITIONS			
Rate (tph product)	33.2	70	50
F (lb/ton P_2O_5)	0.53	0.12	0.06
(lb/hr)	8.18	3.4	2.4
(tpy)	35.8	14.9	10.5
PM (lb/hr)	26.9	26.9	26.9
(tpy)	117.8	117.8	117.8
Operating Factor	1.0	1.0	1.0
ACTUAL CONDITIONS (1990 - 1991 AVERAGE)			
Rate (tph product)	--	63.2	45.0
F (lb/ton P_2O_5)	--	0.07	0.051
(lb/hr)	--	2.83	0.93
(tpy)	--	9.4	0.19
PM (lb/hr)	--	10.4	11.45
(tpy)	--	35.1	2.27
NH_3 (lb/hr)	--	--	77.4
(tpy)	--	--	291.4
Operating Factor	--	0.83	0.06

TABLE 3-3 (continued)

	NORTH PLANT		
	GTSP	MAP	DAP
PROPOSED CONDITIONS			
Rate (tph product)	NA	120	100
F (lb/ton P_2O_5)	NA	0.06	0.06
(lb/hr)	NA	3.74	2.76
(tpy)	NA	16.4	12.1
PM (lb/hr)	NA	22.5	16.4
(tpy)	NA	98.6	71.8
NH_3 (lb/hr)	NA	37.9	46.7
(tpy)	NA	166.2	204.7
Operating Factor	NA	1.0	1.0

1. See Appendix for calculations of emission rates.

TABLE 3-3 (continued)

Operation	Pollutant	Presently Permitted Emissions		Proposed Permit Emissions		Net Change
		lb/hr	ton/yr	lb/hr	ton/yr	ton/yr
MAP	Particulate Matter	26.9	117.8	22.5	98.6	- 19.2
	Fluorides	3.4	14.9	3.7	16.4	+ 1.5
	Ammonia	--	--	37.9	166.2	--
DAP	Particulate Matter	26.9	117.8	16.1	70.7	- 47.1
	Fluorides	2.4	10.5	2.8	12.1	+ 1.6
	Ammonia	--	--	46.7	204.7	--
Natural Gas Combustion Products	Particulate Matter	0.25	1.10	0.25	1.10	0.0
	Sulfur Dioxide	0.03	0.13	0.03	0.13	0.0
	Nitrogen Oxides	7.00	30.70	7.00	30.70	0.0
	Carbon Monoxide	1.75	7.70	1.75	7.70	0.0
	NMHC *	0.14	0.61	0.14	0.61	0.0

* Non Methane Hydrocarbons

TABLE 3-4

NET EMISSION INCREASES(1)

FARMLAND HYDRO, L.P.
POLK COUNTY, FLORIDA

Pollutant	North Plant Emissions tpy
FLUORIDES (MAP-Worst Case)	
Present (actual)	- 9.4
Proposed	+ 16.4
Total Increase	+ 7.0
Significant Increase (2)	3.0
PM/PM_{10} (MAP-Worst Case)	
Contemporaneous (3)	- 49.3
Present (actual)	- 35.1
Proposed	+ 98.6
Total Increase	+ 14.2
Significant Increase (2)	15.0
Ammonia (DAP-Worst Case)	
Present (actual) (4)	- 291.4
Proposed (5)	+ 204.7
Total Increase	- 86.7
Significant Increase (6)	NA

(1) See Appendix for emission calculations.
(2) Presented in Table 500.2, Chapter 17-2, FAC.
(3) Contemporaneous emission decreases due to shutdown sources.
(4) Based on past performance data.
(5) Ammonia emissions based on HiTech data.
(6) Not applicable to Ammonia, Chapter 17-2, FAC.

TABLE 3-5

MAJOR FACILITY CATEGORIES

FARMLAND HYDRO, L.P.
POLK COUNTY, FLORIDA

Fossil fuel fired steam electric plants of more than 250 MMBTU/hr heat input
Coal cleaning plants (with thermal dryers)
Kraft pulp mills
Portland cement plants
Primary zinc smelters
Iron and steel mill plants
Primary aluminum ore reduction plants
Primary copper smelters
Municipal incinerators capable of charging more than 250 tons of refuse per day
Hydrofluoric acid plants
Sulfuric acid plants
Nitric acid plants
Petroleum refineries
Lime plants
Phosphate rock processing plants
Coke oven batteries
Sulfur recovery plants
Carbon black plants (furnace process)
Primary lead smelters
Fuel conversion plants
Sintering plants
Secondary metal production plants
Chemical process plants
Fossil fuel boilers (or combinations thereof) totaling more than 250 million BTU/hr heat input
Petroleum storage and transfer units with total storage capacity exceeding 300,000 barrels
Taconite ore processing plants
Glass fiber processing plants
Charcoal production plants

TABLE 3-6

REGULATED AIR POLLUTANTS - SIGNIFICANT EMISSION RATES

FARMLAND HYDRO, L.P.
POLK COUNTY, FLORIDA

	Significant Emission Rate (tons/yr)	De Minimis Ambient Impacts Pollutant (ug/m3)	
CO	100	575	(8-hour)
NO_x	40	14	(NO_2, Annual)
SO_2	40	13	(24-hour)
Ozone	40 (VOC)	---	
PM (TSP)	25	10	(24-hour)
PM_{10}	15	10	(24-hour)
TRS (including H_2S)	10	0.2	(1-h our)
H_2SO_4 mist	7	---	
Fluorides	3	0.25	(24-hour)
Vinyl Chloride	1	15	(24-hour)
	(pounds/yr)		
Lead	1200	0.1	(Quarterly avg)
Mercury	200	0.25	(24-hour)
Asbestos	14	---	
Beryllium	0.8	0.001	(24-hour)

TABLE 3-7

AMBIENT AIR QUALITY STANDARDS

FARMLAND HYDRO, L.P.
POLK COUNTY, FLORIDA

Pollutant		FDER (State)		USEPA (National) Primary		Secondary	
		ug/m3	PPM	ug/m3	PPM	ug/m3	PPM
SO_2,	3-hour	1,300	0.5	-	-	1300	0.5
	24-hour	260	0.1	365	0.14	-	-
	Annual	60	0.02	80	0.03	-	-
PM_{10},	24-hour	150	-	150	-	150	-
	Annual	50	-	50	-	50	-
CO,	1-hour	40,000	35	40,000	35	-	-
	8-hour	10,000	9	10,000	9	-	-
Ozone,	1-hour	235	0.12	235	0.12	235	0.12
NO_2,	Annual	100	0.05	100	-	100	-
Lead,	Quarterly	1.5	-	1.5	-	1.5	-

TABLE 3-8

PSD INCREMENTS

FARMLAND HYDRO, L.P.
POLK COUNTY, FLORIDA

Pollutant	Allowable PSD Increments (State/National)		
	Class I ug/m3	Class II ug/m3	Class III ug/ m3
TSP, Annual	5	19	37
24-hour	10	37	75
SO_2, Annual	2	20	40
24-hour	5	91	182
3-hour	25	512	700
NO_2, Annual	2.5	25	50

4.0 BEST AVAILABLE CONTROL TECHNOLOGY

Best Available Control Technology (BACT) is required to control air pollutants emitted from newly constructed major sources or from a modification to a major emitting facility if the modification results in significant increase in the emission rate of regulated pollutants (see Table 3-6 for significant emission levels).

The North plant will emit particulate matter, ammonia, and fluorides. The emission rate increases proposed by Farmland Hydro, L.P. have been summarized in Table 3-4. A small amount of natural gas combustion products are also emitted from the dryer system. Fluorides are present in the tail gas exhausted from all MAP/DAP plants. The fluoride emission increase from the proposed project will represent a significant increase while particulate matter emissions will be less than significant. A BACT analysis is therefore required for only fluorides.

4.1 EMISSION STANDARDS FOR MAP/DAP PLANTS

Federal New Source Performance Standards (NSPS) have been promulgated for DAP plants. These standards became effective on October 22, 1974 and are codified in 40 CFR 60, Subpart V and require fluoride emissions to be limited to no more than 0.060 pound per ton of P_2O_5. Although no separate NSPS exist for MAP plants, it is recognized that the fluoride emission standard that applies to the DAP plant is also reasonable for the MAP plant. The NSPS under Subpart V do not include emission standards for particulate matter or ammonia from MAP/DAP plants.

EPA revised/amended the New Source Performance Standards for DAP plants in 1989. At that time, no change to the emission standard was deemed necessary or justified. There has been no change in EPA philosophy related to DAP plants since the 1989 review.

A review of BACT/LAER determinations published in the EPA Clearinghouse indicates that no new control alternatives have been applied to MAP/DAP plants as of 1991 that would result in a consistent reduction in fluoride emission below 0.06 pound per ton of P_2O_5.

The general visible emission limiting standard in Chapter 17-2.610, FAC, requires that the visible emissions from the plant not exceed 20 percent opacity.

4.2 CONTROL TECHNOLOGY

At all MAP/DAP plants, wet scrubbing equipment is conventionally applied for removal of ammonia, fluorides and particulate dusts from effluent gas streams. These scrubbers are designed for a variety of functions which include ammonia recovery, particulate collection, and fluoride removal. These functions require a complex arrangement of the scrubbing equipment often tailored for a specific facility.

Wet scrubbers are chosen over other types of pollution control devices because of the flexibility offered in controlling emissions of ammonia, fluorides, and particulates in gas streams high in moisture content. All the gas streams in the MAP/DAP plant originate in wet reactors, dryers, or other pieces of

process equipment laden with a significant amount of moisture. The high concentration of water vapor in the gas streams pose problems in the use of fabric collectors and, to a lesser extent, in the use of mechanical or electrostatic collectors.

Typically the scrubbing media are weak acids (from within the process) and pond water (for tail gas scrubbing). The availability of process water as a scrubbing medium and the process water recirculation system as a settling basin for collected solids are ideal features for wet scrubbers.

Although the focus of the control technology review is fluorides, the fertilizer manufacturing process collectively optimizes the collection of particulate matter, ammonia recovery and fluoride control. The combination of requirements for particulate collection, gas absorption for NH_3 recovery, and fluoride emission control requires the application of a wide variety and combination of scrubber types for MAP/DAP plants. The most often used are two-stage wet cyclonic, venturi/cyclone and cross-flow packed scrubbers.

