



KOOGLER & ASSOCIATES

ENVIRONMENTAL SERVICES
4014 NW THIRTEENTH STREET
GAINESVILLE, FLORIDA 32609
352/377-5822 ■ FAX/377-7158

KA 173-01-01

May 2, 2001

RECEIVED
MAY 07 2001
BUREAU OF AIR REGULATION

Mr. Al Linero, P.E.
Florida Department of
Environmental Protection
Twin Towers Office Building
2600 Blair Stone Rd
Tallahassee, FL 32399-2400

Subject: PSD Permit Application
Granular MAP/DAP Production Increase
US Agri-Chemicals, Ft. Meade Chemical Plant

Dear Mr. Linero:


Enclosed are eight (8) copies of a PSD permit application for an increase in the production rate of USAC's Granular MAP/DAP Plant located at Ft. Meade. Also enclosed is a disk containing the air dispersion modeling output.

A check in the amount of \$7500 (permit application fee) is enclosed.

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

Very truly yours,

KOOGLER & ASSOCIATES


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

JBK:par
Encl.

c: J. Girardin, USAC

J. Arif
C. Nalladay
B. Thomas, SW Dist.
D. Worley, EPA
A. Remyah, NPS



Jeb Bush
Governor

Department of Environmental Protection

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

David B. Struhs
Secretary

May 7, 2001

Mr. John Bunyak, Chief
Policy, Planning & Permit Review Branch
NPS – Air Quality Division
Post Office Box 25287
Denver, Colorado 80225

RE: Facility ID No. 1050051-015-AC, PSD-FL-321
U.S. Agri-Chemicals, Ft. Meade Chemical Plant
Granular MAP/DAP Production Increase

Dear Mr. Bunyak:

Enclosed for your review and comment is an application for U.S. Agri-Chemicals to increase the production rate of their MAP/DAP Plant located in Fort Meade, Polk County, Florida.

Your comments may be forwarded to my attention at the letterhead address or faxed to the Bureau of Air Regulation at 850/922-6979. If you have any questions, please contact Syed Arif, review engineer, at 850/921-9528.

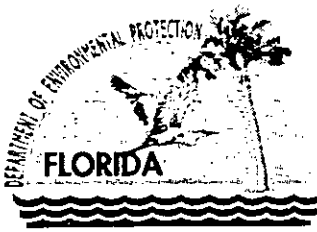
Sincerely,

for Al Linero, P.E.
Administrator
New Source Review Section

AAL/pa
Enclosure
cc: Syed Arif

"More Protection, Less Process"

Printed on recycled paper.



Jeb Bush
Governor

Department of Environmental Protection

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

David B. Struhs
Secretary

May 7, 2001

Mr. Gregg Worley, Chief
Air, Radiation Technology Branch
Preconstruction/HAP Section
U.S. EPA, Region 4
61 Forsyth Street
Atlanta, Georgia 30303

RE: Facility ID No. 1050051-015-AC, PSD-FL-321
U.S. Agri-Chemicals, Ft. Meade Chemical Plant
Granular MAP/DAP Production Increase

Dear Mr. Worley:

Enclosed for your review and comment is an application for U.S. Agri-Chemicals to increase the production rate of their MAP/DAP Plant located in Fort Meade, Polk County, Florida.

Your comments may be forwarded to my attention at the letterhead address or faxed to the Bureau of Air Regulation at 850/922-6979. If you have any questions, please contact Syed Arif, review engineer, at 850/921-9528.

Sincerely,

Al Linero, P.E.
Administrator
New Source Review Section

AAL/pa
Enclosure
cc: Syed Arif

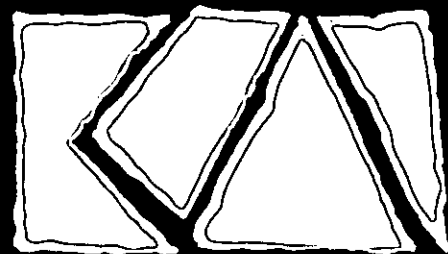
REPORT IN SUPPORT OF
PSD APPLICATION

FOR

INCREASE IN GRANULAR
MAP/DAP PRODUCTION

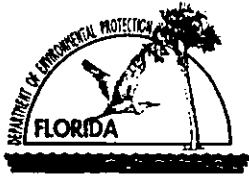
U.S. AGRICHEMICALS CORPORATION
FT. MEADE FACILITY

May, 2001



KOOGLER & ASSOCIATES
ENVIRONMENTAL SERVICES

4014 NW THIRTEENTH STREET
GAINESVILLE, FLORIDA 32609
352/377-5822 • FAX 377-7158



Department of Environmental Protection

Division of Air Resources Management

RECEIVED

MAY 07 2001

APPLICATION FOR AIR PERMIT - TITLE V SOURCE

See Instructions for Form No. 62-210.900(1)

BUREAU OF AIR REGULATION

I. APPLICATION INFORMATION

Identification of Facility

1. Facility Owner/Company Name: US Agri-Chemicals Corporation	
2. Site Name: Ft. Meade Chemical Plant	
3. Facility Identification Number: 1050051 [] Unknown	
4. Facility Location: Street Address or Other Locator: 3225 State Road 630 West City: Ft. Meade County: Polk Zip Code: 33841-9799	
5. Relocatable Facility? [] Yes [X] No	6. Existing Permitted Facility? [X] Yes [] No

Application Contact

1. Name and Title of Application Contact: Ronald L. Brunk, Manager, Env. Eng.	
2. Application Contact Mailing Address: Organization/Firm: Same as Above. Street Address: City: State: Zip Code:	
3. Application Contact Telephone Numbers: Telephone: (863)285-8121 Fax: (863)285-7088	

Application Processing Information (DEP Use)

1. Date of Receipt of Application:	5-7-01
2. Permit Number:	1050051-015-AC
3. PSD Number (if applicable):	PSD-FL-321
4. Siting Number (if applicable):	

Purpose of Application

Air Operation Permit Application

This Application for Air Permit is submitted to obtain: (Check one)

- Initial Title V air operation permit for an existing facility which is classified as a Title V source.
- Initial Title V air operation permit for a facility which, upon start up of one or more newly constructed or modified emissions units addressed in this application, would become classified as a Title V source.
Current construction permit number: _____
- Title V air operation permit revision to address one or more newly constructed or modified emissions units addressed in this application.
Current construction permit number: _____
Operation permit number to be revised: _____
- Title V air operation permit revision or administrative correction to address one or more proposed new or modified emissions units and to be processed concurrently with the air construction permit application. (Also check Air Construction Permit Application below.)
Operation permit number to be revised/corrected: _____
- Title V air operation permit revision for reasons other than construction or modification of an emissions unit. Give reason for the revision; e.g., to comply with a new applicable requirement or to request approval of an "Early Reductions" proposal.
Operation permit number to be revised: _____
Reason for revision: _____

Air Construction Permit Application

This Application for Air Permit is submitted to obtain: (Check one)

- Air construction permit to construct or modify one or more emissions units.
- Air construction permit to make federally enforceable an assumed restriction on the potential emissions of one or more existing, permitted emissions units.
- Air construction permit for one or more existing, but unpermitted, emissions units.

Owner/Authorized Representative or Responsible Official

1. Name and Title of Owner/Authorized Representative or Responsible Official: Phong T. Vo, General Manager of Engineering and Technical Services
2. Owner/Authorized Representative or Responsible Official Mailing Address: Organization/Firm: US Agri-Chemicals Street Address: 3225 State Road 630 West City: Ft. Meade State: FL Zip Code: 33841-9799
3. Owner/Authorized Representative or Responsible Official Telephone Numbers: Telephone: (863) 285-8121 Fax: (863) 285-7088
4. Owner/Authorized Representative or Responsible Official Statement: <i>I, the undersigned, am the owner or authorized representative*(check here [], if so) or the responsible official (check here [X], if so) of the Title V source addressed in this application, whichever is applicable. I hereby certify, based on information and belief formed after reasonable inquiry, that the statements made in this application are true, accurate and complete and that, to the best of my knowledge, any estimates of emissions reported in this application are based upon reasonable techniques for calculating emissions. The air pollutant emissions units and air pollution control equipment described in this application will be operated and maintained so as to comply with all applicable standards for control of air pollutant emissions found in the statutes of the State of Florida and rules of the Department of Environmental Protection and revisions thereof. I understand that a permit, if granted by the Department, cannot be transferred without authorization from the Department, and I will promptly notify the Department upon sale or legal transfer of any permitted emissions unit.</i> Signature <u>Phong T. Vo</u> Date <u>5/4/01</u>

* Attach letter of authorization if not currently on file.

Professional Engineer Certification

1. Professional Engineer Name: John B. Koogler, Ph.D., P.E. Registration Number: 12925
2. Professional Engineer Mailing Address: Organization/Firm: Koogler and Associates Street Address: 4014 NW 13th Street City: Gainesville State: FL Zip Code: 32609
3. Professional Engineer Telephone Numbers: Telephone: (352) 377-5822 Fax: (352) 377-7158

4. Professional Engineer Statement:

I, the undersigned, hereby certify, except as particularly noted herein, that:*

(1) To the best of my knowledge, there is reasonable assurance that the air pollutant emissions unit(s) and the air pollution control equipment described in this Application for Air Permit, when properly operated and maintained, will comply with all applicable standards for control of air pollutant emissions found in the Florida Statutes and rules of the Department of Environmental Protection; and

(2) To the best of my knowledge, any emission estimates reported or relied on in this application are true, accurate, and complete and are either based upon reasonable techniques available for calculating emissions or, for emission estimates of hazardous air pollutants not regulated for an emissions unit addressed in this application, based solely upon the materials, information and calculations submitted with this application.

If the purpose of this application is to obtain a Title V source air operation permit (check here [], if so), I further certify that each emissions unit described in this Application for Air Permit, when properly operated and maintained, will comply with the applicable requirements identified in this application to which the unit is subject, except those emissions units for which a compliance schedule is submitted with this application.

If the purpose of this application is to obtain an air construction permit for one or more proposed new or modified emissions units (check here [X], if so), I further certify that the engineering features of each such emissions unit described in this application have been designed or examined by me or individuals under my direct supervision and found to be in conformity with sound engineering principles applicable to the control of emissions of the air pollutants characterized in this application.

If the purpose of this application is to obtain an initial air operation permit or operation permit revision for one or more newly constructed or modified emissions units (check here [], if so), I further certify that, with the exception of any changes detailed as part of this application, each such emissions unit has been constructed or modified in substantial accordance with the information given in the corresponding application for air construction permit and with all provisions contained in such permit.

Signature

(seal)

Date

5/2/01

* Attach any exception to certification statement.

Construction/Modification Information

1. Description of Proposed Project or Alterations:

The proposed project includes an increase in the production rate of Granular MAP/DAP from 50 to 60 tph. The existing Prill/Granular MAP/DAP storage and loadout system will continue to be used without requiring any physical modifications. The proposed project is subject to a PSD review as the expected increases, in the air emissions of particulate matter and fluorides will be greater than the significant pursuant to Rule 62-212 of the Florida Administrative Code.

2. Projected or Actual Date of Commencement of Construction: **12/01/01**

3. Projected Date of Completion of Construction: **12/31/03**

Application Comment

The application includes only information related to the proposed modification, as suggested by FDEP.

Facility Regulatory Classifications

Check all that apply:

1. <input type="checkbox"/> Small Business Stationary Source?	<input type="checkbox"/> Unknown
2. <input checked="" type="checkbox"/> Major Source of Pollutants Other than Hazardous Air Pollutants (HAPs)?	
3. <input type="checkbox"/> Synthetic Minor Source of Pollutants Other than HAPs?	
4. <input type="checkbox"/> Major Source of Hazardous Air Pollutants (HAPs)?	
5. <input type="checkbox"/> Synthetic Minor Source of HAPs?	
6. <input checked="" type="checkbox"/> One or More Emissions Units Subject to NSPS?	
7. <input checked="" type="checkbox"/> One or More Emission Units Subject to NESHAP?	
8. <input type="checkbox"/> Title V Source by EPA Designation?	
9. Facility Regulatory Classifications Comment (limit to 200 characters):	

List of Applicable Regulations

DEP TITLE V CORE LIST	
40 CFR 52, 55, 60, 61, 63, 68, 82	
FAC RULES 62-4, 204, 210, 212, 213, 214, 252, 256, 257, 281, 296, 297	

B. FACILITY POLLUTANTS

List of Pollutants Emitted

1. Pollutant Emitted	2. Pollutant Classif.	3. Requested Emissions Cap		4. Basis for Emissions Cap	5. Pollutant Comment
		lb/hour	tons/year		
SO2	A				
FL	B				
PM/PM10	B				
NO _x	A				
SAM	A				

Additional Supplemental Requirements for Title V Air Operation Permit Applications

8. List of Proposed Insignificant Activities: <input type="checkbox"/> Attached, Document ID: _____ <input checked="" type="checkbox"/> Not Applicable
9. List of Equipment/Activities Regulated under Title VI: <input type="checkbox"/> Attached, Document ID: _____ <input type="checkbox"/> Equipment/Activities On site but Not Required to be Individually Listed <input checked="" type="checkbox"/> Not Applicable
10. Alternative Methods of Operation: <input type="checkbox"/> Attached, Document ID: _____ <input checked="" type="checkbox"/> Not Applicable
11. Alternative Modes of Operation (Emissions Trading): <input type="checkbox"/> Attached, Document ID: _____ <input checked="" type="checkbox"/> Not Applicable
12. Identification of Additional Applicable Requirements: <input type="checkbox"/> Attached, Document ID: _____ <input checked="" type="checkbox"/> Not Applicable
13. Risk Management Plan Verification: <input checked="" type="checkbox"/> Plan previously submitted to Chemical Emergency Preparedness and Prevention Office (CEPPO). Verification of submittal attached (Document ID: <u>100000145871</u>) or previously submitted to DEP (Date and DEP Office: _____) <input type="checkbox"/> Plan to be submitted to CEPPO (Date required: _____) <input type="checkbox"/> Not Applicable
14. Compliance Report and Plan: <input type="checkbox"/> Attached, Document ID: _____ <input checked="" type="checkbox"/> Not Applicable
15. Compliance Certification (Hard-copy Required): <input type="checkbox"/> Attached, Document ID: _____ <input checked="" type="checkbox"/> Not Applicable

III. EMISSIONS UNIT INFORMATION

A separate Emissions Unit Information Section (including subsections A through J as required) must be completed for each emissions unit addressed in this Application for Air Permit. If submitting the application form in hard copy, indicate, in the space provided at the top of each page, the number of this Emissions Unit Information Section and the total number of Emissions Unit Information Sections submitted as part of this application.

**A. GENERAL EMISSIONS UNIT INFORMATION
(All Emissions Units)**

Emissions Unit Description and Status

<p>1. Type of Emissions Unit Addressed in This Section: (Check one)</p> <p><input checked="" type="checkbox"/> This Emissions Unit Information Section addresses, as a single emissions unit, a single process or production unit, or activity, which produces one or more air pollutants and which has at least one definable emission point (stack or vent).</p> <p><input type="checkbox"/> This Emissions Unit Information Section addresses, as a single emissions unit, a group of process or production units and activities which has at least one definable emission point (stack or vent) but may also produce fugitive emissions.</p> <p><input type="checkbox"/> This Emissions Unit Information Section addresses, as a single emissions unit, one or more process or production units and activities which produce fugitive emissions only.</p>			
<p>2. Regulated or Unregulated Emissions Unit? (Check one)</p> <p><input checked="" type="checkbox"/> The emissions unit addressed in this Emissions Unit Information Section is a regulated emissions unit.</p> <p><input type="checkbox"/> The emissions unit addressed in this Emissions Unit Information Section is an unregulated emissions unit.</p>			
<p>3. Description of Emissions Unit Addressed in This Section (limit to 60 characters):</p> <p>MAP/DAP Plant</p>			
<p>4. Emissions Unit Identification Number:</p> <p>ID: 032/038 [] No ID</p>			
<p>5. Emissions Unit Status Code:</p> <p>A</p>	<p>6. Initial Startup Date:</p> <p>N/A</p>	<p>7. Emissions Unit Major Group SIC Code:</p> <p>28</p>	<p>8. Acid Rain Unit?</p> <p>[]</p>
<p>9. Emissions Unit Comment: (Limit to 500 Characters) This plant is permitted to produce prilled or granular MAP and DAP.</p>			

Emissions Unit Control Equipment

1. Control Equipment/Method Description (Limit to 200 characters per device or method):

VENTURI SCRUBBER

2. Control Device or Method Code(s): **053**

Emissions Unit Details

1. Package Unit: **N/A**
Manufacturer:
Model Number:

2. Generator Nameplate Rating: **MW**

3. Incinerator Information:
Dwell Temperature: °F
Dwell Time: seconds
Incinerator Afterburner Temperature: °F

**B. EMISSIONS UNIT CAPACITY INFORMATION
(Regulated Emissions Units Only)**

Emissions Unit Operating Capacity and Schedule

1. Maximum Heat Input Rate:	30	mmBtu/hr
2. Maximum Incineration Rate:	N/A	lb/hr tons/day
3. Maximum Process or Throughput Rate:	31.8 tph P2O5 input	
4. Maximum Production Rate:	60 tph granular product	
5. Requested Maximum Operating Schedule:		
	24	hours/day
	7	days/week
	52	weeks/year
	8760	hours/year
6. Operating Capacity/Schedule Comment (limit to 200 characters):	Process rate is based on a conversion factor of 0.53	

**E. SEGMENT (PROCESS/FUEL) INFORMATION
(All Emissions Units)**

Segment Description and Rate: Segment 1 of 2

1. Segment Description (Process/Fuel Type) (limit to 500 characters): MAP/DAP granular production		
2. Source Classification Code (SCC): 3-01-030-02		3. SCC Units: TONS
4. Maximum Hourly Rate: 60	5. Maximum Annual Rate: 525,600	6. Estimated Annual Activity Factor: N/A
7. Maximum % Sulfur: N/A	8. Maximum % Ash: N/A	9. Million Btu per SCC Unit: N/A
10. Segment Comment (limit to 200 characters):		

Segment Description and Rate: Segment 2 of 2

1. Segment Description (Process/Fuel Type) (limit to 500 characters): Natural gas firing		
2. Source Classification Code (SCC): 3-90-006-89		3. SCC Units: MMCF
4. Maximum Hourly Rate: 0.03	5. Maximum Annual Rate: 263	6. Estimated Annual Activity Factor:
7. Maximum % Sulfur:	8. Maximum % Ash:	9. Million Btu per SCC Unit:
10. Segment Comment (limit to 200 characters):		

G. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION
(Regulated Emissions Units -
Emissions-Limited and Preconstruction Review Pollutants Only)

Potential/Fugitive Emissions

1. Pollutant Emitted: FL	2. Total Percent Efficiency of Control:
3. Potential Emissions: 1.18 lb/hour 5.2 tons/year	4. Synthetically Limited? []
5. Range of Estimated Fugitive Emissions: [<input checked="" type="checkbox"/>] 1 [] 2 [] 3 _____ to _____ tons/year	
6. Emission Factor: 0.037 lb/ton P2O5 input Reference: Proposed BACT	7. Emissions Method Code: O
8. Calculation of Emissions (limit to 600 characters): FL = 0.037 lbs/ton P2O5 input x 31.8 tph P2O5 = 1.18 lb/hr X 8760 hours x ton/2000 lbs = 5.2 tpy	
9. Pollutant Potential/Fugitive Emissions Comment (limit to 200 characters): There is a potential for fugitive emissions from the plant.	

Allowable Emissions Allowable Emissions 1 of 1

1. Basis for Allowable Emissions Code: Rule	2. Future Effective Date of Allowable Emissions: N/A
3. Requested Allowable Emissions and Units: 0.037 lb/ton P2O5 input	4. Equivalent Allowable Emissions: 1.18 lb/hour 5.2 tons/year
5. Method of Compliance (limit to 60 characters): EPA Method 13A/13B	
6. Allowable Emissions Comment (Desc. of Operating Method) (limit to 200 characters): BACT	

Emissions Unit Information Section 1 of 2

Pollutant Detail Information Page 2 of 3

G. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION
(Regulated Emissions Units -
Emissions-Limited and Preconstruction Review Pollutants Only)

Potential/Fugitive Emissions

1. Pollutant Emitted: PM	2. Total Percent Efficiency of Control:
3. Potential Emissions: 10.2 lb/hour 44.7 tons/year	4. Synthetically Limited? []
5. Range of Estimated Fugitive Emissions: [<input checked="" type="checkbox"/>] 1 [] 2 [] 3 _____ to _____ tons/year	
6. Emission Factor: 0.17 lb/ton product Reference: Proposed BACT	7. Emissions Method Code: O
8. Calculation of Emissions (limit to 600 characters): PM = 0.17 lbs/ton product x 60 tph = 10.2 lb/hr X 8760 hours x ton/2000 lbs = 44.7 tpy	
9. Pollutant Potential/Fugitive Emissions Comment (limit to 200 characters): There is a potential for fugitive emissions from the plant.	

Allowable Emissions Allowable Emissions 1 of 1

1. Basis for Allowable Emissions Code: Rule	2. Future Effective Date of Allowable Emissions: N/A
3. Requested Allowable Emissions and Units: 0.17 lb/ton product	4. Equivalent Allowable Emissions: 10.2 lb/hour 44.7 tons/year
5. Method of Compliance (limit to 60 characters): EPA Method 5	
6. Allowable Emissions Comment (Desc. of Operating Method) (limit to 200 characters): BACT	

Emissions Unit Information Section 1 of 2

Pollutant Detail Information Page 3 of 3

G. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION

(Regulated Emissions Units -

Emissions-Limited and Preconstruction Review Pollutants Only)

Potential/Fugitive Emissions

1. Pollutant Emitted: NOX		2. Total Percent Efficiency of Control:	
3. Potential Emissions: 4.2 lb/hour		4. Synthetically Limited? []	
		18.4 tons/year	
5. Range of Estimated Fugitive Emissions: [<input checked="" type="checkbox"/>] 1 [] 2 [] 3 _____ to _____ tons/year			
6. Emission Factor: 140 lb/MMCF Reference: AP-42		7. Emissions Method Code: O	
8. Calculation of Emissions (limit to 600 characters): $\text{NOX} = 140 \text{ lbs/MMCF} \times 0.03 \text{ MMCF/hr} = 4.2 \text{ lb/hr}$ $\times 8760 \text{ hours} \times \text{ton}/2000 \text{ lbs} = 18.4 \text{ tpy}$			
9. Pollutant Potential/Fugitive Emissions Comment (limit to 200 characters): There is a potential for fugitive emissions from the plant.			

Allowable Emissions Allowable Emissions _____ of _____

1. Basis for Allowable Emissions Code: NA		2. Future Effective Date of Allowable Emissions:	
3. Requested Allowable Emissions and Units: NA		4. Equivalent Allowable Emissions: lb/hour tons/year	
5. Method of Compliance (limit to 60 characters): NA			
6. Allowable Emissions Comment (Desc. of Operating Method) (limit to 200 characters): No applicable standard.			

H. VISIBLE EMISSIONS INFORMATION
(Only Regulated Emissions Units Subject to a VE Limitation)

Visible Emissions Limitation: Visible Emissions Limitation 1 of 1

1. Visible Emissions Subtype: VE15	2. Basis for Allowable Opacity: [X] Rule [] Other
3. Requested Allowable Opacity: Normal Conditions: 15 % Exceptional Conditions: % Maximum Period of Excess Opacity Allowed: min/hour	
4. Method of Compliance: EPA Method 9	
5. Visible Emissions Comment (limit to 200 characters): BACT	

I. CONTINUOUS MONITOR INFORMATION
(Only Regulated Emissions Units Subject to Continuous Monitoring)

Continuous Monitoring System: Continuous Monitor 1 of 2

1. Parameter Code: FLOW	2. Pollutant(s): N/A
3. CMS Requirement:	[X] Rule [] Other
4. Monitor Information: Manufacturer: Model Number: Serial Number:	
5. Installation Date:	6. Performance Specification Test Date:
7. Continuous Monitor Comment (limit to 200 characters): NSPS requirement, one for each scrubber.	

I. CONTINUOUS MONITOR INFORMATION
(Only Regulated Emissions Units Subject to Continuous Monitoring)

Continuous Monitoring System: Continuous Monitor 2 of 2

1. Parameter Code: PRS	2. Pollutant(s): N/A
3. CMS Requirement:	<input checked="" type="checkbox"/> Rule <input type="checkbox"/> Other
4. Monitor Information: Manufacturer: Model Number: Serial Number:	
5. Installation Date:	6. Performance Specification Test Date:
7. Continuous Monitor Comment (limit to 200 characters): NSPS requirement, one for each scrubber.	

**J. EMISSIONS UNIT SUPPLEMENTAL INFORMATION
(Regulated Emissions Units Only)**

Supplemental Requirements

1. Process Flow Diagram <input checked="" type="checkbox"/> Attached, Document ID: Report <input type="checkbox"/> Not Applicable <input type="checkbox"/> Waiver Requested
2. Fuel Analysis or Specification <input type="checkbox"/> Attached, Document ID: _____ <input checked="" type="checkbox"/> Not Applicable <input type="checkbox"/> Waiver Requested
3. Detailed Description of Control Equipment <input type="checkbox"/> Attached, Document ID: _____ <input type="checkbox"/> Not Applicable <input checked="" type="checkbox"/> Waiver Requested Previously submitted
4. Description of Stack Sampling Facilities <input type="checkbox"/> Attached, Document ID: _____ <input type="checkbox"/> Not Applicable <input checked="" type="checkbox"/> Waiver Requested Previously submitted
5. Compliance Test Report <input checked="" type="checkbox"/> Attached, Document ID: Report (summary) <input type="checkbox"/> Previously submitted, Date: _____ <input type="checkbox"/> Not Applicable
6. Procedures for Startup and Shutdown <input type="checkbox"/> Attached, Document ID: _____ <input checked="" type="checkbox"/> Not Applicable <input type="checkbox"/> Waiver Requested
7. Operation and Maintenance Plan <input type="checkbox"/> Attached, Document ID: _____ <input checked="" type="checkbox"/> Not Applicable <input type="checkbox"/> Waiver Requested
8. Supplemental Information for Construction Permit Application <input checked="" type="checkbox"/> Attached, Document ID: Report <input type="checkbox"/> Not Applicable
9. Other Information Required by Rule or Statute <input type="checkbox"/> Attached, Document ID: _____ <input checked="" type="checkbox"/> Not Applicable
10. Supplemental Requirements Comment:

Additional Supplemental Requirements for Title V Air Operation Permit Applications

11. Alternative Methods of Operation <input type="checkbox"/> Attached, Document ID: _____ <input checked="" type="checkbox"/> Not Applicable
12. Alternative Modes of Operation (Emissions Trading) <input type="checkbox"/> Attached, Document ID: _____ <input checked="" type="checkbox"/> Not Applicable
13. Identification of Additional Applicable Requirements <input type="checkbox"/> Attached, Document ID: _____ <input checked="" type="checkbox"/> Not Applicable
14. Compliance Assurance Monitoring Plan <input type="checkbox"/> Attached, Document ID: _____ <input checked="" type="checkbox"/> Not Applicable
15. Acid Rain Part Application (Hard-copy Required) <input type="checkbox"/> Acid Rain Part - Phase II (Form No. 62-210.900(1)(a)) Attached, Document ID: _____ <input type="checkbox"/> Repowering Extension Plan (Form No. 62-210.900(1)(a)1.) Attached, Document ID: _____ <input type="checkbox"/> New Unit Exemption (Form No. 62-210.900(1)(a)2.) Attached, Document ID: _____ <input type="checkbox"/> Retired Unit Exemption (Form No. 62-210.900(1)(a)3.) Attached, Document ID: _____ <input type="checkbox"/> Phase II NOx Compliance Plan (Form No. 62-210.900(1)(a)4.) Attached, Document ID: _____ <input type="checkbox"/> Phase NOx Averaging Plan (Form No. 62-210.900(1)(a)5.) Attached, Document ID: _____ <input checked="" type="checkbox"/> Not Applicable

III. EMISSIONS UNIT INFORMATION

A separate Emissions Unit Information Section (including subsections A through J as required) must be completed for each emissions unit addressed in this Application for Air Permit. If submitting the application form in hard copy, indicate, in the space provided at the top of each page, the number of this Emissions Unit Information Section and the total number of Emissions Unit Information Sections submitted as part of this application.