The two pollutants generally addressed under control technology applicability in granular fertilizer plants are particulate matter and fluoride. Ammonia is presently controlled more for material recovery and odor control. There is also a limit placed on the opacity of emissions from granular fertilizer plant stacks of 20 percent. In discussing Best Available Control Technology, it is necessary to address each pollutant separately as the overall control system optimizes the control of all three

pollutants. It should be noted, however, that only fluoride emissions from the North plant require a BACT analysis.

An ammoniated fertilizer plant will generally have five separate process gas streams which must be controlled prior to discharging to atmosphere:

A. REACTOR GAS STREAM. Most ammoniated fertilizer plants use a vessel in which most of the ammonia reacts with the phosphoric acid. The gas stream from this reactor contains large amounts of water vapor, large amounts of ammonia, and small amounts of fluoride vapor.

B. GRANULATOR GAS STREAM. The final ammoniation of the phosphoric acid occurs in the granulator. The unit is vented and the air stream contains large amounts of particulate matter, large amounts of ammonia, and small amounts of fluoride vapor.

C. DRYER AIR STREAM. The dryer is a direct contact dryer which uses hot gases to remove excess moisture from the product. The air stream contains particulate matter, a trace of ammonia, a trace amount of fluoride vapor, and combustion products from the natural gas used to fire the dryer.

D. PROCESS EQUIPMENT VENTILATION. The various solids handling equipment is kept under a slight negative

pressure by venting all equipment. Some small amount of dust becomes airborne in these streams. Because the solid material is hot, there is also very small amounts of ammonia vapor released into the air stream. Little or no fluoride vapor is evolved by the solids.

E. PRODUCT COOLER AIR STREAM. The final product is cooled by a solid-to-air heat exchanger prior to transfer to storage. This air stream contains some particulate matter and a very small amount of ammonia. Little or no fluoride vapor is evolved in the cooler.

In general, there is not a separate system for each of the above air streams. In nearly all plants, the reactor and the granulator air streams are combined as these air streams contain over 99 percent of the total ammonia evolved into the gas streams. In some plants, the process equipment venting and the low temperature air streams will be combined while the dryer air stream is nearly always left separate for process reasons.

In the Farmland Hydro North train, it is proposed to combine the reactor and the granulator air streams and have separate air streams for the dryer, the process equipment, and the product cooler.

4.2.1 PARTICULATE MATTER

The particulate matter generated in a fertilizer plant is all fine fertilizer dust. In an ammoniated fertilizer plant, the

dust will be either MAP or DAP fertilizer depending on which grade of fertilizer the plant is producing. The particulate size analyses which have been performed on the dust indicate that the size distribution is essentially 100 percent plus one micron in size and approximately 80 percent plus five microns in size.

The Best Available Control Technology uses a standard dry cyclone to separate essentially all of the plus 5 micron material from the air stream prior to the stream entering the wet scrubbing system. Modern high efficiency cyclones using a pressure drop of approximately 3 to 4 inches of water column are completely satisfactory for this operation. The basic cyclone design has remained relatively constant for over 20 years. Only minor improvements have been made in materials of construction to improve operating life and decrease the tendency of the cyclone to plug.

The granulator air stream will not have a cyclone as most of the particulate matter in the air stream is less than five microns and the gas stream is extremely humid. Cyclones will not operate satisfactorily in this service. All other air streams that contain particulate matter (Dryer, Cooler, Process Equipment Evacuation) will have cyclones.

Once the large size particulate matter has been removed, the gases will enter into the scrubbing systems. Because of the particulate size, a venturi scrubber with a pressure drop of 12 inches water column has proven to be extremely efficient in particulate removal while also providing ability, in a single unit, to remove the ammonia gases. Minimum measured particulate

removal efficiencies at 12 inches water column pressure drop have been 99.5 percent with normal operating efficiencies of 99.9 percent. The minimum efficiencies tend to occur only during extreme process upsets which have an expected occurrence rate of once or twice per year for periods of less than one hour.

The use of baghouses has been tried for some process air streams (dryer and product cooler). In general, a baghouse has proven to be less reliable for removal of the hydroscopic fertilizer particles than wet venturi scrubbers. For the product cooler air stream, the baghouse approach has proven satisfactory only in extremely dry climates (Idaho) where the normal atmospheric relative humidity is less than fifty percent. In wet climates like Florida (where the normal atmospheric relative humidity is fifty to ninety percent), the baghouses tend to plug. This plugging leads to failure of the bag fabric and excessive emissions from the area where the bag fabric failed.

4.2.2 AMMONIA

While ammonia emissions are not regulated at present, they are important to the plant operation. The emissions of ammonia have a direct economic impact on the plant and the emission of significant amounts of ammonia can impact the opacity of the stack and cause local odor problems.

The low pressure drop venturis used for particulate scrubbing are also excellent for the removal of ammonia vapor. For the low content ammonia streams (dryer, process equipment evacuation, cooler), the ammonia vapor in the exit gas stream

much of the fluoride in the phosphoric acid is chemically complexed so that the vapor pressure is extremely low.

The new two-stage (called "double mole") Reactor/Granulator scrubbing system takes advantage of these phenomena to capture a majority (about 70 weight percent) of the ammonia vapor in the first stage with a high mole ratio scrubbing liquor. The temperature of the high mole scrubbing liquor will be quite high but the fluoride evolution will be quite low as the fluoride vapor pressure is low. In the second stage scrubber, a lower mole ratio liquor is used (less than 1.0). The amount of ammonia to react, however, is significantly less than a standard single stage scrubber and the temperature of the scrubbing liquor is raised to only about 160 ^{o} F. (compared to a standard single stage scrubber of over 200 ^{o} F.). The amount of fluoride evolved is therefore much lower.

In the Farmland Hydro, L.P. North plant, the other gas streams will be scrubbed with low strength phosphoric acid. Standard practice calls for using about 28 percent P_2O_5 acid. When this liquor is contacted with air in a venturi scrubber, fluoride is evolved into the air stream to meet the vapor pressure curves. These streams therefore generally contain significant amounts of fluoride vapor. At least one plant is using less than 10 percent P_2O_5 acid which is the proposed strength for the Farmland Hydro, L.P. modified North plant. With this strength of phosphoric acid, the fluoride evolved is much lower.

The Farmland Hydro, L.P. proposed North plant modifications are using Best Available Control Technology to minimize the evolution of fluoride vapor from the acid scrubbers into the air stream. Now it is important to examine the Best Available Control Technology for removal of even that reduced amount of fluoride vapor from the air stream.

The best technique for fluoride scrubbing would be the combination of all air streams into a single common scrubber. This scrubber would be a packed scrubber using once-through fresh water (no fluoride in the incoming water, with water discharge to a treatment plant). For the modified North plant, this would result in the continuous use of about 3000 gallons per minute of fresh water. The discharge water would contain about 5 ppm of fluoride. While this is a small amount, it still exceeds allowable water discharge standards so fluoride removal technology would have to be applied. This technology has a total cost of approximately $10 dollars per 1000 gallons and produces a small amount of solids which must be contained and disposed of on the plant site.

The fresh water required also exceeds the allowable pumping limits imposed by water rationing and by State of Florida water regulatory authorities. While this technology would remove virtually all of the fluoride vapor in the air stream, it would be at the expense of a limited natural resource (fresh water) and would create a significant cost impact on the plant. In essence, the problem would be converted from a vapor emission to a solids problem at a significant cost.

All fertilizer manufacturing complexes have opted to reuse and recirculate as much water as possible to minimize the impact of fresh water requirements. This water will stabilize at about 5000 ppm of fluoride and is used throughout the plant for scrubbing and cooling. Using this water in a tail gas scrubber will produce a fluoride emission of about 0.06 pounds of fluoride per ton of P_2O_5 brought into the plant. We have opted to examine this and other technology for the proposed modification.

One other approach for fluoride removal has been the use of large quantities of pond water to condense much of the water vapor in the air stream and produce a low water temperature exiting the scrubber. This technique is in use in a 1982 vintage fertilizer plant and is partially utilized at Farmland Hydro, L.P. at present on the reactor plus granulator stream. In examining this approach, it was determined that approximately 10,000 gallons per minute additional pond water would be required. This amount of additional water exceeds the available water by a large amount. The estimate to install a completely new pond water supply and return system to meet these water requirement needs was estimated at over three million dollars.

The majority of the fluoride in the air streams (about 50 to 60 percent of the total) is contained in the single reactor/granulator air stream. This air stream also contains significant amounts of water vapor (dew point about 182 ^{o} F). Since ammonia comes into the plant as liquid and is used in the process as a vapor, energy must be expended to vaporize the ammonia. HiTech Solutions, Inc. has the license of a patented

process using waste heat from the reactor to vaporize the ammonia and has installed several of these systems at other plants. If this heat exchanger follows the acid scrubbers, then water vapor in the air stream will be condensed as the ammonia is vaporized.

In examining the heat balance and fluoride evolution, it was discovered that the water condensed would be pure and if all of the fluoride in the gas stream were to be in the water stream, the water stream would contain about 500 ppm of fluoride. In examining the vapor pressure curves for low strength fluoride solutions, it was discovered that this water stream would allow a gaseous fluoride emission of the same or slightly lower than using standard plant pond water.

The gas is passed through the heat exchanger tubes at a velocity of about 7000 feet per minute which will allow a contact time in the heat exchanger between the water and the gas approximately equivalent to a venturi scrubber. It was therefore decided to use this approach for reactor/granulator gas scrubbing. All available pond water to the North plant is therefore available to the other gas streams so that they may be properly contacted for fluoride removal from these streams.

The use of fresh water, in place of pond water, would reduce the fluoride from the tail gas scrubber. If a smaller quantity of fresh water is used in a single tail gas scrubber and a large volume recirculated, the fluoride content of the recirculated water will be lower. The dew point of the combined gas streams will be about 145 ^{o} F and the recirculated water will achieve approximately the dew point temperature of the gas stream because

of the overall heat balance. This would cause a higher concentration of fluorides in the final gas stream due to liquid gas equilibrium.

In examining this technology, it was discovered that about 500 to 1000 gallons per minute of fresh water would be required to achieve significant fluoride emissions reduction over using once through pond water. However, the use of fresh water raises several environmental and chemical process related issues which need to be addressed.