**A. GENERAL EMISSIONS UNIT INFORMATION
(All Emissions Units)**

Emissions Unit Description and Status

<p>1. Type of Emissions Unit Addressed in This Section: (Check one)</p> <p><input type="checkbox"/> This Emissions Unit Information Section addresses, as a single emissions unit, a single process or production unit, or activity, which produces one or more air pollutants and which has at least one definable emission point (stack or vent).</p> <p><input checked="" type="checkbox"/> This Emissions Unit Information Section addresses, as a single emissions unit, a group of process or production units and activities which has at least one definable emission point (stack or vent) but may also produce fugitive emissions.</p> <p><input type="checkbox"/> This Emissions Unit Information Section addresses, as a single emissions unit, one or more process or production units and activities which produce fugitive emissions only.</p>			
<p>2. Regulated or Unregulated Emissions Unit? (Check one)</p> <p><input checked="" type="checkbox"/> The emissions unit addressed in this Emissions Unit Information Section is a regulated emissions unit.</p> <p><input type="checkbox"/> The emissions unit addressed in this Emissions Unit Information Section is an unregulated emissions unit.</p>			
<p>3. Description of Emissions Unit Addressed in This Section (limit to 60 characters):</p> <p>MAP/DAP Storage and Loadout</p>			
<p>4. Emissions Unit Identification Number:</p> <p style="text-align: center;">[] No ID ID: 037 [] ID Unknown</p>			
<p>5. Emissions Unit Status Code:</p> <p style="text-align: center;">A</p>	<p>6. Initial Startup Date:</p> <p style="text-align: center;">N/A</p>	<p>7. Emissions Unit Major Group SIC Code:</p> <p style="text-align: center;">28</p>	<p>8. Acid Rain Unit?</p> <p style="text-align: center;">[]</p>
<p>9. Emissions Unit Comment: (Limit to 500 Characters) No changes are proposed to the storage and loadout system.</p>			

Emissions Unit Control Equipment

1. Control Equipment/Method Description (Limit to 200 characters per device or method):

Baghouse; alternatively, a dust suppressant oil may be used.

2. Control Device or Method Code(s): **018/106**

Emissions Unit Details

1. Package Unit: **N/A**
Manufacturer:
Model Number:

2. Generator Nameplate Rating: **MW**

3. Incinerator Information:
Dwell Temperature: °F
Dwell Time: seconds
Incinerator Afterburner Temperature: °F

**B. EMISSIONS UNIT CAPACITY INFORMATION
(Regulated Emissions Units Only)**

Emissions Unit Operating Capacity and Schedule

1. Maximum Heat Input Rate:	N/A	mmBtu/hr
2. Maximum Incineration Rate:	N/A	lb/hr tons/day
3. Maximum Process or Throughput Rate:	150 TPH	
4. Maximum Production Rate:	N/A	
5. Requested Maximum Operating Schedule:		
	24 hours/day	7 days/week
	52 weeks/year	8760 hours/year
6. Operating Capacity/Schedule Comment (limit to 200 characters):		

**D. EMISSION POINT (STACK/VENT) INFORMATION
(Regulated Emissions Units Only)**

Emission Point Description and Type

1. Identification of Point on Plot Plan or Flow Diagram? Loadout		2. Emission Point Type Code: 1	
3. Descriptions of Emission Points Comprising this Emissions Unit for VE Tracking (limit to 100 characters per point): N/A			
4. ID Numbers or Descriptions of Emission Units with this Emission Point in Common: N/A			
5. Discharge Type Code: V	6. Stack Height: 50 feet	7. Exit Diameter: 1.2 feet	
8. Exit Temperature: 80 F	9. Actual Volumetric Flow Rate: 6000 acfm	10. Water Vapor: N/A %	
11. Maximum Dry Standard Flow Rate: N/A dscfm		12. Nonstack Emission Point Height: N/A feet	
13. Emission Point UTM Coordinates: Zone: East (km): North (km):			
14. Emission Point Comment (limit to 200 characters):			

**E. SEGMENT (PROCESS/FUEL) INFORMATION
(All Emissions Units)**

Segment Description and Rate: Segment 1 of 1

1. Segment Description (Process/Fuel Type) (limit to 500 characters): Material Loadout		
2. Source Classification Code (SCC): 3-01-030-03		3. SCC Units: TONS
4. Maximum Hourly Rate: 150	5. Maximum Annual Rate: 525,600	6. Estimated Annual Activity Factor: N/A
7. Maximum % Sulfur: N/A	8. Maximum % Ash: N/A	9. Million Btu per SCC Unit: N/A
10. Segment Comment (limit to 200 characters): Maximum Hourly Rate = 150 tons Maximum Annual Rate = 525,600 tons (maximum plant rate)		

Segment Description and Rate: Segment _____ of _____

1. Segment Description (Process/Fuel Type) (limit to 500 characters):		
2. Source Classification Code (SCC):		3. SCC Units:
4. Maximum Hourly Rate:	5. Maximum Annual Rate:	6. Estimated Annual Activity Factor:
7. Maximum % Sulfur:	8. Maximum % Ash:	9. Million Btu per SCC Unit:
10. Segment Comment (limit to 200 characters):		

G. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION
(Regulated Emissions Units -
Emissions-Limited and Preconstruction Review Pollutants Only)

Potential/Fugitive Emissions

1. Pollutant Emitted: PM	2. Total Percent Efficiency of Control:
3. Potential Emissions: 1.03 lb/hour 4.5 tons/year	4. Synthetically Limited? []
5. Range of Estimated Fugitive Emissions: [<input checked="" type="checkbox"/>] 1 [] 2 [] 3 _____ to _____ tons/year	
6. Emission Factor: 0.02 gr/cf Reference: BACT	7. Emissions Method Code: 0
8. Calculation of Emissions (limit to 600 characters): PM = 0.02 gr/cf x 6000 cfm x 60 min/hr x lb/7000 gr = 1.03 lb/hr X 8760 hours x ton/2000 lbs = 4.5 tpy	
9. Pollutant Potential/Fugitive Emissions Comment (limit to 200 characters): There is a potential for fugitive emissions from this plant.	

Allowable Emissions Allowable Emissions 1 of 1

1. Basis for Allowable Emissions Code: Rule	2. Future Effective Date of Allowable Emissions: N/A
3. Requested Allowable Emissions and Units: 1.03 lb/hr	4. Equivalent Allowable Emissions: 1.03 lb/hour 4.5 tons/year
5. Method of Compliance (limit to 60 characters): EPA Method 9	
6. Allowable Emissions Comment (Desc. of Operating Method) (limit to 200 characters): BACT - VE	

**J. EMISSIONS UNIT SUPPLEMENTAL INFORMATION
(Regulated Emissions Units Only)**

Supplemental Requirements

1. Process Flow Diagram <input checked="" type="checkbox"/> Attached, Document ID: Report <input type="checkbox"/> Not Applicable <input type="checkbox"/> Waiver Requested
2. Fuel Analysis or Specification <input type="checkbox"/> Attached, Document ID: _____ <input checked="" type="checkbox"/> Not Applicable <input type="checkbox"/> Waiver Requested
3. Detailed Description of Control Equipment <input type="checkbox"/> Attached, Document ID: _____ <input type="checkbox"/> Not Applicable <input checked="" type="checkbox"/> Waiver Requested Previously submitted.
4. Description of Stack Sampling Facilities <input type="checkbox"/> Attached, Document ID: _____ <input type="checkbox"/> Not Applicable <input checked="" type="checkbox"/> Waiver Requested Previously submitted.
5. Compliance Test Report <input type="checkbox"/> Attached, Document ID: _____ <input type="checkbox"/> Previously submitted, Date: _____ <input checked="" type="checkbox"/> Not Applicable
6. Procedures for Startup and Shutdown <input type="checkbox"/> Attached, Document ID: _____ <input checked="" type="checkbox"/> Not Applicable <input type="checkbox"/> Waiver Requested
7. Operation and Maintenance Plan <input type="checkbox"/> Attached, Document ID: _____ <input checked="" type="checkbox"/> Not Applicable <input type="checkbox"/> Waiver Requested
8. Supplemental Information for Construction Permit Application <input checked="" type="checkbox"/> Attached, Document ID: Report <input type="checkbox"/> Not Applicable
9. Other Information Required by Rule or Statute <input type="checkbox"/> Attached, Document ID: _____ <input checked="" type="checkbox"/> Not Applicable
10. Supplemental Requirements Comment:

Additional Supplemental Requirements for Title V Air Operation Permit Applications

11. Alternative Methods of Operation [] Attached, Document ID: _____ [X] Not Applicable
12. Alternative Modes of Operation (Emissions Trading) [] Attached, Document ID: _____ [X] Not Applicable
13. Identification of Additional Applicable Requirements [] Attached, Document ID: _____ [X] Not Applicable
14. Compliance Assurance Monitoring Plan [] Attached, Document ID: _____ [X] Not Applicable
15. Acid Rain Part Application (Hard-copy Required) [] Acid Rain Part - Phase II (Form No. 62-210.900(1)(a)) Attached, Document ID: _____ [] Repowering Extension Plan (Form No. 62-210.900(1)(a)1.) Attached, Document ID: _____ [] New Unit Exemption (Form No. 62-210.900(1)(a)2.) Attached, Document ID: _____ [] Retired Unit Exemption (Form No. 62-210.900(1)(a)3.) Attached, Document ID: _____ [] Phase II NOx Compliance Plan (Form No. 62-210.900(1)(a)4.) Attached, Document ID: _____ [] Phase NOx Averaging Plan (Form No. 62-210.900(1)(a)5.) Attached, Document ID: _____ [X] Not Applicable

REPORT IN SUPPORT OF PSD APPLICATION
FOR
INCREASE IN GRANULAR MAP/DAP PRODUCTION

U.S. AGRI-CHEMICALS CORPORATION
FT. MEADE FACILITY

REPORT PREPARED BY
KOOGLER & ASSOCIATES
4014 NW 13TH STREET
GAINESVILLE, FLORIDA
(352) 377-5822

MAY, 2001

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1.0 INTRODUCTION

US Agri-Chemicals (USAC) proposes to increase the production rate of the granular MAP/DAP Plant from 50 tons per hour (tph) to 60 tph at its existing chemical complex at Ft. Meade.

The facility manufactures sulfuric acid, phosphoric acid and ammoniated fertilizers. The existing MAP/DAP Plant can make prilled or granular product, depending on market demand. It is expected that only some pumps and piping may be changed, as necessary, to accomplish the production increase. No major equipment changes are proposed. The increase in granular MAP/DAP production rate will result in an increase in the annual throughput rate of the MAP/DAP storage and loadout system, currently permitted to handle 150 tph of product. Some phosphoric acid normally routed to the USAC Bartow facility will be supplied to the MAP/DAP plant, to accommodate market demand and operation conditions of the Bartow and Ft. Meade facilities. No other emission units will be affected by the proposed project. Plant maps and process flow diagrams are presented in Figures 1-1 to 1-5.

The proposed granular MAP/DAP Plant production increase is expected to result in a significant increase, as defined in Rule 62-212, Florida Administrative Code (FAC), in the emissions of fluorides and particulate matter (see Tables 1-1 and 1-2). This technical evaluation addresses rule applicability, Best Available Control Technology (BACT) and air impact analyses pursuant to Rule 62-212, FAC.

USAC proposes the continued use of the existing venturi scrubbers as BACT for the MAP/DAP Plant with a fluoride emissions limit of 0.037 lb/ton P₂O₅ input; and, a particulate matter emissions limit of 0.17 lb/ton product. These emission limits represent some of the most stringent limitations imposed on MAP/DAP Plants in the US.