The Farmland Hydro, L.P. complex is located in a sensitive water management area. Farmland Hydro has adopted a strict water reduction and conservation program under the direction of the Southwest Florida Water Management District. The use of fresh water for tail gas scrubbing would result in a significant increase in the amount of fresh water consumed by the complex contradicting the facility's commitment to seek ways to reduce current fresh water requirements. The additional scrubber water discharge will result in an increase in the water entering the pond system and within a short period of time exceed the pond's surge capacity requirements. The increased fresh water usage will also adversely affect the delicate water balance of the complex, eventually forcing a plant shut down. A dedicated fresh water recirculation system could be constructed with a dedicated pond and distribution system at considerable expense. Over time the fluoride levels in this dedicated pond would rise to unacceptable levels forcing the use of make-up fresh water. This situation raises the same issues discussed above.

In consideration of the above adverse impacts, the use of fresh water over pond water for a small increase in fluoride removal is not justified.

4.3 BACT CONCLUSION

The proposed combination of wet scrubbers and scrubbing media provides the Best Available Control Technology, given the water limitations imposed on the plant as a whole and the necessity of achieving fluoride emissions of 0.06 lb/ton of P_2O_5.

5.0 AIR QUALITY REVIEW

The air quality review required of a PSD construction permit application potentially requires both air quality modeling and air quality monitoring. The air quality monitoring may be required when the impact of air pollutant emission increases and decreases associated with a proposed project exceeds the de minimis impact levels defined by Rule 17-2.500(3)(e)1, FAC or in cases where an applicant wishes to define existing ambient air quality by monitoring rather than by air quality modeling. Monitoring is required for air pollutants for which air quality standards have been established and may be required for pollutants for which no air quality standards exist (Rule 17-2.500(5)(f)1, FAC.

The air quality modeling is required to provide assurance that the emissions from the proposed project, together with the emissions of all other air pollutants in the project area, will not cause or contribute to a violation of any ambient air quality standard or guideline. Fluorides are the only pollutant subject to the review.

The de minimis impact level (see Table 3-6) for fluorides associated with the proposed project is 0.25 micrograms per cubic meter, 24-hour average. The air quality review for the proposed project, which evaluated fluoride emission increases associated with this modification, demonstrated that the ambient air impact of fluoride emission increases will be greater than the 24-hour de minimis impact level. The impacts will however, be below the FDER No Threat Level (NTL) guidelines for fluoride of 25

micrograms per cubic meter, 8-hour average; and 6 micrograms per cubic meter, 24-hour average.

Although the modeling demonstrates that the net impact of fluoride emission increases addressed in this application exceed the de minimis impact levels defined by Rule 17-1.500(3)(e)1, FAC (presented in Table 3-6), no air quality monitoring should be required as there are no ambient air quality standards for fluorides, there is no generally accepted monitoring method for fluorides and fluorides are not a health related air pollutant (see Section 7.0).

As part of this review, air quality modeling has been conducted for ammonia to demonstrate that the FDER NTL guidelines are not exceeded and to demonstrate that the ambient odor threshold of 2 ppm (1416 ug/m^3) is not exceeded. Ammonia is not a regulated air pollutant and no ambient air quality standards nor PSD increments have been established.

5.1 AIR QUALITY MODELING

The modeling of fluoride and ammonia emissions was conducted in accordance with EPA modeling guidelines with the Industrial Source Complex - Short Term (ISC-ST) air quality model, Version 90346. The meteorological data used with the model were for Tampa, Florida 1982-1986. The model was run using the Regulatory Default option and with building wake effects on plume downwash taken into consideration. Model receptors were located by a polar coordinate grid centered at the North plant. Receptors

were located at ten degree intervals around the plant at radial distances ranging from 175 meters (the property line nearest the plant) to 500 meters. Because of the effect of plume downwash, maximum fluoride and ammonium impacts were predicted at receptors 175-200 meters from the plant.

The sources used in the modeling were limited to those associated with the existing and proposed North plant. No attempt was made to model fluoride emissions from other quantifiable sources at Farmland Hydro or other Polk County sources as significant unquantifiable sources could not be addressed. The overall impact of fluoride emissions is addressed in Section 7.0. More detailed modeling for ammonia was not attempted as ammonia is not a regulated pollutant. The source data used for modeling are summarized in Table 5-1.

For fluorides, two scenarios were analyzed; a comparison of maximum proposed fluoride emissions with emissions based on the existing GTSP production capability and a comparison of maximum proposed emissions with emissions from existing MAP production capability. The source data (Table 5-1) show a net decrease in fluoride emissions when compared with emissions from the existing GTSP production mode and a slight increase when compared with emissions from the existing MAP production mode.

The scenario modeled for ammonia represents the change in emissions between existing and proposed DAP plant operations; a net decrease in ammonia emissions.

5.2 AIR QUALITY MODELING RESULTS

The results of the ambient air quality impact analysis for fluorides and ammonia are presented below.

5.2.1 FLUORIDES

As previously described, the emission rate increase for fluorides used for air quality modeling purposes is the proposed maximum allowable emission rate associated with the increased North plant production rates. Existing conditions represent maximum emissions permitted for GTSP plant operations (Option 1) and for MAP plant operations (Option 2). For Option 1, there is a net improvement in annual average air quality and increases (highest, second-high) of 5.1 ug/m^3 and 2.4 ug/m^3 for 8-hour and 24-hour periods, respectively. For Option 2, the annual impact increase by 0.2 ug/m^3, the 8-hour impact increased by 6.7 ug/m^3 and the 24-hour impact increased by 3.4 ug/m^3. As a point of comparison, the FDER NTLs for fluorides are 25 ug/m^3 for the 8-hour period and 6 ug/m^3 for the 24-hour period.

5.2.2 AMMONIA

Maximum allowable ammonia emission from the North MAP/DAP plant will decrease from 77.4 pounds per hour to 46.7 pounds per hour as a result of the proposed project. Even with this net decrease, there will be increases in 1-hour, 8-hour and 24-hour impacts under worst-case conditions as a result of plume downwash. The maximum (highest, second-high) increases in ammonia impacts are predicted to be 365 ug/m^3, 1-hour average; 120 ug/m^3, 8-hour average; and 59 ug/m^3, 24-hour average. These

impacts compare with the ammonia odor threshold of 1416 ug/m^3 and NTLs of 180 ug/m^3, 8-hour average, and 43 ug/m^3, 24-hour average. The maximum property line impact of ammonia for the 24-hour period is 30 ug/m^3; or well below the 24-hour NTL of 43 ug/m^3.

TABLE 5-1

AIR QUALITY MODELING PARAMETERS

FARMLAND HYDRO, L.P.
POLK COUNTY, FLORIDA

FLUORIDE MODELING INPUTS

OPTION 1

Based on present allowable GTSP emission rate compared with proposed MAP allowable emission rate.

Source	E (g/sec)	Ht. (meter)	Dia. (meter)	Vel. (m/s)	Temp. (^{o} K)	Location X - Y (meter)
11 Main GTSP (exist.)	-1.03	39.3	2.29	12.2	311.0	0 0
21 Main MAP (prop.)	0.203	39.3	2.29	13.11	315.2	0 0
22 R/G MAP (prop.)	0.269	39.3	1.68	10.63	354.1	-30 0

OPTION 2

Based on present allowable MAP emission rate compared with proposed MAP allowable emission rate.

Source	E (g/sec)	Ht. (meter)	Dia. (meter)	Vel. (m/s)	Temp. (^{o} K)	Location X - Y (meter)
11 Main MAP (exist.)	-0.43	39.3	2.29	12.2	311.0	0 0
21 Main MAP (prop.)	0.203	39.3	2.29	13.11	315.2	0 0
22 R/G MAP (prop.)	0.269	39.3	1.68	10.63	354.1	-30 0

TABLE 5-1 (continued)

AMMONIA MODELING INPUTS

Based on past emission data from DAP compared with proposed DAP allowable emission rate.

Source	E (g/sec)	Ht. (meter)	Dia. (meter)	Vel. (m/s)	Temp. (^{o} K)	Location X - Y (meter)
11 Main DAP (exist.)	-9.75	39.3	2.29	12.2	311.0	0 0
21 Main DAP (prop.)	0.650	39.3	2.29	13.11	315.2	0 0
22 R/G DAP (prop.)	5.240	39.3	1.68	10.63	354.1	-30 0

TABLE 5-2

SUMMARY OF FLUORIDE IMPACT ANALYSIS

FARMLAND HYDRO, L.P.
POLK COUNTY, FLORIDA

OPTION 1

Based on present allowable GTSP emission rate compared with proposed MAP allowable emission rate.

METEOROLOGICAL	FLUORIDE IMPACT (ug/m^3) *		
DATA	ANNUAL	8-HOUR	24-HOUR
1982	0	4.86 (175m, 340°)	1.36 (175m, 310°)
1983	0	4.93 (175m, 200°)	2.44 (175m, 200°)
1984	0	4.54 (175m, 200°)	1.57 (200m, 190°)
1985	0	4.63 (175m, 320°)	1.64 (175m, 240°)
1986	0	5.12 (175m, 320°)	1.71 (175m, 320°)
De minimis Impact 17-2.500 (3)(e)1,FAC	NA	NA	0.25
FDER NTLs (Guidelines)	NA	25.0	6.0

* Highest second-high impact.

TABLE 5-2 (continued)

OPTION 2

Based on present allowable MAP emission rate compared with proposed MAP allowable emission rate.

METEOROLOGICAL DATA	FLUORIDE IMPACT (ug/m^3) *		
	ANNUAL	8-HOUR	24-HOUR
1982	0.22 (175m, 250°)	5.62 (175m, 310°)	2.02 (175m, 230°)
1983	0.18 (175m, 250°)	5.33 (175m, 230°)	3.41 (175m, 200°)
1984	0.16 (175m, 250°)	5.64 (175m, 230°)	2.44 (175m, 160°)
1985	0.15 (175m, 260°)	6.66 (200m, 230°)	2.45 (200m, 230°)
1986	0.15 (175m, 250°)	5.65 (175m, 200°)	2.72 (175m, 230°)
De minimis Impact 17-2.500 (3)(e)1,FAC	NA	NA	0.25
FDER NTLs (Guidelines)	NA	25.0	6.0

* Highest second-high impact.

TABLE 5-3

SUMMARY OF AMMONIA IMPACT ANALYSIS

FARMLAND HYDRO, L.P.
POLK COUNTY, FLORIDA

Based on past emission data from DAP compared with proposed DAP allowable emission rate.