FIGURE I-1
SITE LOCATION MAP

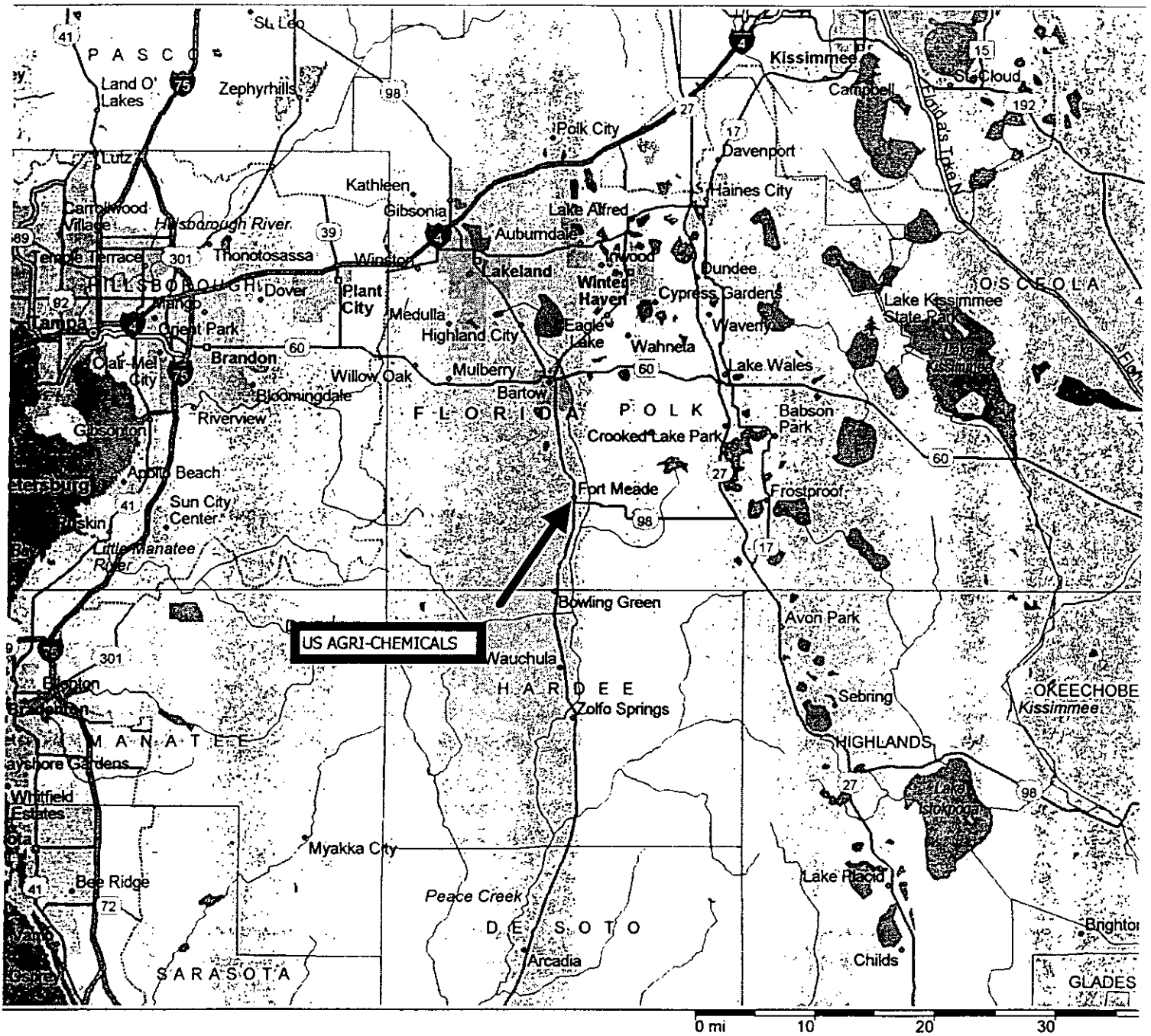


FIGURE 1-2
AREA LOCATION MAP

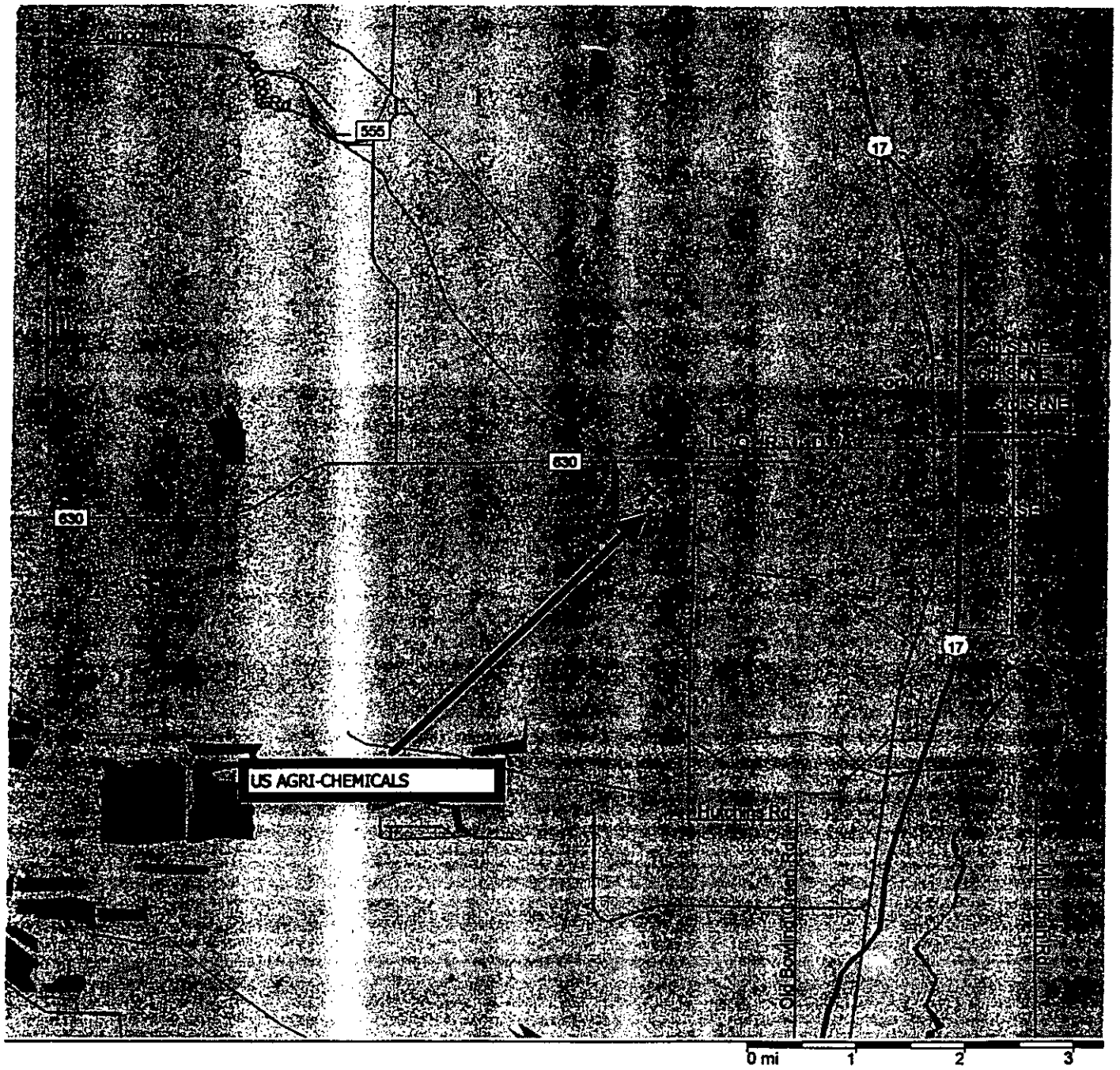


FIGURE 1-3

PLOT PLAN

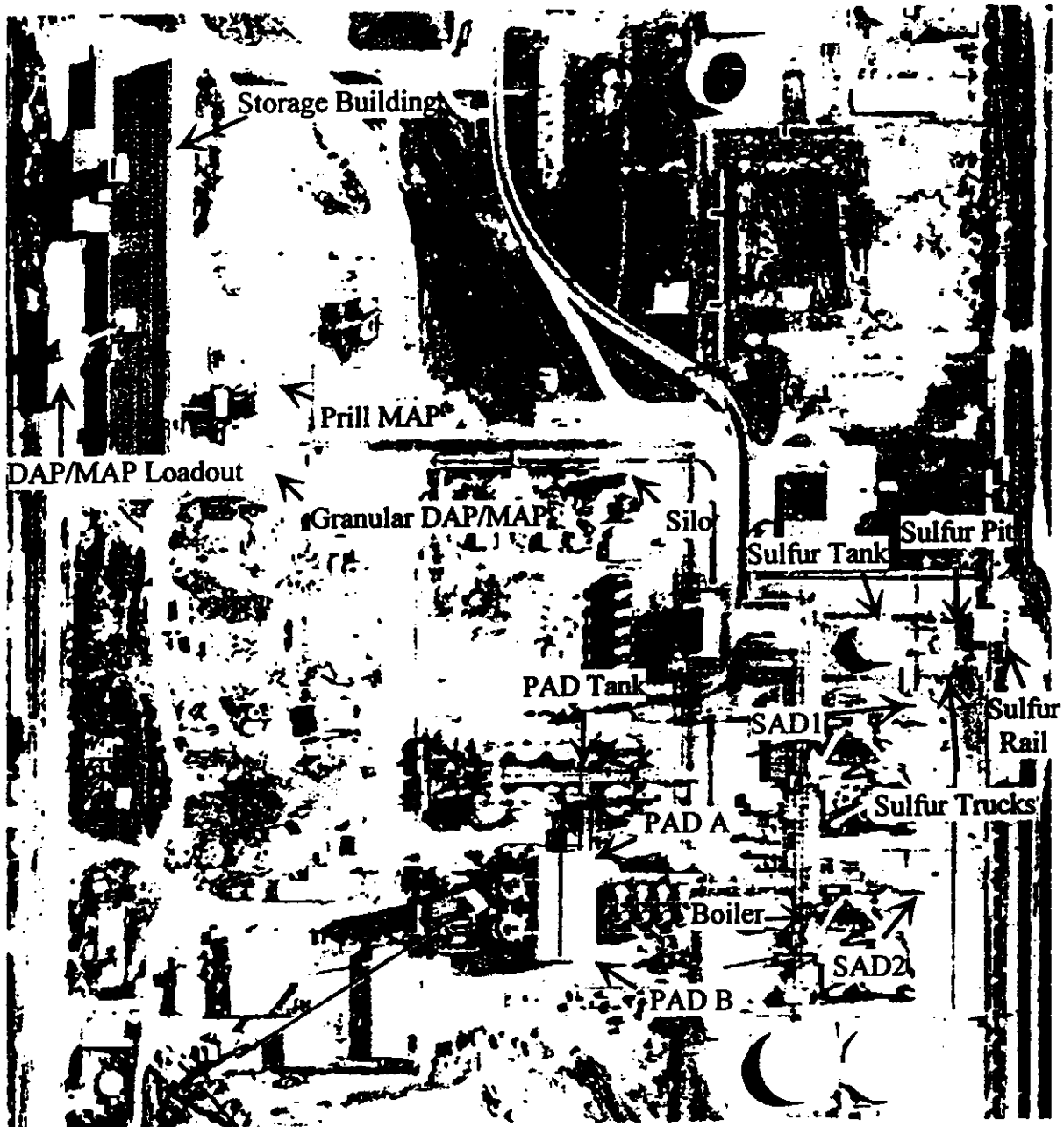
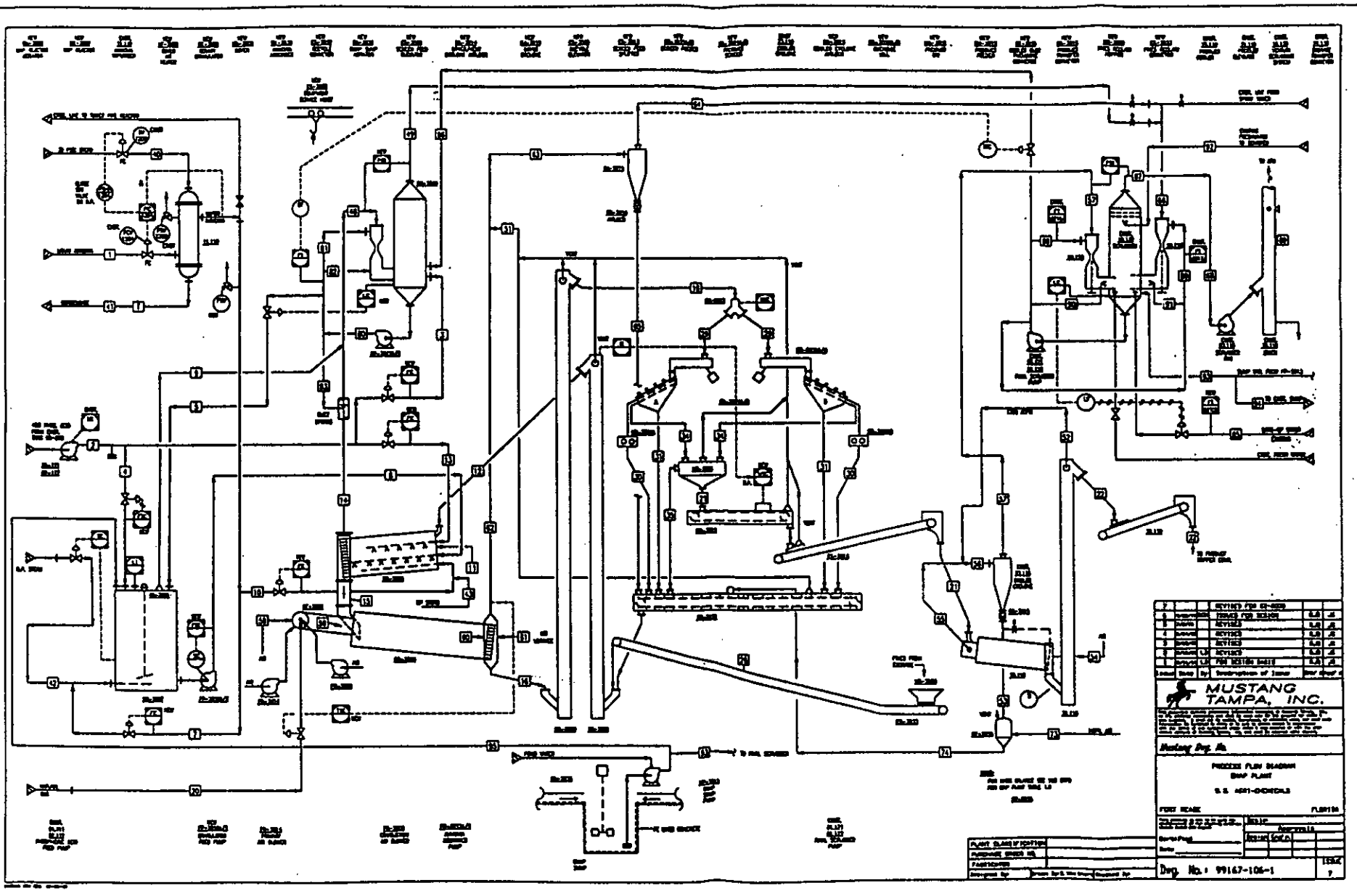


FIGURE 1-4

PROCESS FLOW DIAGRAM - GRANULAR MAP/DAP PLANT



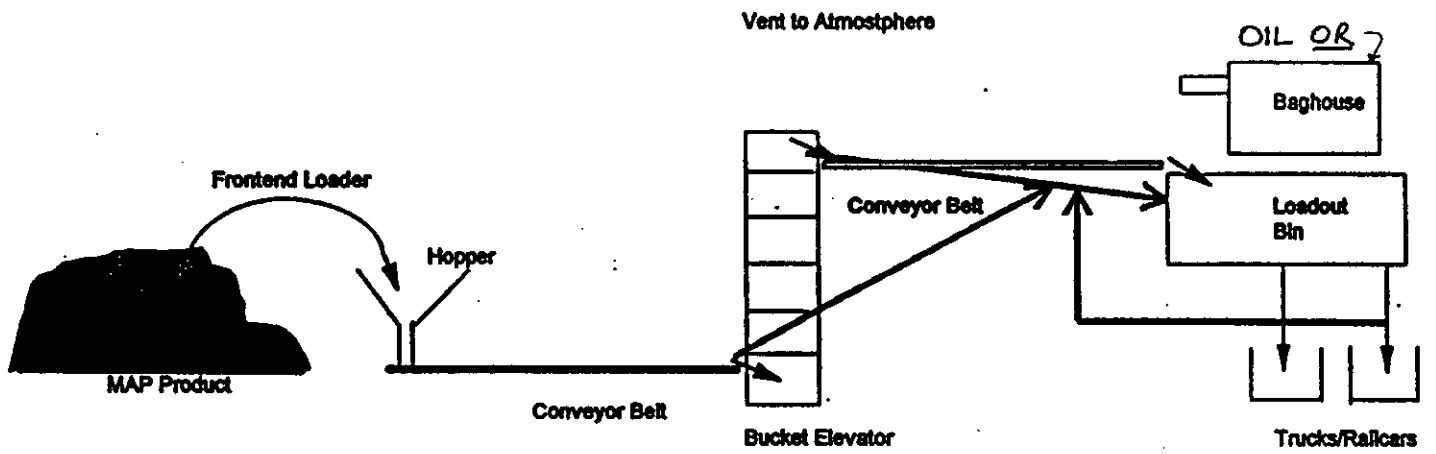
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98	REVISED	1.0	1.0
99	REVISED	1.0	1.0
100	REVISED	1.0	1.0

MUSTANG TAMPA, INC.
 PROCESS FLOW DIAGRAM
 MAP PLANT
 U.S. 4001-000000

PROJECT NAME: _____ FURNISH: _____
 CLIENT: _____
 DRAWING NO.: 99167-106-1

FIGURE 1-5

MAP/DAP LOADOUT PROCESS FLOW DIAGRAM



— Gas flow
→ Material flow

U.S. Agri-Chemicals Corporation
MAP Plant
FL. Meade, Florida
Loadout Process Flow Diagram
dwg: LOADFLOW

TABLE 1-1
SUMMARY OF EMISSION CHANGES

Emission Unit	Estimated Emissions (1)					
	Fluorides		Particulate Matter		Nitrogen Oxides	
	lb/hr	tpy	lb/hr	tpy	lb/hr	tpy
Actual Emissions:						
MAP/DAP Plant	0.52	1.86	6.98	25.0	2.0	7.2
Loadout	NA	NA	1.03	3.7	NA	NA
Proposed Emissions:						
MAP/DAP Plant	1.18	5.2	10.2	44.7	4.2	18.4
Loadout	NA	NA	1.03	4.5	NA	NA
Net Emissions		3.3		20.5		11.2
PSD Significant Level		3		15		40
PSD Review Required?		YES		YES		NO

NOTES:

(1) See emission calculations presented in Appendix A.

2.0 RULE REVIEW

The following are the state and federal air regulatory requirements that apply to new or modified sources subject to a 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 Protection (FDEP) 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 40CFR52.21, Prevention of Significant Deterioration of Air Quality. The state of Florida has adopted PSD regulations that are essentially identical to the federal regulations and are contained in Chapter 62-212 of the Florida Administration Code (FAC). All new major sources and major modifications to existing sources 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 any one of the 28 specific source categories (see Table 2-1) 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 2-2).

2.1 Ambient Air Quality Standards

The EPA and the state of Florida have developed/adopted ambient air quality standards, AAQS (see Table 2-3). 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 is usually subject to more stringent air permitting requirements. Projects proposed in attainment areas are subject to air permit requirements that ensure continued attainment status.

2.2 PSD Increments

In promulgating the 1977 CAA Amendments, Congress quantified concentration increases above an air quality baseline concentration levels for sulfur dioxide (SO₂) and particulate matter (PM/TSP) which would constitute significant deterioration. The size of

the allowable increment depends on the classification of the area in which the source would be located or have an impact. Class I areas include specific national parks, wilderness areas and memorial parks. Class II areas are all areas not designated as Class I areas and Class III areas are industrial areas in which greater deterioration than Class II areas would be allowed. There are no designated Class III areas in Florida.

In 1988, EPA promulgated PSD regulations for nitrogen oxides (NO_x) and PSD increments for nitrogen dioxide (NO₂) concentrations. FDEP adopted the NO₂ increments in July 1990 (see Table 2-4 for PSD increments).

In the PSD regulations, as amended August 7, 1980, baseline concentration is defined as the ambient concentration level for a given pollutant which exists in the baseline area at the time of the applicable baseline date and includes the actual emissions representative of facilities in existence on the applicable baseline date, and the allowable emissions of major stationary facilities which commenced construction before January 6, 1975, but were not in operation by the applicable baseline date.

The emissions not included in the baseline concentration and, therefore, affecting PSD increment consumption are the actual emissions from any major stationary facility on which construction commenced after January 6, 1975, for SO₂ and PM (TSP) and February 8, 1988, for NO₂, and the actual emission increases and decreases at any stationary facility occurring after the baseline date.

2.3 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 62-212, 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 that 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 analyzes if 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 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 applicant 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.

2.4 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, is required. Existing ambient air data for a location in the vicinity of the proposed project is acceptable if the data meet FDEP 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."

FDEP 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 minimus levels (see Table 2-2).

2.5 Ambient Impact Analysis

A source 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 period is used for the evaluation of the highest, second-highest short-term concentrations for comparison to AAQS or PSD increments. The term "highest, second-highest" refers to the highest of the second-highest concentrations at all receptors. The second-highest concentration is considered because short-term AAQS specify that the standard should 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.

2.6 Additional Impact Analysis

The PSD rules also require analyses of the impairment to visibility and the impact on soils and vegetation resulting from a 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. The National Park Service also requires an Air Quality Related Values (AQRV) Analysis for a Class I area.

2.7 Good Engineering Practice Stack Height

In accordance with Chapter 62, FAC, the degree of emission limitation required for control of any pollutant should not be affected by a stack height that exceeds GEP, or any other dispersion technique. GEP stack height is defined as the greater of:

1. 65 meters (m), or
2. A height established by applying the formula:

$$H_g = H + 1.5 L$$

where:

H_g - GEP stack height,

H - Height of the structure or nearby structure, and

L - Lesser dimension, height or projected width of nearby structure(s)

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.

2.8 Rule Applicability

The proposed project at USAC, as previously described herein, is classified as a major modification to a major source subject to both state and federal regulations as set forth in Rule 62-212, FAC.

The facility is located in an area classified as attainment for each of the regulated air pollutants in accordance with Rule 62-275, FAC.

The proposed project will result in significant increases in the emissions of fluorides and particulate matter, as defined in Rule 62-212, FAC; and, will therefore be subject to PSD preconstruction review requirements.

The PSD review 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.

TABLE 2-1

MAJOR FACILITY CATEGORIES

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 2-2

REGULATED AIR POLLUTANTS - SIGNIFICANT EMISSION RATES

Pollutant	Significant Emission Rate tons/yr	De-Minimus Ambient Impacts ug/m ³
CO	100	575 (8-hour)
NOx	40	14 (NO ₂ , Annual)
SO ₂	40	13 (24-hour)
Ozone	40 (VOC)	-
PM	25	10 (24-hour)
PM10	15	10 (24-hour)
TRS (including H ₂ S)	10	0.2 (1-hour)
H ₂ SO ₄ mist	7	-
Fluorides	3	0.25 (24-hour)
MSW Combustor:		
Organics (Dioxins/Furans)	3.5E-6	
Metals (PM)	15	
Acid Gases (SO ₂ /HCl)	40	
MSW Landfill Gases (NMOC)	50	
	<u>pounds/yr</u>	
Lead	1200	0.1 (Quarterly avg)
Mercury	200	0.25 (24-hour)

TABLE 2-3
 AMBIENT AIR QUALITY STANDARDS

<u>Pollutant</u>	<u>FDEP (State)</u>		<u>USEPA (National)</u>			
	<u>ug/m³</u>	<u>PPM</u>	<u>Primary</u>		<u>Secondary</u>	
	<u>ug/m³</u>	<u>PPM</u>	<u>ug/m³</u>	<u>PPM</u>	<u>ug/m³</u>	<u>PPM</u>
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	-	-
PM10, 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	0.053	100	-	100	-
Lead, Quarterly	1.5	-	1.5	-	1.5	-

TABLE 2-4
PSD INCREMENTS

Pollutant	<u>Allowable PSD Increments (State/National)</u>		
	Class I ug/m ³	Class II ug/m ³	Class III ug/m ³
PM10, Annual	4	17	34
24-hour	8	30	60
SO ₂ , Annual	2	20	40
24-hour	5	91	182
3-hour	25	512	700
NO ₂ , Annual	2.5	25	50

3.0 BEST AVAILABLE CONTROL TECHNOLOGY

As indicated in the rule applicability in the permit application, the proposed project is subject to PSD review requirements pursuant to Rule 62-212, FAC. A Best Available Control Technology (BACT) evaluation is presented below for fluoride emissions from the proposed project.

USAC proposes about a 20 percent increase in the production rate of the existing granular MAP/DAP Plant from 50 tph to 60 tph. The proposed maximum production rate of 60 tph MAP corresponds to 31.8 tph P₂O₅ input. No changes are proposed to the existing air pollution control equipment consisting of venturi scrubbers, as shown on the process flow diagrams. The available compliance test information indicates that the plant is in compliance with some of the most stringent emission limits imposed on granular MAP/DAP Plants.

3.1 Emission Standards for MAP/DAP Plants

Federal New Source Performance Standards (NSPS) for DAP plants, codified in 40 CFR 60, Subpart V, limit fluoride emissions to no more than 0.06 pounds per ton P₂O₅ input. For the purposes of the standard, the affected facility includes any combination of reactors, granulators, dryers, coolers, screens and mills.

More recently, additional federal standards were promulgated under 40 CFR 63 Subpart BB, National Emission Standards for Hazardous Air Pollutants From Phosphate Fertilizer Production Plants. The fluoride emission standard under these NESHAPs for existing MAP/DAP plants is identical to that under NSPS, at 0.06 lb/ton P₂O₅ feed. The fluoride emission standard for new plants is limited to 0.058 lb/ton P₂O₅ feed. However, these standards apply only to major sources of HAPs. As USAC is not a major source of HAPs, these standards do not apply to the proposed project.