MET. DATA	AMMONIA IMPACT (ug/m^3) * 1-HOUR	8-HOUR	24-HOUR
1982	365.1 (175m, 310°)	99.1 (175m, 340°)	33.7 (175m, 310°)
1983	365.5 (175m, 330°)	100.0 (175m, 240°)	59.1# (175m, 200°)
1984	353.1 (175m, 190°)	89.6 (175m, 190°)	39.7 (175m, 230°)
1985	363.9 (175m, 320°)	120.0 (200m, 230°)	33.9 (175m, 240°)
1986	364.6 (175m, 330°)	100.2 (175m, 320°)	42.0 (175m, 230°)
FDER NTLs (Guidelines)	**	180.0	43.2

* Highest second-high impact.

\# It should be noted that this impact of 59.1 ug/m^3 occurs on plant property. The highest second-high impact off-plant property is 30.6 ug/m^3 at 175m, 180° which is below the FDER NTL of 43.2 ug/m^3.

** Odor threshold for ammonia is about 1400 ug/m^3.

6.0 GOOD ENGINEERING PRACTICE STACK HEIGHT

The criteria for good engineering practice stack height in Rule 17-2.270 states that the height of a stack should not exceed the greater of 65 meters (213 feet) or the height of nearby structures plus the lesser of 1.5 times the height or cross-wind width of the nearby structure. This stack height policy is designed to prevent the achievement of ambient air quality goals solely through the use of excessive stack heights and air dispersion.

The North plant stacks are less than 213 feet in height above-grade. Both the existing and the proposed stacks dedicated to the North plant will be 129 feet in height. This will satisfy the good engineering practice (GEP) stack height criteria.

It should be noted that building effects were considered in the modeling using the worst-case building dimensions of the plant building.

7.0 IMPACTS ON SOILS, VEGETATION AND VISIBILITY

The impact of fluoride emissions on soils, vegetation and visibility are addressed below.

7.1 IMPACT ON SOILS AND VEGETATION

The U.S. Environmental Protection Agency (EPA) has promulgated ambient air quality standards for particulate matter, sulfur dioxide, nitrogen oxides, carbon monoxide, ozone and lead. These standards include primary air quality standards developed for the protection of human health and secondary air quality standards developed for the protection of welfare related issues. The fact that EPA has not developed ambient air quality standards for fluorides is due to EPA's position that fluoride levels in the ambient air are "not of sufficiently national character to require a National Ambient Air Quality Standard.".

On August 6, 1975, EPA promulgated standards of performance for five categories of new sources in the phosphate fertilizer industry. The performance standards included emission limiting standards for fluorides. As a result of these standards, fluorides became a "designated pollutant"; that is, a pollutant for which there is no National Ambient Air Quality Standard but one for which New Source Performance Standards have been established.

As required by 40 CFR 60, Subpart B, EPA next published a guideline document to assist states in developing emission standards for fluorides. The document included, among other things, a discussion of the effect of the fluorides on human health and welfare. In the preamble to Subpart B of 40 CFR 60

and hence in the guideline document, a distinction is drawn between "designated pollutants" which may cause or contribute to the endangerment of public health (health-related pollutants) and those for which adverse effects on public health have not been demonstrated (welfare-related pollutants).

In determining whether a "designated pollutant" is health-related or welfare-related, EPA considers such factors as:

- known and suspected effects on public health and welfare,
- potential ambient concentrations of the pollutant,
- the generation of any secondary pollutants for which the "designated pollutant" may be a precursor,
- any synergistic effects with other pollutants, and
- potential for accumulation in soil, water and/or food chains.

After considering all available information, EPA determined that fluoride emissions from phosphate fertilizer plants had no demonstrated effects on public health. As a result, fluoride emissions from phosphate fertilizer plants were classified by EPA as a welfare-related pollutant.

The primary welfare-related effects of fluorides are to vegetation and secondarily, to livestock that forage on this vegetation. With the fluoride emission control presently installed and operating on phosphate fertilizer plants in Florida, fluoride effects on vegetation are very seldom noticed. The major effort regarding welfare-related fluoride effects in

Florida is directed toward limiting the concentration of fluoride in vegetation used for livestock forage.

Fluorides can appear in forage material or on the leaves of this material; the latter being primarily particles deposited on the leaf surface.

Fluorides in vegetation can result from:

- absorption from the atmosphere,
- absorption from the soil,
- absorption from rain water either through the leaf or through the root system,
- absorption from surface water, and/or
- absorption from particles deposited on the leaf.

Fluoride on vegetation can result from:

- deposition of particles from the atmosphere, and/or
- splash of surface particles caused by rainfall.

For all of these factors there are several rate determining factors; including the rate and frequency of rainfall, relative humidity, soil moisture, light, nutrient supply, age and development stage of the vegetation, ambient temperature, chemical form of the fluoride, and the species of vegetation.

In general, fluorides can enter a plant in solution through the root or leaf, or it can be sorbed from particles through the leaf. In the plant, fluorides remain in a soluble form, which is the most nutritionally available form. Particulate fluorides deposited on the surface of the leaf can, in part, be washed from the leaf. The fraction remaining after washing, however, is not

necessarily internal to the plant. Thus, there are three forms that fluorides can take:

- free inorganic fluorides within a plant,
- particles of fluorides loosely adhering to on the plant surface, and
- fluorides bound to the plant surface.

Fluoride in the first form is readily available nutritionally while fluorides in the other two forms are generally less reactive than free inorganic fluorides. Based on a study at the University of Tennessee during the period 1948 to 1975, the primary source of naturally occurring fluorides in plants was found to be the soil on which the plant was grown. This study is applicable to the central Florida area since the area investigated in Tennessee was one with a high phosphate content in the soil. As in Florida, the fluorides in the soil were associated with the phosphate content.

Fluorides in the atmosphere can be sorbed through the leaf into plants. The relationship between atmospheric fluoride concentration and plant fluoride concentration is debatable, however. Studies at the University of Tennessee have shown that the concentration of plant fluorides was higher in the direction of prevailing winds near an aluminum smelter than in other directions. Another study showed that with plants grown under the same conditions, those supplied with water-scrubbed air had a lower fluoride content than those supplied with air containing airborne fluorides. McCune and Pack suggest that it has not

been possible to establish a relationship between airborne fluorides and plant fluorides and Suttie states, "even if ambient fluoride concentrations were known, variations in the chemical form of the fluoride concentrations were known variations in the chemical form of the fluoride emission, growth rate of plants, rainfall, etc., would make it difficult to extrapolate these values to forage concentrations....". The contribution of fluorides in the soil to plant fluoride levels is partly responsible for this. For example, the fluoride content of grass grown on the same pasture and not influenced by airborne fluorides varied significantly from season to season and from year to year due to the factors discussed herein plus the variability introduced by sampling methods.

Although it is recognized that airborne fluorides are sorbed by plants, no established relationship exists between the concentration in air, exposure time, and the concentration in plants. This is primarily because of the many factors that affect the fluoride uptake of a plant. In addition to the atmosphere concentration of fluoride, the duration and frequency of exposure, the age or stage development of the plant, the species and variety of a plant, most climatic and edaphic factors, exposure to light, and water supply all affect the resulting fluoride content of a plant.

The concentration of fluorides in the ambient air in western Polk County and eastern Hillsborough County and the effects of these fluorides have been monitored since the mid-1960's by several agencies. From 1964 through 1983, the Florida Department

of Environmental Regulation (and the agencies that preceded FDER) monitored airborne fluorides and/or the effects of these fluorides at as many as 65 monitoring sites in Polk and eastern Hillsborough Counties. From 1982 to 1986 the Hillsborough County Environmental Protection Commission (HCEPC) monitored airborne fluorides and the effects of the fluorides at five sites in eastern Hillsborough County adjacent to the phosphate processing area in Polk County.

The sampling programs of these agencies have included measurements of airborne fluorides by bubbler samplers, continuous monitors and limed paper, and measurements of fluoride levels in pasture grass and citrus leaves. The bubbler samplers and the continuous fluoride monitors provided actual measurements of the concentration of fluorides in the ambient air while the limed paper provided monthly average fluoride exposure information. The concentration of fluorides in pasture grass has been of interest because of the potential effects of fluorides on cattle foraging on the grass. The fluoride concentration citrus leaves was examined to evaluate potential effects of airborne fluorides on citrus.

The sampling that has been most widespread geographically and that has continued over the longest period of time is the sampling for fluorides in grass. The FDER (and predecessor agencies) monitored fluoride levels in grass from 1964 through 1983. The results of this monitoring are available through the Southwest District office of FDER in Tampa or through the FDER archives in Tallahassee. An FDER report was prepared in 1976

summarizing agency data collected during the period 1964 through 1974.

The fluoride levels in grass measured by the HCEPC were reported, in part, in a 1983 agency report. The data collected by HCEPC from 1984 to 1986 have not been reported.

In the years that Farmland Hydro has been operating, fluoride levels in pasture grass have generally been below the FDER guideline of 45 parts per million (annual average concentration in unwashed pasture grass). In only three of the years (1977, 1978 and 1981) did the fluoride levels in pasture grass from some sites in Southwest Polk County exceed the 45 part per million guideline. Since 1981, the fluoride levels in pasture grass dropped to the 40 part per million range for three years and during the period 1985-1987, the fluoride levels in pasture grass have been in the range of 25 parts per million, annual average.

The Farmland Hydro property and the surrounding areas are comprised of mining lands (phosphate), flatwoods, marshes, and sloughs. The soils of the area are primarily sandy and are typically low in both clay and silt content. These characteristics and the semi-tropic climatic factors of high temperature and rainfall are the natural factors which determine the terrestrial communities of the region.

The land in the vicinity of Farmland Hydro supports various plant communities. The vegetation can be divided into upland and wetland categories. In each category, the following major formations have been identified:

Upland	Wetland
Pine flatwoods	Cypress swamp
Oak Scrub	Shrub swamp
Sandhill	Marsh

Much of the natural vegetation on the site and the surrounding areas has been altered due to mining and industrial use; primarily the phosphate fertilizer industry. As a result of mining and industrial activity, there is very little undisturbed land in existence in the vicinity of the Farmland Hydro facility.

In most areas, the soils encountered are coarse and contain increasing amounts of silt and clays until they contact the phosphate rock deposits. Soils in areas of low relief are influenced by flatwood vegetation, high water tables and organic or mineral pan of varying thickness. Mucks are found in the lower physiographic areas where large amounts of plant debris have accumulated.

The soils and vegetation of the area will be exposed to Farmland's air pollutant levels when they lie downwind of the Farmland Hydro facility. The areas other than those downwind of the facility will be exposed to existing concentrations of air pollutants from other major emitting facilities in the immediate area.