3.2 Control Technologies

The most common pollution control equipment used to control fluorides from a MAP/DAP plant is a wet scrubber. There is some variation in the wet scrubbing system configurations from plant to plant, often depending on the preference of the plant designers and suppliers. Particulate matter emissions are most often controlled using venturi scrubbers.

The use of fresh water as scrubbing medium, in place of pond water, would result in increased capture of gaseous fluorides. However, this option is not possible given the current severe water restrictions implemented in the area by the Water Management District.

The existing USAC scrubbing system consists of venturi scrubbers. They are proven with the industry as they operate with low maintenance/repair costs, and increased on-line operation.

Packed scrubbers offer superior gaseous fluoride removal, however the industry experience indicates that the packing tends to plug frequently causing maintenance problems. The resulting plant down time cuts into the overall plant efficiency and productivity. Consequently, the use of packed scrubbers, in place of the existing venturi scrubbers, is not considered for this application. However, the use of packed scrubbers, in series with the existing venturi scrubbers can be evaluated.

The cost associated with the use of a cross-flow packed scrubber, based on a recent cost proposal for a similar application, is estimated below.

Total Capital Cost:	With Equipment Cost of \$190,000	
	Purchased Equip. Cost (1.18, EPA factor)	= \$ 224,200
	Installation Cost (0.85 PEC, EPA factor)	= \$ 190,570
	Indirect Cost (0.35 PEC, EPA factor)	= \$ 78,470
	Total Capital Cost	= \$ 493,240
Direct Annual Cost	Labor (0.5 hr/shift, EPA factor)	= \$ 10,000
	Maintenance (1.0 hr/shift, EPA factor)	= \$ 20,000
	Electricity (pump)	= \$ 30,000
	Total DC	= \$ 60,000
Indirect Annual Cost	(0.1715 TCI, EPA combined factor)	= \$ 84,600
	(includes capital recovery at 15 year life, 10% int.)	
Total Annual Cost	(DC + IC)	= \$ 144,600

Based on the above annual cost, the cost of fluoride control can be estimated with a conservative assumption that all fluorides from the venturi scrubber, of 5.2 tpy, are captured.

Annual Cost of fluoride control (\$144,600 / 5.2 tpy) = \$ 27,800/ton

This alternative is rejected as BACT based on the above control cost which far exceeds \$10,000 per ton fluoride controlled.

Another alternative would be the replacement of the existing tail-gas venturi scrubber with a packed scrubber. The corresponding annual costs are presented below.

Previous Total Capital Cost (without extra ducting)	= \$ 493,240
Added Ducting and Production Loss Cost	= \$ 500,000
Revised Total Capital Cost	= \$ 993,240

Revised Indirect Cost (use EPA factor of 0.1715 x TCC)	= \$ 170,340
Direct costs (assumed to be the same as above)	= \$ 60,000
Annual Cost (DC+IC)	= \$ 230,000

To determine the cost of fluoride control, the total annual quantity of fluorides removed by the new scrubber needs to be calculated. As the fluoride loading to the scrubber has not been measured, it has to be estimated. In reality, it is expected that the first venturi controls most of the fluorides with the second venturi adding a polishing step with minimal fluorides removal. However, for the sake of this analysis it is assumed that that the R/G venturi scrubber controls 60 percent of the fluorides and that the tail gas venturi scrubber removes an additional 20 percent of the fluorides (based on an expectation of an 80 percent overall control efficiency). This arrangement is practical as the R/G venturi would reduce the particulate matter going to a packed scrubber and avoid frequent plugging of the packed section. The tail-gas scrubber inlet loading can be back calculated as follows:

Projected annual fluoride emissions = 5.2 tpy

Potential additional F control by tail-gas (TG) scrubber being replaced (conservative assumption of 60% by R/G and 20% by TG) = 20 %

Estimated fluorides to tail-gas scrubber can be estimated as follows:

$F = 5.2 \text{ tpy} + (5.2 / (1 - 0.8)) \times (0.8 \times 0.2 / (0.6 + 0.2))$ = 10.4 tpy

The total amount of fluorides that would be expected to be controlled by a new packed cross-flow scrubber can be estimated based on a projected control efficiency of 99%.

Fluorides controlled = 10.4 tpy x 0.99 = 10.3 tpy

The resulting cost of control can be estimated as follows:

Control Cost = \$230,000 / 10.3 tpy = \$ 22,300
(\$/ton fluorides removed)

The above cost also exceed the presumed BACT guideline cost of around \$10,000 per ton of fluorides removed and, therefore, this alternative is also rejected as BACT.

This BACT analysis also notes that the subject plant has a more restrictive fluorides emission limit than other recently permitted facilities that use packed scrubbers for fluorides control (refer to PSD-FL-246: Farmland; and PSD-FL-255: Cargill).

Treated water recirculation is rejected as BACT based on costs evaluated for a similar project for a lined pond and lime treatment that exceed even the costs associated with a packed scrubber. Further, the treated water containment integrity and storm contingencies can add considerable unnecessary environmental liability.

It should be noted that the historical fluoride emissions measurements indicate that the current scrubber configuration results in emissions of fluorides well below the NSPS. A summary of recent emissions measurements at USAC is included along with the emissions calculations in Appendix A. Furthermore, it is our understanding that the current fluoride emission rate, of 0.037 lb/ton P₂O₅ input, is the most stringent limit imposed by FDEP on a MAP/DAP Plant.

For particulate matter, the use of venturi scrubbers has consistently been considered BACT by FDEP for fertilizer plants. As USAC proposes to continue the use of the existing venturi scrubbers, no further discussion is presented herein. Furthermore, it is our understanding that the current particulate matter emission rate, of 0.17 lb/ton product, is the most stringent limit imposed by FDEP on a MAP/DAP Plant.

Particulate matter emissions from the storage and loadout system are controlled by a baghouse or by oil (dust suppressant). As the use of a baghouse or dust suppressant has consistently been considered BACT by FDEP for material handling operations, no further discussion is presented herein.

3.3 BACT Conclusion

Based on the above discussion, USAC proposes the continued use of the existing venturi scrubbers as BACT and will limit fluoride emissions from the MAP/DAP Plant to 0.037 lb/ton P₂O₅ input; limit particulate matter emissions to 0.17 lb/ton product and, limit visible emissions to 15 percent opacity. BACT for the particulate matter emissions from the storage and loadout system is reflected by an opacity limit of 5 percent.

4.0 AIR IMPACTS ANALYSIS

An ambient air standards analysis is required for fluorides and particulate matter as there are applicable particulate matter ambient air standards and applicable monitoring thresholds for fluorides.

4.1 Significant Impact Analysis

The fluoride and particulate matter emission rates used for air quality modeling purposes for Significant Impact Analysis (SIA) represent the proposed net increase in the emission rate associated with the proposed project. Table 4-1 contains modeling input parameters used in the ambient air quality impacts analysis.

The SIA was conducted using the Industrial Source Complex-Short Term air quality model, Version 00101 (ISC-ST3), in accordance with guidelines established by EPA and published in the document, Guideline for Air Quality Modeling. The meteorological data used with the model were for Tampa, Florida and represented the period 1987-1991.

The maximum allowable federally enforceable emissions from the MAP/DAP Plant and the product storage and loadout system were modeled in the SIA. The maximum allowable current emission rates were represented as a negative input while the proposed emission rates were represented as positive inputs to the model. Changes and updates to the stack characteristics were also included.

The SIA modeling included discrete receptors at the facility property boundary and additional receptors established by the polar grid system extending to 10 kilometers from the plant. The discrete receptors were placed along the property boundary at 100 meter intervals. Fourteen sets of receptor rings were placed at distances ranging from about 500 to 10,000 meters from the plant with receptors placed at 10 degree intervals from 10° to 360° on each receptor ring, with the exclusion of receptors within property boundary. The downwind receptor distances were selected in order to provide a higher concentration of receptors closer to the source where the maximum impacts were expected. Receptor locations are shown in Figure 4-1.

The results of the SIA modeling, summarized in Table 4-2, demonstrate that the maximum predicted air impact of the fluorides and particulate matter emissions from the proposed project are below the 24-hour de-minimus levels; below the significant levels for the 24-hour and annual periods for the Class II area; and, below the significant level for the Class I area. Based on the results of the SIA, additional modeling was not required for the proposed project.

FIGURE 4-1

MODELING RECEPTOR LOCATIONS

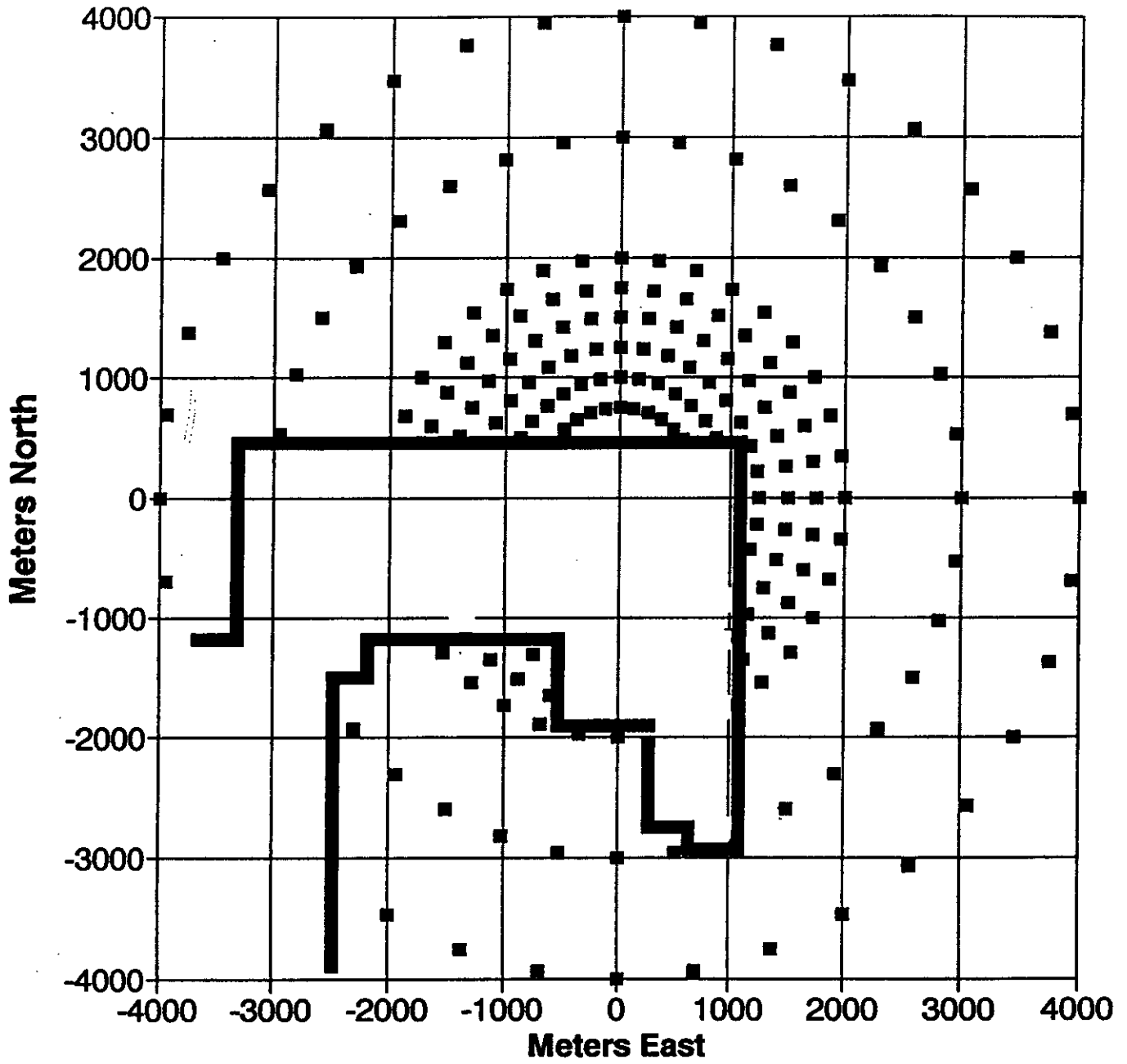


TABLE 4-1
AIR QUALITY MODELING PARAMETERS
MAP/DAP PLANT

<u>Emission Unit</u>	<u>Stack</u>		<u>Stack Gas</u>		<u>Emissions</u> (g/s)
	Ht (m)	Dia (m)	Vel (mps)	Temp (°K)	
<u>Particulate Matter</u>					
Tower (1)	21.95	2.74	14.37	332	3.02
Tower (2)	41.30	2.05	15.81	338	3.02
Loadout (3)	15.24	0.43	14.40	300	0.54
Loadout (4)	15.24	0.37	26.90	300	0.54
<u>Fluorides</u>					
Tower (5)	41.30	2.05	15.81	338	0.123
Tower (6)	41.30	2.05	15.81	338	0.148

NOTES:

- (1) This worst-case conditions reflect plant in prilled product operation as modeled before.
- (2) The worst-case conditions reflect plant in prilled product operation based on stack parameters as proposed.
- (3) The worst-case conditions modeled reflect loadout operation as modeled before.
- (4) The worst-case conditions modeled reflect loadout operation based on stack parameters as proposed.
- (5) The worst-case conditions modeled reflect granular product operation as before.
- (6) The worst-case conditions modeled reflect granular product operation as proposed.
- (7) Building downwash effects, from the EPA approved BPIP program, were included in the modeling.