The air quality modeling that has been conducted as a requirement of this PSD application demonstrates that the levels of fluoride expected at the Farmland Hydro site, as a result of the this proposed project will be below the FDER NTLs. As a

result, it is reasonable to conclude that there will be no significant change in the ambient effects of fluorides on the soils and vegetation of the area. The impacts of ammonia emissions are expected to be below the FDER NTL and below the odor threshold of 1,416 ug/m^3. Therefore, no adverse effects are anticipated as a result of ammonia emissions from the North plant.

7.2 GROWTH RELATED IMPACTS

The proposed modification will require no increase in personnel to operate the North plant. The increase in fertilizer production may however, cause a slight increase in truck traffic but will have a negligible impact on traffic in the area as compared with traffic levels that presently exist. Therefore, no additional growth impacts are expected as a result of the proposed project.

7.3 VISIBILITY IMPACTS

The proposed project will result in an increase in fluoride emissions which are not expected to have adverse impacts on visibility.

8.0 CONCLUSION

It can be concluded from the information in this report that the proposed increase in the MAP and DAP production rate of the North plant as described in this report will not cause or contribute to a violation of any air quality standard, PSD increment, or any other provision of Chapter 17-2, FAC.

CONTEMPORANEOUS PARTICULATE MATTER EMISSION CALCULATIONS

The following sources ceased operations when the conversion to the wet rock process was made in June of 1991.

1. Rock Unloading System, AO53-151296

1989, PM/PM_{10} = (12.7 + 7.6) lb/hr / 2 x 5,824 hr/yr x Ton/2,000 lb
= 29.6 Ton/yr

1990, PM/PM_{10} = (8.84 + 15.8)lb/hr / 2 x 5,824 hr/yr x ton/2,000 lb
= 35.9 Ton/yr

Avg. PM/PM_{10} lb/hr = (12.7 + 7.6 + 8.84 + 15.8)lb/hr / 4
= 11.2 lb/hr

Avg. PM/PM_{10} TPY = (29.6 + 35.9)ton/yr / 2
= 32.8 ton/yr

2. Phosphoric Acid Plant (PAD) 1 Ball Mill, AO53-157062

1989, PM/PM_{10} = 17,000 cfm x 0.02 gr/cf x 60 min/hr x lb/7,000 gr
= 2.9 lb/hr
x 5,608 hr/yr x ton/2,000 lb
= 8.1 ton/yr

1990, PM/PM_{10} = 17,000 cfm x 0.02 gr/cf x 60 min/hr x lb/7,000 gr
= 2.9 lb/hr
x 5,580 hr/yr x ton/2,000 lb
= 8.1 ton/yr

Avg. PM/PM_{10} lb/hr = (2.9 + 2.9)lb/hr / 2
= 2.9 lb/hr

Avg. PM/PM_{10} TPY = (8.1 + 8.1)ton/yr / 2
= 8.1 ton/yr

3. Phosphoric Acid Plant (PAD) 2 Ball Mill, AO53-157064

1989, PM/PM_{10} = 17,000 cfm x 0.02 gr/cf x 60 min/hr x lb/7,000 gr
= 2.9 lb/hr
x 5,421 hr/yr x ton/2,000 lb
= 7.9 ton/yr

1990, PM/PM_{10} = 17,000 cfm x 0.02 gr/cf x 60 min/hr x lb/7,000 gr
= 2.9 lb/hr
x 6,233 hr/yr x ton/2,000 lb
= 9.0 ton/yr

Avg. PM/PM_{10} lb/hr = (2.9 + 2.9)lb/hr / 2
= 2.9 lb/hr

Avg. PM/PM_{10} TPY = (7.9 + 9.0)ton/yr / 2
= 8.5 ton/yr

TOTAL PARTICULATE MATTER DECREASES:

Total PM/PM_{10} = 32.8 tpy + 8.1 tpy + 8.5 tpy
= 49.4 tpy

ANNUAL OPERATION REPORT FORM FOR AIR EMISSIONS SOURCES

For each permitted emission point, please submit a separate report for calendar year 19 prior to March 1st of the following year.

I GENERAL INFORMATION

1. Source Name: Farmland Industries, Inc.
2. Permit Number: A053-151296
3. Source Address: P. O. Box 960
   Bartow, Florida 33830
4. Description of Source: Phosphate Rock Unloading and Storage Scrubber

II ACTUAL OPERATING HOURS: 16.00 hrs/day 7 days/wk 52 wks/yr

III RAW MATERIAL INPUT PROCESS WEIGET: (List separately all materials put into proces and specify applicable units if other than tons/yr)

Raw Material	Input Process Weight	
Phosphate Rock	2,338,404	tons
		tons
		tons
		tons
		tons

IV PRODUCT OUTPUT (Specify applicable units)

2,338,262 Tons Phosphate Rock

DER Form 17-1.202(6)
Effective November 30, 1982

Northwest District
160 Governmental Center
Pensacola, Florida 32501-5794
904-436-8300

Northeast District
3426 Bills Rd
Jacksonville, Florida 32207
904-798-4200

Central District
3319 Maguire Blvd. Suite 232
Orlando, Florida 32803-3767
305-894-7555

Southwest District
4520 Oak Fair Blvd
Tampa, Florida 33610-7347
813-623-5561

South District
2269 Bay St
Fort Myers, Florida 33901-2896
813 332-6975

Southeast District
1900 S. Congress Ave.
West Palm Beach, Florida
305 964 9665

NET EMISSION CHANGES

ACTUAL EMISSIONS:

Current actual emissions of the MAP/DAP/GTSP North plant based on 1990 and 1991 stack test data and actual operating hours.

Particulate Matter:

1990, PM/PM_{10} = (12.23 + 13.25) lb/hr / 2 x 7,671 hr/yr x ton/2,000 lb
= 48.9 ton/yr

1991, PM/PM_{10} = 5.75 lb/hr x 7,384 hr/yr x ton/2,000 lb
= 21.2 ton/yr

Avg. PM/PM_{10} lb/hr = (12.23 + 13.25 + 5.75) lb/hr / 3
= 10.4 lb/hr

Avg. PM/PM_{10} TPY = (48.9 + 21.2)ton/yr / 2
= 35.1 ton/yr

Fluorides:

1990, F = (3.42 + 3.70) lb/hr / 2 x 7,671 hr/yr x ton/2,000 lb
= 13.7 ton/yr

1991, F = 1.37 lb/hr x 7,384 hr/yr x ton/2,000 lb
= 5.1 ton/yr

Avg. F lb/hr = (3.42 + 3.70 + 1.37) lb/hr / 3
= 2.8 lb/hr

Avg. F TPY = (13.7 + 5.1)ton/yr / 2
= 9.4 ton/yr

Ammonia:

The only available data on ammonia emissions is from past performance stack sampling conducted on the South DAP plant which show emissions up to 1.362 lb/ton for the Dryer Scrubber and 0.848 lb/ton for the Reactor/Granulator.

1990, NH_3 = (1.362 + 0.848) lb/ton x 35 ton/hr
= 77.4 lb/hr
x 7,671 hr/yr x ton/2,000 lb
= 296.9 ton/yr

1991, NH_3 = 77.4 lb/hr x 7,384 hr/yr x ton/2,000 lb
= 285.8 ton/yr

Avg. NH_3 lb/hr = (77.4 + 77.4) lb/hr / 2
= 77.4 lb/hr

Avg. NH_3 TPY = (296.9 + 285.8)ton/yr / 2
= 291.4 ton/yr

PROPOSED EMISSIONS:

Proposed emissions are based on MAP/DAP process calculations.

Particulate Matter:

DAP Main Stack

PM/PM_{10} = 10.62 lb/hr x 8,760 hr/yr x ton/2,000 lb
= 46.5 ton/yr

DAP Reactor/Granulator (R/G) Stack

PM/PM_{10} = 5.52 lb/hr x 8,760 hr/yr x ton/2,000 lb
= 24.2 ton/yr

Total DAP

PM/PM_{10} = 16.14 lb/hr
x 8,760 hr/yr
= 70.7 ton/yr

MAP Main Stack

PM/PM_{10} = 15.88 lb/hr x 8,760 hr/yr x ton/2,000 lb
= 69.6 ton/yr

MAP R/G Stack

PM/PM_{10} = 6.62 lb/hr x 8,760 hr/yr x ton/2,000 lb
= 29.0 ton/yr

Total MAP

PM/PM_{10} = 22.5 lb/hr
x 8,760 hr/yr
= 98.6 ton/yr

Max. PM/PM_{10} = 22.5 lb/hr
= 98.6 ton/yr

Fluorides:

DAP Main Stack

F = 1.60 lb/hr x 8,760 hr/yr x ton/2,000 lb
= 7.0 ton/yr

DAP R/G Stack

F = 1.16 lb/hr x 8,760 hr/yr x ton/2,000 lb
= 5.1 ton/yr

Total DAP

F = 2.76 lb/hr
x 8,760 hr/yr
= 12.1 ton/yr

MAP Main Stack

F = 1.87 lb/hr x 8,760 hr/yr x ton/2,000 lb
= 8.2 ton/yr

MAP R/G Stack

F = 1.87 lb/hr x 8,760 hr/yr x ton/2,000 lb
= 8.2 ton/yr

Total MAP

F = 3.74 lb/hr
x 8,760 hr/yr
= 16.4 ton/yr

Max. F = 3.74 lb/hr
= 16.4 ton/yr

Ammonia:

DAP Main Stack

NH_3 = 5.17 lb/hr x 8,760 hr/yr x ton/2,000 lb
= 22.6 ton/yr

DAP R/G Stack

NH_3 = 41.56 lb/hr x 8,760 hr/yr x ton/2,000 lb
= 180.0 ton/yr

Total DAP

NH_3 = 46.73 lb/hr
x 8,760 hr/yr
= 204.7 ton/yr

MAP Main Stack

NH_3 = 7.01 lb/hr x 8,760 hr/yr x ton/2,000 lb
= 30.7 ton/yr

MAP R/G Stack

NH_3 = 30.93 lb/hr x 8,760 hr/yr x ton/2,000 lb
= 135.5 ton/yr

Total MAP

NH_3 = 37.94 lb/hr
x 8,760 hr/yr
= 166.2 ton/yr

Max. NH_3 = 46.73 lb/hr
= 204.7 ton/yr

NET ANNUAL EMISSIONS INCREASE:

Particulate Matter:

Net PM/PM_{10} increase = Proposed - (Actual + Contemporaneous Decreases)
= 98.6 tpy - (35.1 tpy + 49.4 tpy)
= 14.1 tpy

Fluorides:

Net F increase = Proposed - Actual
= 16.4 tpy - 9.4 tpy
= 7.0 tpy

Ammonia:

Net NH3 increase = Proposed - Actual
= 204.7 tpy - 291.4 tpy
= - 86.7 tpy

EMISSIONS FROM NATURAL GAS COMBUSTION

Natural gas usage rate will remain the same at 50 MM BTU per hour heat input. There will be no change in the dryer heat input requirements because the product manufactured by the proposed granulator will be lower in moisture content than that manufactured by the existing blunger system. Since there will be no change in the natural gas usage, no emission changes will occur as a result of the proposed project. The emissions expected from the combustion of natural gas in the dryer are presented below. It should be noted that diesel fuel may be used as a back-up fuel for less than 400 total hours in a given year.

The emission calculations below are based on AP-42 factors.

PM/PM_{10} = 5.0 lb/mcf x 0.05 mcf/hr
= 0.25 lb/hr
x 8,760 hr/yr x ton/2,000 lb
= 1.1 tpy

SO_2 = 0.6 lb/mcf x 0.05 mcf/hr
= 0.03 lb/hr
x 8,760 hr/yr x ton/2,000 lb
= 0.13 tpy

NO_x = 140.0 lb/mcf x 0.05 mcf/hr
= 7.0 lb/hr
x 8,760 hr/yr x ton/2,000 lb
= 30.7 tpy

CO = 35.0 lb/mcf x 0.05 mcf/hr
= 1.75 lb/hr
x 8,760 hr/yr x ton/2,000 lb
= 7.7 tpy

VOC* = 2.8 lb/mcf x 0.05 mcf/hr
= 0.14 lb/hr
x 8,760 hr/yr x ton/2,000 lb
= 0.61 tpy

* Non methane hydrocarbon.

State of Florida
DEPARTMENT OF ENVIRONMENTAL REGULATION

For Routing To Other Than The Addressee

To _____ Location _____

To _____ Location _____

To _____ Location _____

From _____ Date _____

Interoffice Memorandum

RECEIVED
FEB 7 1992
Division of Air
Resources Management

TO: Scott Sheplak
Bill Schroeder (EPCHC)
Andy Kutyna
Mirza Baig

FROM: Bill Thomas

DATE: February 5, 1992

SUBJ: Ammonia MOU

Attached is the Phosphate Industry response to the Draft MOU forwarded to them recently. Please peruse and consider for further comment.

I will schedule a meeting with the Florida Phosphate Council and advise you of the time and place. I plan to schedule a meeting of our committee prior to meeting with the Council.

WCT/vsa

Attachment

florida phosphate council

phosphate feeds you

Reply to:
☑ 830 First Florida Bank Building
215 South Monroe Street
Tallahassee, Florida 32301
Telephone 904/224-8238
FAX 904/224-8061

☐ Suite 24, Executive Plaza
4406 S. Florida Avenue • P.O. Box 5530
Lakeland, Florida 33807-5530
Telephone 813/646-8583
FAX 813/646-9114

January 20, 1992

Mr. Bill Thomas
State of Florida Department
of Environmental Regulation
Southwest District
4520 Oak Fair Boulevard
Tampa, FL 33610-7347

Re: Ammonia MOU

Dear Bill:

Thank you very much for forwarding to us the Department's revised draft version of the Memorandum of Understanding (MOU) on ammonia management. We forwarded the draft on to the appropriate Council technical committee for review and a special meeting for this purpose was held on January 14, 1992.

We have attached a further revision of the draft MOU reflecting suggested changes by the member companies. To assist you in your evaluation, we have prepared the attached revised draft in the ~~strike-through~~ and underline format to show where changes have been suggested.

The changes to Part I of the MOU are largely self explanatory and generally reflect a view by member company representatives that certain of the proposed requirements were unnecessary or impractical.

With regard to Part II.B. you will note that we have proposed deletion of certain of the presumptive minimum operating standards that were contained in the draft provided to us. Essentially, the member company representatives believe that such operating procedures will need to be established on a case-by-case basis for each permittee.

Finally, we have deleted your proposed Part III. This should not be interpreted, however, as a rejection of the concept of modelling. To the contrary, the member

companies have indicated a willingness to implement modelling under appropriate terms and conditions.

After you have had a chance to review the attached proposed revision, I suggest that it would be appropriate for us to get together with technical committee representatives to continue our discussions on this matter. We are ready to proceed at your convenience.

Sincerely,

Michael S. Batts

Michael S. Batts
Assistant Vice President
Environmental Affairs

MSB/cb
Attachment
cc: Air Quality Committee
FPC Staff

1/20/92
Draft

MEMORANDUM OF UNDERSTANDING

~~DER~~

BEST MANAGEMENT PRACTICES FOR ANHYDROUS AMMONIA STORAGE AND HANDLING AND BEST OPERATIONAL START UP/SHUT DOWN AND OPERATING PRACTICES FOR DIAMMONIUM PHOSPHATE AND MONOAMMONIUM PHOSPHATE GRANULATION FACILITIES

I. ANHYDROUS AMMONIA STORAGE AND HANDLING

A. Recommendations detailed in the American National Standards Institute, Inc. (ANSI) Standard K61.1-Safety Requirements for the Storage and Handling of Anhydrous Ammonia-shall be followed where applicable.

B. Pressurized ammonia storage and handling equipment shall be operated at a pressure no greater than the engineering design pressure. The pressure level of the ammonia storage vessel will be continuously recorded in the plant control room or the operator control station. Alarms will be used to detect high pressure in ammonia storage vessels. Audio and visual alarms will be set at least ~~10%~~ 5% below the relief (pop-off) setting and will be located in the plant control room or the operator control station.

C. Noncondensable gases shall not be allowed to accumulate in the head space of pressurized ammonia storage tanks.

D. All valve stem packing, pump packing, pipe flanges and heat exchanger flanges shall be inspected ~~daily~~ regularly for evidence of leakage. Any leakage shall be corrected promptly. ~~A record of each inspection shall be made.~~

E. All temporary piping connections used to transfer liquid or gaseous ammonia to or from a transport container to a permanent container shall be emptied of liquid ammonia before disconnection unless supplied with an end shut-off valve. The emptying process shall be done by either displacing the liquid with gaseous ammonia or by use of a flare system or by discharging the liquid ammonia into a sufficiently large water container with a flow of water continually moving through the container provided that ANSI K-61.1, Standard 4.4.1., shall be followed if the latter procedure is used.

~~F. Check all relief valves after plant upsets, downtime etc. for their proper operating condition.~~

~~G.~~F. All mechanical pressure relief valves greater than 1 inch shall be serviced, ~~repaired,~~ tested, and certified ~~and sealed~~ every five years. All needed repairs and replacements shall be promptly performed.

--~~H.~~G. Storage containers shall be filled to a maximum liquid level not to exceed ~~80%~~ 90% of the container's total volume.

--~~I.~~H. All ammonia storage vessels will have non-destructive testing every six years.

--~~J.~~I. All connected ammonia rail cars will display the appropriate flags and rail car wheels will be chocked and derailers installed in accordance ANSI K61.1, Standard 8.4.

II. **DAP/MAP OPERATIONAL PRACTICES**

A. Startup

1. Acid recirculation shall be started and verified before the scrubber fan(s) are started and before any process flows are started. All scrubber liquid flows shall be established (both acid and tail gas) prior to starting the scrubber fans. Process flows shall be started only after establishing equipment ventilation to the scrubber.

2. If the pre-neutralizer has been emptied, the operator shall ~~inspect~~ insure that the ammonia sparging system ~~for its proper operation~~ is properly operating and shall fill the pre-neutralizer with phosphoric acid or slurry to a minimum operating level before ammonia flow is started through the vessel.

3. After the granular recirculation system has been started, ammonia and slurry feeds shall be brought into the granulator as simultaneously as practicable.

B. Operating Procedures

1. The operator shall monitor the pressure drop across the scrubber systems and promptly correct the cause of any upset condition. In the event of a failure of the acid recirculation, the operator shall immediately, in a controlled manner, shut down process in-feeds and correct the problem before resuming production.

2. Acid flow to the ammonia scrubbers shall be continuously recorded ~~and equipped with a low flow alarm~~.

The pressure drop across the acid scrubbers shall be continuously recorded ~~and equipped with an alarm to indicate delta P's outside of 90 110% of the delta P from baseline operating conditions~~.

The minimum acid flow and delta P shall be in accordance with the air operating permit. ~~If not specified in the operating permit, the minimum flow and delta P shall be 90% of the average numbers recorded in the most recent successful compliance test for fluorides (F). The plant~~

~~shall be shut down and corrections made to avoid below 90% readings.~~

~~The final ammonia scrubber circulating acid mole ratio shall be determined and recorded at a minimum, every 2 hours, and shall always be maintained not to exceed 1.0 N/P.~~

3. Those plants with a tail gas scrubber and dedicated pond shall continuously monitor and record pH in all circulation water. ~~The pH shall be maintained below 7.0.~~

~~4. All equipment that is evacuated to an acid scrubber shall be inspected daily for evidence of inadequate evacuation. Any malfunction shall be corrected promptly. A record of each inspection shall be made.~~

C. Shutdown Procedures

1. The operator shall shut down all ammonia flows to the pre-neutralizer ~~and granulator~~ before process acid flow shut-off. Ammonia flow to the granulator shall be shut off as soon as practicable to allow drying of the bed following shut off of slurry flow. During plant shutdowns where the pre-neutralizer cannot be emptied, ammonia shall be fed in small quantities as required to maintain slurry chemical controls only when effective scrubbing is in operation.

2. The operator shall maintain recirculation acid flows in all process scrubber systems during the shutting down of process acid and ammonia in-feed.

III. **BASELINE OPERATING CONDITIONS** [DELETED ENTIRELY]

****

The parties jointly agree that the ammonia storage and handling procedures for phosphate fertilizer manufacturing facilities set forth in Part I above constitute best management practices designed to minimize excess emissions of ammonia and further agree that the operational procedures set forth in Part II above constitute "best operational practices" for the startup, operation and shutdown of granular diammonium and monoammonium phosphate (DAP/MAP) fertilizer plants for the purposes of Rule 17-2.250 Florida Administrative Code (FAC).

Violations of Rule 17-2.620 FAC may indicate pollution control equipment deficiencies.

The operational practices outlined in Part II above are applicable only to the production of granular diammonium and monoammonium phosphates in a continuous TVA type process. The best operational practices for other types of DAP/MAP facilities shall be established by the Department in coordination with the owner/operator on a case-by-case basis.