TABLE 4-2
SUMMARY OF SIGNIFICANT IMPACT ANALYSIS
MAP/DAP PLANT

MET. DATA	CLASS I AREA IMPACTS (1)		CLASS II AREA IMPACTS (1)		
	PM		F	PM	
	24-HR	ANNUAL	24-HR	24-HR	ANNUAL
1987	0	0	0.03	4.08	0
1988	0	0	0.03	3.39	0
1989	0	0	0.03	3.11	0
1990	0	0	0.03	3.50	0
1991	0	0	0.03	4.45	0
MAXIMUM	0	0	0.03	4.45	0
DI-MINIMUS (2)	NA	NA	0.25	10	NA
SIG. IMPACT (2)	0.3	0.2	NA	5	1

NOTE:

- (1) The impacts represent the highest-high impact.
- (2) As defined in Rule 62-212, FAC.
- (3) The impacts are based on the difference between the plant as modeled before and as proposed (see Table 4-1).

5.0 IMPACTS ON SOILS, VEGETATION AND VISIBILITY

5.1 Impacts on Soils and Vegetation

The U. S. Environmental Protection Agency was directed by Congress to develop primary and secondary ambient air quality standards. The primary standards were to protect human health and the secondary standards were to "... protect the public welfare from any known or anticipated adverse effects of a pollutant."

The public welfare was to include soils, vegetation and visibility.

As a basis for promulgating the air quality standards, EPA undertook studies related to the effects of all major air pollutants and published criteria documents summarizing the results of the studies. The studies included in the criteria documents were related to both acute and chronic effects of air pollutants. Based on the results of these studies, the criteria documents recommended air pollutant concentration limits for various periods of time that would protect against both chronic and acute effects of air pollutants with a reasonable margin of safety.

The air quality modeling that has been conducted as a requirement for the PSD application demonstrates that the levels of fluorides and particulate matter expected in the vicinity of the proposed project are below the ambient air quality standards. In fact, the maximum predicted long term impacts based on the project as modeled are zero. As a result, it is reasonable to conclude that there will be no adverse effect to the soils, vegetation or visibility of the area.

USAC's Ft. Meade plant 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 that determine the terrestrial communities of the region.

The land in the vicinity of the plant supports various plant communities. 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 plant. As a result, no adverse impacts from the proposed project are expected on the soils and vegetation in the vicinity of the facility.

5.2 Growth Relate Impacts

The proposed project will require no increase in personnel to operate the facility. Also, an increase in traffic due is not expected, and any changes will likely 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.

5.3 Visibility Impacts

The proposed project will result in an increase in air emissions and therefore has the potential for adverse impacts on visibility.

A screening approach suggested by EPA (Workbook for Plume Visual Impact Screening and Analysis, 1988) and computerized in a model referred to as VISCREEN was used for the analysis. The emissions of particulate matter were input to the model. The VISCREEN - Level I modeling results, presented in Table 5-1, indicate that there will be no adverse visibility impacts from the proposed project.

5.4 Impacts on Air Quality Related Values for the Class I Area

The analysis addressed in this section addresses the review of the impact of increased emissions on air quality related values associated with the Chassahowitzka Wildlife Refuge, a Class I area located in excess of 100 kilometers northwest of the USAC Ft. Meade facility.

Given that the maximum predicted Class I area impacts based on the ISC3 modeling are zero, no adverse impact to the Class I area vegetation, soils, wildlife or visibility are expected.

A regional haze analysis was performed using the maximum predicted particulate matter impacts based on the NPS protocol, except using ISC3 results. The results of the regional haze analysis, presented in Table 5-2, indicate that no adverse visibility impacts are expected as a result of the proposed project.

TABLE 5-1

VISIBILITY SCREENING RESULTS

Source: Granular MAP/DAP Plant
 Class I Area: Chass.

Level-1 Screening Input Emissions for:

Particulates	3.56	G	/S
NOx (as NO2)	0.53	G	/S
Primary NO2	.00	G	/S
Soot	.00	G	/S
Primary SO4	.00	G	/S

Default Particle Characteristics Assumed.

Transport Scenario Specifications:

Background Ozone:	.04 ppm
Background Visual Range:	65.00 km
Source-Observer Distance:	110.00 km
Min. Source-Class I Distance:	110.00 km
Max. Source-Class I Distance:	130.00 km
Plume-Source-Observer Angle:	11.25 degrees
Stability:	6
Wind Speed:	1.00 m/s

R E S U L T S

Asterisks (*) indicate plume impacts that exceed screening criteria

Maximum Visual Impacts INSIDE Class I Area Screening Criteria ARE NOT Exceeded

Backgrnd	Theta	Azi	Distance	Alpha	Delta E		Contrast	
					Crit	Plume	Crit	Plume
SKY	10.	84.	110.0	84.	2.00	.123	.05	.002
SKY	140.	84.	110.0	84.	2.00	.022	.05	-.001
TERRAIN	10.	84.	110.0	84.	2.00	.058	.05	.001
TERRAIN	140.	84.	110.0	84.	2.00	.012	.05	.000

Maximum Visual Impacts OUTSIDE Class I Area Screening Criteria ARE NOT Exceeded

Backgrnd	Theta	Azi	Distance	Alpha	Delta E		Contrast	
					Crit	Plume	Crit	Plume
SKY	10.	30.	83.4	139.	2.00	.151	.05	.002
SKY	140.	30.	83.4	139.	2.00	.026	.05	-.001
TERRAIN	10.	50.	96.1	119.	2.00	.074	.05	.001
TERRAIN	140.	50.	96.1	119.	2.00	.017	.05	.001

TABLE 5-2
REGIONAL HAZE ANALYSIS

Example Calculation

Background from the 20% Cleanest Days	
SO ₂ =	0.00329 ppm = 8.62 ug/m ³
SO ₄ = SO ₂ * 1.5 =	12.92 ug/m ³
(NH ₄)SO ₄ = 1.1875 * SO ₄ =	15.35 ug/m ³
NO ₂ =	0.0085 ppm = 16 ug/m ³
NO ₃ = 1.348 * NO ₂ =	21.55
(NH ₄) ₂ NO ₃ = 1.29 * NO ₃ =	27.80 ug/m ³
(NH ₄)SO ₄ + (NH ₄) ₂ NO ₃ =	43.15 ug/m ³
PM ₁₀ =	22.5 22.5 ug/m ³
Assume 90% RH (RH =	5
Background extinction =	b back 238.26 Mm ⁻¹

Source	Impact
	ug/m ³
NO ₂	0.0000
SO ₂	0.0000
H ₂ SO ₄ =	0.00000
SO ₄ = SO ₂ * 1.5 =	0
(NH ₄) ₂ SO ₄ = 1.375 * SO ₄ =	0.0000 ug/m ³
(SO ₂ +H ₂ SO ₄)*1.5*1.375 =	2.14 ug/m ³
NO ₃ = 1.348 * NO ₂ =	0.0000 ug/m ³
(NH ₄)NO ₃ = 1.29 * NO ₃ =	0.0000 ug/m ³
PM ₁₀ =	0.1 ug/m ³
Source extinction =	b source 0.100 Mm ⁻¹

Change in Deciview

$$Ddv = 10 * \ln (b \text{ back} + b \text{ source} / b \text{ back}) = 0.004 \text{ dv}$$

6.0 GOOD ENGINEERING PRACTICE STACK HEIGHT

The criteria for good engineering practice stack height 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 achieving ambient air quality goals solely through the use of excessive stack heights and air dispersion. The stacks associated with the proposed project are less than 213 feet in height above-grade. This satisfies the good engineering practice (GEP) stack height criteria.

7.0 CONCLUSION

It can be concluded from the information in this report that the proposed increase in the production rate of the Granular MAP/DAP 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 62, FAC.

APPENDIX A - EMISSIONS CALCULATIONS

ACTUAL EMISSION RATES

As there is almost no operating history associated with the granular MAP plant, the actual emissions are projected using the 2001 initial compliance test for the MAP Plant, and based on estimates presented to FDEP on the loadout, as follows:

Unit	Hours Projected	<u>Fluorides</u>		<u>Particulate Matter</u>		<u>Nitrogen Oxides</u>	
		lb/hr	tpy	lb/hr	tpy	lb/hr	tpy
MAP Plant	7166	0.52	1.86	6.98	25.0	2.0	7.2
Loadout	7166	NA	NA	1.03	3.7	NA	NA

Note: Tpy emissions are calculated as: lb/hr x hrs/yr / 2000 lbs/ton

ALLOWABLE EMISSION RATES

GMAP/DAP, F	= 31.8 tph P2O5 x 0.037 lb F/ton P2O5 x 8760 hrs/yr x ton/2000 lbs	= 1.18 lb/hr = 5.2 tpy
GMAP/DAP, PM	= 60 tph product x 0.17 lb F/ton product x 8760 hrs/yr x ton/2000 lbs	= 10.2 lb/hr = 44.7 tpy
GMAP/DAP, NOx	= 140 lb/MMCF x 0.03 MMCF/hr x 8760 hrs/yr x ton/2000 lbs	= 4.2 lb/hr = 18.4 tpy
Loadout, PM	= 0.02 gr/cf x 6000 cfm x lb/7000 gr x 60 min/hr x 8760 hrs/yr x ton/2000 lbs	= 1.03 lb/hr = 4.5 tpy

NET EMISSIONS INCREASES

F	= (5.2 - 1.86) tpy = 3.3 tpy (exceeds fluorides PSD significant level of 3 tpy)
PM	= (49.2 - 28.7) tpy = 20.5 tpy (exceeds PM10 PSD significant level of 15 tpy)
NOX	= (18.4 - 7.2) tpy = 11.2 tpy (below NOX PSD significant level of 40 tpy)

Executive Summary

This compliance test report covers U.S. Agri-Chemicals' (USAC) Granular MAP plant at Ft. Meade on 10-Apr-01 Permit No. 1050051-008-AC. The results for the tested unit are as follows:

Emissions		
Permitted	Actual	
0.98	0.52	lbs of fluorides per hour;
0.037	0.021	lbs of fluorides per ton of equivalent P2O5 feed
8.38	6.98	lbs of particulates per hour
0.168	0.148	lbs of particulates per ton of GMAP
15	0.0	% Opacity

Operating conditions

Average			
25.0	Feedrate (tons P2O5/hr)		
47.1	Production rate (tons GMAP/hr)		
Scrubber	Delta P	Flow	Mole Ratio
Tower	8.5	568	1.00
Cooler	12.1	257	NA
NH3 Abs.	3.77	258	0.78

The results of the compliance test above showed that the plant meets the emissions standards.

Test Methods: 1, 2, 4, 5, 9, and 13B. (With modifications approved by FDEP)

THIS DISK CONTAIN PARTICULATE MATTER (PM) AND FLUORINE MODELING FILES FOR THE U. S. AGRICHEMICALS FACILITY IN FT. MEADE, FLORIDA. THESE FILES CONTAIN ISCST3 OF SIGNIFICANT IMPACT ANALYSIS (SIA) FOR CLASS 1 AND 2 AREAS AND BUILDING DOWNWASH PROFILE INPUT PROGRAM (BPIP) FILES.

THE FOLLOWING FILES ARE IN SELF EXTRACTING ARCHIVE FORMAT.

C2-ASI	EXE	135,810	03-29-01	PM CLASS 2 AREA SIA ANALYSIS
C1-ASI	EXE	41,433	03-29-01	PM CLASS 1 AREA SIA ANALYSIS
FLUORINE	EXE	110,802	03-29-01	FLUORINE DEMINIMUS ANALYSIS
BPIP-01	EXE	20,062	03-29-01	BUILDING DOWNWASH CALCULATIONS

TO UNARCHIVE THESE FILES COPY THEM TO A HARD DISK DRIVE AND TYPE THE FILE NAME. FOR EXAMPLE TO UNARCHIVE THE PM ASI CLASS 2 ISCST3 OUTPUT FILES, TYPE:
C2-SIA AND PRESS ENTER.

THE FILES WILL AUTOMATICALLY UNARCHIVE TO THE HARD DISK DRIVE. THESE ARCHIVED FILES CONTAIN THE MODELING AND ANALYSIS FILES IN ASCII FORMAT DESCRIBED AS FOLLOWS:

CLASS 2 AREA IMPACT ANALYSIS:

C2ASI-87	OUT	226,533	03-28-01	IMPACT ANALYSIS FOR 1987
C2ASI-88	OUT	226,533	03-28-01	IMPACT ANALYSIS FOR 1988
C2ASI-89	OUT	226,533	03-28-01	IMPACT ANALYSIS FOR 1989
C2ASI-90	OUT	226,533	03-28-01	IMPACT ANALYSIS FOR 1990
C2ASI-91	OUT	226,533	03-28-01	IMPACT ANALYSIS FOR 1991

CLASS 1 MODELING OF SIGNIFICANT IMPACT ANALYSIS (SIA) FOR CHASSAHOWITZKA NWR CLASS 1 AREAS ARE PROVIDED IN THE FOLLOWING FILES:

C1ASI-87	OUT	40,712	03-28-01	IMPACT ANALYSIS FOR 1987
C1ASI-88	OUT	40,578	03-28-01	IMPACT ANALYSIS FOR 1988
C1ASI-89	OUT	40,593	03-28-01	IMPACT ANALYSIS FOR 1989
C1ASI-90	OUT	40,578	03-28-01	IMPACT ANALYSIS FOR 1990
C1ASI-91	OUT	40,608	03-28-01	IMPACT ANALYSIS FOR 1991

FLUORINE IMPACT ANALYSIS:

FL87	OUT	184,769	03-28-01	IMPACT ANALYSIS FOR 1987
FL88	OUT	184,769	03-28-01	IMPACT ANALYSIS FOR 1988
FL89	OUT	184,769	03-28-01	IMPACT ANALYSIS FOR 1989
FL90	OUT	184,769	03-28-01	IMPACT ANALYSIS FOR 1990
FL91	OUT	184,769	03-28-01	IMPACT ANALYSIS FOR 1991

BUILDING INPUT PROFILE PROGRAM (BPIP) FILES ARE PROVIDED IN BPIP-01.EXE. BUILDING DOWNWASH CALCULATIONS ARE USED IN ALL MODELING. THE FOLLOWING BPIP FILES ARE PROVIDED:

USAC4SIT	INP	2,078	03-27-01	INPUT FOR SRC SOURCES
USAC4SIT	OUT	3,898	03-27-01	OUTPUT FOR SRC SOURCES
USAC4SIT	SUM	49,836	03-27-01	SUMMARY FOR SCR SOURCES

IF THERE ARE ANY QUESTIONS OR IF I MAY PROVIDE ADDITIONAL FILES, OR CLARIFICATION PLEASE CALL ME.