The owner/operator shall maintain a log of all ammonia releases including those reportable under the SARA requirements and shall make the log available for inspection by the Department upon Request.

All records required by this MOU shall be maintained for at least 2 years after the date of recordation and be made available for inspection by the Department upon request.

These best management practices and best operational practices shall be made available in the control room at all times.

Amendments to this MOU ~~shall be~~ approved by the Department and agreed to by the Permittee in writing ~~and~~ shall become part of the MOU.

Steve Smallwood, P.E. (Date) Director, Division of Air Resources Management Department of Environmental Regulation	(Permittee) (Date) (FACILITY NAME)
Dr. Richard Garrity (Date) Director of District Management, Southwest District Department of Environmental Regulation	Ernie Frey (Date) Director of District Management Northeast District Department of Environmental Regulation

will be equal to the vapor pressure of ammonia vapor over the scrubbing liquor stream.

For the high content ammonia vapor stream (reactor plus granulator), new technology has been developed which uses two stage scrubbing with low strength phosphoric acid. Each stage of scrubbing uses a different NH_3 to H_3PO_4 molar ratio scrubbing liquor. This type of scrubbing has proven to reduce ammonia emissions significantly from the plant as a whole. The ammonia vapor going to the stack in this two stage scrubber will be equal to the ammonia vapor pressure over the cooler, low strength phosphoric acid.

4.2.3 FLUORIDES

Ammoniated fertilizer plants are somewhat unique in that the use of phosphoric acid as a scrubbing liquor to absorb ammonia vapor and fertilizer particulate creates a fluoride vapor pressure. If scrubbing with phosphoric acid was not performed, the fluoride vapor emissions would be lower than if phosphoric acid scrubbing is used.

The amount of fluoride vapor evolved is a function of the temperature of the phosphoric acid, the concentration of the phosphoric acid, and the ammonia to phosphoric acid mole ratio in the phosphoric acid scrubbing liquor. As the temperature and acid concentration increase, the fluoride vapor evolution increases. As the NH_3/H_3PO_4 mole ratio increases, the amount of fluoride vapor evolved decreases. If the mole ratio exceeds 1.0,

Check Sheet

→ P4/21

Company Name: Farmland Hydro, L.P.
Permit Number: AC53-210886
PSD Number:
County: Polk
Permit Engineer:
Others involved:

Application:
- [x] Initial Application
- [x] Incompleteness Letters
- [x] Responses
- [ ] Final Application (if applicable)
- [ ] Waiver of Department Action
- [ ] Department Response
- [ ] Other

Intent:
- [x] Intent to Issue
- [x] Notice to Public
- [x] Technical Evaluation
- [x] BACT Determination
- [x] Unsigned Permit
- [ ] Correspondence with:
  - [ ] EPA
  - [ ] Park Services
  - [ ] County
  - [ ] Other
- [x] Proof of Publication
- [ ] Petitions - (Related to extensions, hearings, etc.)
- [ ] Other

Final Determination:
- [x] Final Determination
- [x] Signed Permit
- [x] BACT Determination
- [ ] Other

Post Permit Correspondence:
- [x] Extensions
- [x] Amendments/Modifications
- [ ] Response from EPA
- [ ] Response from County
- [ ] Response from Park Services
- [ ] Other

Best Available Copy

1050053-003-AC

Z 127 633 226

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

Sent to: Charles Jenkins	
Street and No.: Fairland Hydro	
P.O., State and ZIP Code: Bartow, FL	
Postage	$
Certified Fee	
Special Delivery Fee	
Restricted Delivery Fee	
Return Receipt Showing to Whom & Date Delivered	
Return Receipt Showing to Whom, Date, and Addressee's Address	
TOTAL Postage & Fees	$
Postmark or Date 12-21-95	

AC53-210886
PSD-FL-186

PS Form 3800, March 1993

SEN
- Comple... 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 below the article number.
- The Return Receipt will show to whom the article was delivered and the date delivered.

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:
Charles Jenkins, E.C.
Fairland Hydro, LP
P.O. Box 906
Bartow, FL 33830

4a. Article Number
Z 127 633 226

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

7. Date of Delivery
12/27/95

5. Signature (Addressee)
Linda Thomp

6. Signature (Agent)

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

PS Fo... ... 19...

DOMESTIC RETURN RECEIPT

Is your RETURN ADDRESS completed on the reverse side?

Thank you for using Return Receipt Service.

Farmland (me)

AFFIDAVIT OF PUBLICATION

THE LEDGER
Lakeland, Polk County, Florida

Case No .....

STATE OF FLORIDA)
COUNTY OF POLK)

Before the undersigned authority personally appeared Nelson Kirkland, who on oath says that he is Classified Advertising Manager of The Ledger, a daily newspaper published at Lakeland in Polk County, Florida; that the attached copy of advertisement, being a

Notice of Intent

in the matter of

AC 53-210886

in the

Court, was published in said newspaper in the issues of

October 20;

1995

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

Signed .....
Nelson Kirkland
Classified Advertising Manager

by Nelson Kirkland who is personally known to me

Sworn to and subscribed before me this 20th

day of October A.D. 19 95

(Seal) Barbara L. Dunlap
Notary Public

My Commission Expires 10-25-99

BARBARA L. DUNLAP
MY COMMISSION # CC 505659
EXPIRES: October 25, 1999
Bonded Thru Notary Public Underwriters

Order # 552383

F 405

STATE OF FLORIDA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
NOTICE OF INTENT TO ISSUE PERMIT AMENDMENT
AC53-210886/PSD-FL-186(A)

The Department of Environmental Protection (Department) gives notice of its intent to issue a permit amendment to Farmland Hydro, L.P., Post Office Box 906, Bartow, Florida, 33830. The amendment is to remove the 0.5% limit on sulfur content for the dryer backup fuel from air construction permit number AC53-210886/PSD-FL-186 Specific Condition No. 15 for the North MAP/DAP Plant located at the fertilizer complex on S.R. 64 West near Polk County. There will be no chonges in SO_2 emissions as a result of this amendment since 0.5% sulfur No. 2 fuel oil will continue to be used less than 400 hours per year. The rest of the time, natural gas, an inherently less poliuting fuel, will be utilized in the dryer. The change will not cause or contribute to a violation of the applicable air quality standards.

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

The Petition shall contain the following information; (a) The name, address, and the 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 warrants 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/request 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 upan motion filed pursuant to Rule 28-5.207, Florida Administrative Code.

The application/request is available for public inspection during normal business hours, 8:00 a.m. to 5:00 p.m., Monday through Friday, except legal holidays, at:
Department of Environmental Protection
Bureau of Air Regulation
111 S. Magnalia Drive, Suite 4
Tallahassee, Florida 32301

Department of Environmental Protection
Southwest District
8407 Laurel Fair Circle
Tampa, Florida 33619

Any person may send written comments on the proposed action to Administrator, New Source Review Section 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.
F405 - 10-20; 1995

Z 127 632 537

Receipt for Certified Mail

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

Sent to: Charles Jenkins	
Street and No.: Fairland Hydro	
P.O., State and ZIP Code: Bartow, F	
Postage	$
Certified Fee	
Special Delivery Fee	
Restricted Delivery Fee	
Return Receipt Showing to Whom & Date Delivered	
Return Receipt Showing to Whom, Date, and Addressee's Address	
TOTAL Postage & Fees	$
Postmark or Date: N. MAP/DAP 10-11-95 AC53-210886/PSD-FI-186(A)	

PS Form 3800, March 1993

Is your RETURN ADDRESS completed on the reverse side?

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

I also wish to receive th following services (for an extra fee):

1. ☐ Addressee's Address
2. ☐ Restricted Delivery

Consult postmaster for fee.

3. Article Addressed to:
Charles Jenkins, EC
Fairland Hydro, LP
PO Box 906
Bartow, FL 33830

4a. Article Number
Z 127 632 537

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

7. Date of Delivery
10/16/95

5. Signature (Addressee)
Linda Thompson

6. Signature (Agent)

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

PS Form **3811**, December 1991 ☆U.S. GPO: 1993—352-714 **DOMESTIC RETURN RECEIPT**

Thank you for using Return Receipt Service.

Memorandum

Florida Department of
Environmental Protection

TO: Howard L. Rhodes

FROM: Clair H. Fancy

DATE: February 23, 1994

SUBJ: Amendment of Permit
Farmland Hydro, L.P.

Attached for your approval and signature is a letter that will extend a construction permit to modify a phosphate fertilizer plant. The extension is to allow additional time to complete the compliance tests and submit an application for permit to operate.

The request is not controversial. I recommend your approval and signature.

CHF/WH/bjb

Attachment

Patty 2/22

Howard signed this one.

Clair

Is your RETURN ADDRESS completed on the reverse side?

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

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. C. Gene Meier, Administrator
Environmental Services
Farmland Hydro, L.P.
Post Office Box 960
Bartow, Florida 33830

4a. Article Number
P 872 562 608

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

7. Date of Delivery
2-28-94

5. Signature (Addressee)
Linda Thompson

6. Signature (Agent)

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

PS Form **3811**, December 1991 ☆U.S. GPO: 1992—323-402 **DOMESTIC RETURN RECEIPT**

Thank you for using Return Receipt Service.

P 872 562 608

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

UNITED STATES POSTAL SERVICE

Sent to: Mr. C. Gene Meier	
Street and No.: Post Office Box 960	
P.O., State and ZIP Code: Bartow, Florida 33830	
Postage	$
Certified Fee	
Special Delivery Fee	
Restricted Delivery Fee	
Return Receipt Showing to Whom & Date Delivered	
Return Receipt Showing to Whom, Date, and Addressee's Address	
TOTAL Postage & Fees	$
Postmark or Date: Mailed: 2/23/94 Permit No. AC 53-210886/ PSD-FL-186	

PS Form **3800**, JUNE 1991

Is your RETURN ADDRESS completed on the reverse side?

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

RECEIVED
APR 25 1994
Bureau of Air Regulation

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. C. Gene Meier, Administrator
Environmental Services
Farmland Hydro, L.P.
P. O. Box 960
Bartow, Florida 33830

4a. Article Number
P 872 563 626

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

7. Date of Delivery
4/21/94

5. Signature (Addressee)
Linda Thompson

6. Signature (Agent)

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

Thank you for using Return Receipt Service.

PS Form **3811**, December 1991 ☆U.S. GPO: 1992—323-402 **DOMESTIC RETURN RECEIPT**

P 872 563 626

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

UNITED STATES POSTAL SERVICE

Sent to: Mr. C. Gene Meier	
Street and No.: P. O. Box 960	
P.O., State and ZIP Code: Bartow, Florida 33830	
Postage	$
Certified Fee	
Special Delivery Fee	
Restricted Delivery Fee	
Return Receipt Showing to Whom & Date Delivered	
Return Receipt Showing to Whom, Date, and Addressee's Address	
TOTAL Postage & Fees	$
Postmark or Date: Mailed: 4/19/94 AC 53-210886/PSD-FL-186	

PS Form **3800**, JUNE 1991

5 .25 F0346 FLORIDA DEPARTMENT OF — REMITTANCE ADVICE — 96626 — CHECK NUMBER 69996626

CO. BR. VENDOR NO. VENDOR NAME

DESCRIPTION	P.O.	VOUCHER	INVOICE NO.	INV. DATE	INVOICE AMOUNT	DISCOUNT TAKEN	AMOUNT PAID
010222		90439	12893	120893	50.00		50.00
001 50.00+							
50.00*+							
			TOTALS		50.00		50.00

-6310 (10/91)

Farmland Hydro, L.P.
P.O. Box 7305
Kansas City, Missouri 64116

Farmland Hydro, L.P.
P.O. Box 7305
Kansas City, Missouri 64116

CHECK NO. 69996626

0001281

80-182
1019

16 25	F0346	12/10/93
CO. BR.	VEND. NO.	CHECK DATE

PAY EXACTLY $*******50 DOLLARS AND 00 CENTS

CHECK AMOUNT
$*******50.00
VOID AFTER 180 DAYS

Boatmen's Bank of Marshall
Marshall, Missouri 65340

Farmland Hydro, L.P.

PAY TO THE ORDER OF

FLORIDA DEPARTMENT OF
ENVIRONMENTAL REGULATION
2600 BLAIR STONE RD
TALLAHASSEE FL 32399

[redacted]

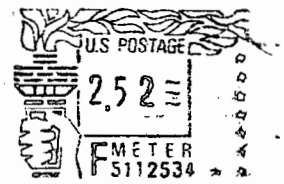
Farmland Hydro, L.P.

Green Bay Plant
County Road 640
Post Office Box 960
Bartow, Florida 33830

CERTIFIED

P 271 140 495

MAIL



Mr. C. H. Fancy, P.E.
Chief, Bureau of Air Regulation
Department of Environmental Protection
2600 Blair Stone Road
Tallahassee, Fl. 32399-2400

Florida Department of
Environmental Protection

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

Lawton Chiles
Governor

Virginia B. Wetherell
Secretary

November 8, 1993

CERTIFIED MAIL - RETURN RECEIPT REQUESTED

Mr. C. M. Farris
Farmland Hydro, L.P.
P. O. Box 960
Bartow, Florida 33830

239381
PATS updated

Dear Mr. Farris:

Re: Amendment of Permit No. AC53-210886

The Department has reviewed Mr. Gene Meier's September 16, 1993, letter requesting that the referenced construction permit for Farmland's North GTSP/MAP/DAP Granulation Plant Modification be extended. The additional time is needed to complete the compliance tests. This request is acceptable and construction permit no. AC 53-210886 is extended from January 1, 1994, to April 1, 1994.

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 applicant of the amendment request/application and the parties listed below must be filed within 14 days of receipt of this amendment. Petitions filed by other persons must be filed within 14 days of the amendment issuance or within 14 days of their receipt of this amendment, whichever occurs first. 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.

P 872 562 496

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

UNITED STATES POSTAL SERVICE

Sent to: Mr. C. M. Farris	
Street and No.: P. O. Box 960	
P.O., State and ZIP Code: Bartow, Florida 33830	
Postage	$
Certified Fee	
Special Delivery Fee	
Restricted Delivery Fee	
Return Receipt Showing to Whom & Date Delivered	
Return Receipt Showing to Whom, Date, and Addressee's Address	
TOTAL Postage & Fees	$
Postmark or Date: Mailed: 11/10/93 AC53-210886	

PS Form **3800**, JUNE 1991

Is your RETURN ADDRESS completed on the reverse side?

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

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. C. M. Farris
Farmland Hydro, L.P.
P. O. Box 960
Bartow, Florida 33830

4a. Article Number
P 872 562 496

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

7. Date of Delivery
11-16-93

5. Signature (Addressee) Linda Thompson

6. Signature (Agent) Kelly Johnson

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

Thank you for using Return Receipt Service.

PS Form **3811**, December 1991 ☆U.S. GPO: 1992—323-402 **DOMESTIC RETURN RECEIPT**

P 230 524 412

Receipt for Certified Mail

UNITED STATES POSTAL SERVICE

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

Sent to Mr. C. Gene Meier	
Street and No. P. O. Box 960	
P.O., State and ZIP Code Bartow, Florida 33830	
Postage	$
Certified Fee	
Special Delivery Fee	
Restricted Delivery Fee	
Return Receipt Showing to Whom & Date Delivered	
Return Receipt Showing to Whom, Date, and Addressee's Address	
TOTAL Postage & Fees	$
Postmark or Date Mailed: 9/27/93 AC53-210886, PSD-FL-186	

PS Form **3800**, June 1991

Is your **RETURN ADDRESS** completed on the reverse side?

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

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. C. Gene Meier
Administrator, Environ. Sciences
Farmland Sydro, L.P.
Post Office Box 960
Bartow, Florida 33830

4a. Article Number
P 230 524 412

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

7. Date of Delivery
OCT 01 1993

5. Signature (Addressee)
Linda Thompson

6. Signature (Agent)

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

Thank you for using Return Receipt Service.

PS Form **3811**, December 1991 ☆U.S. GPO: 1992—323-402 **DOMESTIC RETURN RECEIPT**

P 710 058 525

Certified Mail Receipt

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

UNITED STATES POSTAL SERVICE

Sent to C M Farris	
Street & No. Farmland Hydro	
P.O., State & ZIP Code Bartow, 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 53-310886 7-28-92	

PS Form 3800, June 1990

SENDER:

- Complete items 1 and/or 2.
- 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 below the article number.
- The Return Receipt Fee will provide you the signature of the person delivered to and the date of delivery.

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:

C. M. Farris
Farmland Hydro, L.P.
PO Box 960
Bartow, FL 33830

4a. Article Number

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

7. Date of Delivery JUL 30 1992

5. Signature (Addressee) Linda Thompson

6. Signature (Agent)

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

PS Form 3811, November 1990 ☆U.S. GPO: 1991—287-068 **DOMESTIC RETURN RECEIPT**

AFFIDAVIT OF PUBLICATION

THE LEDGER
Lakeland, Polk County, Florida

Case No .....

STATE OF FLORIDA)
COUNTY OF POLK)

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

Notice of Intent

in the matter of

Construction Permit

in the

Court, was published in said newspaper in the issues of

June 22;

1992

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

Signed ..... Controller

Sworn to and subscribed before me this 22nd day of June A.D. 19 1992

BILLIE MORLAN
MY COMMISSION # CC 191354
EXPIRES: April 6, 1996
Bonded Thru Notary Public Underwriters

(Seal)

Billie Morlan
Notary Public

My Commission Expires Billie Morlan

Farmland Hydro, L.P.
Acct #10643

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

The Department of Environmental Regulation gives notice of its intent to issue a construction permit (AC 53-210886/PSD-FL-186) to Farmland Hydro, L.P., P. O. Box 960, Bartow, Florida 33830. The permit will allow the applicant to modify and increase production of the North GTSP/MAP/DAP Granulation Plant, located on County Road 640 West near Bartow, Polk County, Florida. The allowable emissions will be 22.5 lbs/hr (98.6 TPY) of particulate matter, 3.7 lbs/hr (16.4 TPY) fluorides, and 46.7 lbs/hr (204.7 TPY) ammonia. The proposed project is subject to Prevention of Significant Deterioration (PSD) regulations for fluorides. A determination of Best Available Control Technology (BACT) was required for fluorides. There are no PSD increments or ambient air quality standards for fluorides. These emissions will not cause a violation of any ambient air 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.
M-538 — 6-22; 1992

M 538

Florida Department of Environmental Regulation

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

Lawton Chiles, Governor

Carol M. Browner, Secretary

June 16, 1992

CERTIFIED MAIL-RETURN RECEIPT REQUESTED

Mr. C. M. Farris
Vice President of Operations
Farmland Hydro, L.P.
P. O. Box 960
Bartow, Florida 33830

Dear Mr. Farris:

Attached is one copy of the Technical Evaluation and Preliminary Determination and proposed permit for the modification of the North GTSP/MAP/DAP Granulation Plant at the Green Bay phosphate fertilizer chemical complex located on County Road 640 West near Bartow, 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

Farmland's (original) and J. Koogler copies sent Fed. Express 6-17-92
Billed to J Koogler

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

KA 123-92-01

March 26, 1992

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

Subject: Farmland PSD Permit Application

Dear Mr. Holladay:

As per our conversation today, enclosed is a diskette that contains the input and output modeling files of the fluoride and ammonia air quality impact analysis in support of the Farmland PSD permit application submitted previously.

If you have any questions concerning the data on the enclosed diskette, please give our office a call.

Very truly yours,

KOOGLER & ASSOCIATES

Pradeep A. Raval

PAR:mab

cc: Charles Jenkins, Farmland

FEDERAL EXPRESS

QUESTIONS? CALL 800-238-5355 TOLL FREE.

AIRBILL
PACKAGE TRACKING NUMBER 2229318560

2669H 2229318560

Date 3/26/93

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Pradeep Raval	904-377-[illegible]82	Mr. Cleve Holladay	
Company: GLER & ASSOC	Department/Floor No.	Company: FDER	Department/Floor No.
Street Address: 4 NW 13TH ST		Exact Street Address (We Cannot Deliver to P.O. Boxes or P.O. Zip Codes.): 2600 Blair Stone Road	
City: NSVILLE State: FL ZIP Required: 3 2 6 0 0		City: Tallahassee State: FL ZIP Required: 32399	

YOUR INTERNAL BILLING REFERENCE INFORMATION (optional) (First 24 characters will appear on invoice.)
123-92-01

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11 [ ] YOUR PACKAGING	51 [ ] YOUR PACKAGING
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	41 [ ] GOVT PACKAGE

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Emp. No. Date
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[ ] Third Party [ ] Chg. To Del. [ ] Chg. To Hold
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