MARCH 30, 2001

MARK KOLETZKE, P.E.
KOOGLER AND ASSOCIATES
(352) 377-5822

APPENDIX B - CURRENT TITLE V PERMIT CONDITIONS



Department of Environmental Protection

Jeb Bush
Governor

Southwest District
3804 Coconut Palm Drive
Tampa, Florida 33619

David B. Struhs
Secretary

Permittee:
U.S. Agri-Chemicals Corporation

FINAL Permit No.: 1050051-003-AV
Facility ID No.: 1050051
SIC Nos.: 28, 2874
Project: Revised Title V Air Operation Permit

Note: The previous Title V Operation Permit is replaced by this version (effective date 5/15/00, DEP Project No.: 006).

This permit is for the operation of the Ft. Meade Chemical Plant facility. This facility is located at 3225 State Road 630 West, Ft. Meade, Polk County; UTM Coordinates: Zone 17, 416.2 km East and 3068.7 km North; Latitude: 27° 44' 40" North and Longitude: 81° 51' 08" West.

STATEMENT OF BASIS: This Title V air operation permit is issued under the provisions of Chapter 403, Florida Statutes (F.S.) and Florida Administrative Code (F.A.C.) Chapters 62-4, 62-210, and 62-213. 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 permitting authority, in accordance with the terms and conditions of this permit.

Referenced attachments made a part of this permit:

Appendix U-1, List of Unregulated Emissions Units and/or Activities
APPENDIX TV-3, TITLE V CONDITIONS (version dated 4/30/99)
APPENDIX SS-1, STACK SAMPLING FACILITIES (version dated 10/7/96)
TABLE 297.310-1, CALIBRATION SCHEDULE (version dated 10/7/96)
FIGURE 1 - SUMMARY REPORT - GASEOUS AND OPACITY EXCESS EMISSION
AND MONITORING SYSTEM PERFORMANCE REPORT (version dated 7/96)

Effective Date of Original Issuance: 09/11/98
Effective Date of Revision: 5/15/00
Renewal Application Due Date: 03/13/03
Expiration Date: 09/09/03

FLORIDA DEPARTMENT OF
ENVIRONMENTAL PROTECTION

W.C. Thomas, P.E.
District Air Program Administrator
Southwest District

Section I. Facility Information.

Subsection A. Facility Description.

This facility consists of two phosphoric acid plants -- A and B Trains, one phosphoric acid plant tank farm, one MAP Plant, one MAP Loadout System, two sulfuric acid plants, one auxiliary boiler, one molten sulfur storage and handling system, and one lime silo.

Also included in this permit are miscellaneous unregulated/insignificant emissions units and/or activities.

Based on the initial Title V permit application received June 13, 1996, this facility is not a major source of hazardous air pollutants (HAPs). Based on the proposed rule "National Emission Standards for Hazardous Air Pollutants Phosphoric Acid Manufacturing and Phosphate Fertilizers Production" (reference Federal Register 12/27/96), this facility may be considered a major source of HAPS, and permitting considerations will be deferred until the promulgation of this MACT rule.

Subsection B. Summary of Emissions Unit ID No(s). and Brief Description(s).

E.U.

<u>ID No.</u>	<u>Brief Description</u>
-005	Phosphoric Acid Plant A-Train
-006	Auxiliary Boiler
-016	Sulfuric Acid Plant #1
-017	Sulfuric Acid Plant #2
-020	Phosphoric Acid Plant B-Train
-021	Phosphoric Acid Plant Tank Farm
-028	Molten Sulfur System -- Sulfur Tank
-029	Molten Sulfur System -- Sulfur Pit
-030	Molten Sulfur System -- Sulfur Rail Unloading
-031	Molten Sulfur System -- Sulfur Truck Unloading
-032	Prilled MAP Plant (includes MAP Storage & Loadout)
-033	Lime Silo
-035	Phosphogypsum Stack

Unregulated Emissions Units and/or Activities

-036 Facility-Wide Fugitive Emissions

Please reference the Permit No., Facility ID No., and appropriate Emissions Unit(s) ID No(s). on all correspondence, test report submittals, applications, etc.

Subsection C. Relevant Documents.

The documents listed below are not a part of this permit; however, they are specifically related to this permitting action.

These documents are provided to the permittee for information purposes only:

Table 1-1, Summary of Air Pollutant Standards and Terms

Table 2-1, Summary of Compliance Requirements

Appendix A-1, Abbreviations, Acronyms, Citations, and Identification Numbers

Appendix H-1, Permit History / ID Number Transfers

These documents are on file with permitting authority:

Initial Title V Permit Application received June 13, 1996

Revised Title V Permit Application received December 17, 1998

Additional Information Request dated February 17, 1998

Additional Information Response received May 15, 1998

Subsection E. This section addresses the following emissions unit(s).

E.U.

ID No. Brief Description

-032 Prilled MAP Plant (includes MAP Storage & Loadout)

The 60 TPH prilled MAP plant is based on the Swift prill tower process. In this process, diluted wet process phosphoric acid is reacted with ammonia vapor in a pipe reactor and sprayed into the top of the tower to produce MAP. Ambient air entering the bottom of the tower removes moisture in the MAP as they fall by gravity to the bottom of the tower. The gas in the tower is evacuated to a venturi scrubber. Product MAP is cooled in a cooler. The gas in the cooler is evacuated to a smaller venturi scrubber. The gas and liquid from both venturi scrubbers enter a cyclonic separator prior to being discharged to the atmosphere via a stack. A portion of the scrubber liquid is used to adjust the concentration of phosphoric acid in the day tank. Fresh water and/or cooling pond water is used to maintain scrubber water balance. The cooler discharges to a transfer system which carry the MAP to a storage building. From the storage building, MAP is loaded into railcars by a loadout system. Dust from the loadout system is controlled by a baghouse.

{Permitting note(s): These emissions units are regulated under Rule 62-212.300, F.A.C., General Preconstruction Review Requirements; Rule 62-212.400, F.A.C., Prevention of Significant Deterioration (PSD); Rule 62-296.320, F.A.C., General Pollutant Emission Limiting Standards and Rule 62-296.403, F.A.C., Phosphate Processing.}

The following conditions apply to the emissions unit(s) listed above:

Essential Potential to Emit (PTE) Parameters

E.1. Capacity.

- a. The production rate of the Prilled MAP Plant shall not exceed 40.9 tons of MAP Product per hour, except as allowed by Condition E.1.b below.
- b. In order to regain the originally intended plant capacity of 60 tons of MAP product per hour, the permittee may conduct a performance test at a rate higher than 40.9 tons of MAP product per hour and up to 60 tons of MAP product per hour by notifying the Department at least 15 days in advance of the special test. The plant may be operated at the higher rate for only seven consecutive days and then must resume operation at no higher than 40.9 tons of MAP product per hour. Upon written approval of the performance test by the Department, which shall include a determination that the plant will be able to meet the limits of conditions E.2, E.3 and E.4, the plant will be authorized to operate at a rate up to and including the rate experienced during the performance test. In the process of regaining the originally intended capacity of 60 tons of MAP product per hour, the permittee shall not be required to undergo another PSD review and BACT determination for PM/PM10 under Rule 62-212.400, F.A.C.

or another BACT review for fluorides under Rule 62-296.403, F.A.C., unless the permittee submits an application to increase the plant's maximum operating capacity above 60 tons of MAP product per hour.

[Rule 62-4.160(2), F.A.C. and Rule 62-210.200, F.A.C., Definitions - (PTE), Air Construction permit AC53-260190/PSD-FL-222]

Emission Limitations and Standards

E.2. Particulate matter(PM)/PM₁₀ emissions from the Prilled MAP Plant scrubber stack shall not exceed any of the following:

- a. 0.4 pounds per ton of MAP product;
- b. 16.4 pounds per hour;
- c. 71.7 tons per year.

[Air Construction permit AC53-260190/PSD-FL-222]

{Permitting Note: Emission limits based on 40.9 tons per hour of MAP product.}

E.3. Fluoride emissions from the Prilled MAP Plant scrubber stack shall not exceed any of the following:

- a. 0.019 pounds per ton of P₂O₅ input;
- b. 0.39 pounds per hour;
- c. 1.7 tons per year.

[Air Construction permit AC53-260190/PSD-FL-222]

{Permitting Note: Emission limits based on 20.5 tons per hour P₂O₅ input.}

E.4. Visible emissions from the Prilled MAP Plant scrubber stack shall not exceed 15% opacity.

[Air Construction permit AC53-260190/PSD-FL-222]

E.5. Visible emissions from the Prilled MAP Plant Loadout baghouse shall not exceed 5% opacity.

[Air Construction permit AC53-260190/PSD-FL-222]

Test Methods and Procedures

E.6. The Prilled MAP Plant scrubber stack shall be tested for the following pollutants annually, on or during the 60 day period prior to December 30.

- a. total fluorides;
- b. PM/PM₁₀;
- c. visible emissions.

[Rules 62-297.310(7)(a)4, F.A.C., and Air Construction Permit AC53-260190/PSD-FL-222]

E.7. The Prilled MAP Plant Loadout baghouse shall be tested for visible emissions annually on or during the 60 day period prior to December 30.

[Rules 62-297.310(7)(a)4, F.A.C., and Air Construction Permit AC53-260190/PSD-FL-222]

E.8. Compliance with the emission limitations of Conditions E.6 and E.7 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 Rule 62-297, F.A.C. The actual production rate shall be specified in each test report. Failure to include the actual production rate in the report may invalidate the test.

[Rule 62-297, F.A.C., Air Construction Permit AC53-260190/PSD-FL-222]

E.9. The Department's Bureau of Air Regulation Office in Tallahassee and the Southwest District Office shall be notified in writing at least 15 days prior to any emission test.

[Rule 62-297.310, F.A.C., Air Construction Permit AC53-260190/PSD-FL-222]

E.10. No person shall circumvent any air pollution control device, or allow the emission of air pollutants without the applicable air pollution control device operating properly.

[Rule 62-210.650, F.A.C.]

E.11. The Prilled MAP Plant shall be subject to the following:

- a. Excess emissions resulting from startup, shutdown or malfunction of any source shall be permitted providing (1) best operational practices to minimize emissions are adhered to and (2) the duration of excess emissions shall be minimized but in no case exceed two hour in any 24 hour period unless specifically authorized by the Department for longer duration.
- b. Excess emissions which are caused entirely or in part by poor maintenance, poor operation, or any other equipment or process failure which may reasonably be prevented during startup, shutdown, or malfunction shall be prohibited.
- c. Considering operational variations in types of industrial equipment operations affected by this rule, the Department may adjust maximum and minimum factors to provide reasonable and practical regulatory controls consistent with the public interest.
- d. In case of excess emissions resulting from malfunctions, each source shall notify the Department in accordance with Rule 62-4.130, F.A.C. A full written report on the malfunctions shall be submitted in a quarterly report, if requested by the Department.

[Rule 62-210.700, F.A.C., Air Construction Permit AC53-260190/PSD-FL-222]

Monitoring of Operations

E.12. In order to provide reasonable assurance, when the MAP Plant and MAP Loadout System are operating, that the pollution control system is operating properly, the permittee shall comply with Facility-wide Condition No. 9.

[Rule 62-4.070(3), F.A.C.]

E.13. In order to provide reasonable assurance that the pollution control system is operating properly, the permittee shall create and keep a record log of the scrubber operating parameters. The record log shall contain, at a minimum:

- a. the volumetric liquid flow rate (gallons per minute),
- b. the scrubber pressure drop (inches of water),
- c. the date and time of the measurements, and
- d. the name of the person responsible for performing the measurements.

A log entry shall be made at least once for every day that the MAP Plant operates.

NOTE: The permittee may substitute continuous monitoring and strip chart recordings for the manual recordkeeping required by this Condition.

[Rules 62-4.070(3), 62-4.160(14)(b), 62-4.160(14)(c), and 62-213.440(b)2.b., F.A.C.]

E.14. In order to provide reasonable assurance that the pollution control system is operating properly, the permittee shall create and keep a record log of the baghouse operating parameters. The record log shall contain, at a minimum:

- b. the pressure drop (inches of water),
- c. the date and time of the measurements, and
- d. the name of the person responsible for performing the measurements.

A log entry shall be made at least once for every day of operation of the MAP Loadout System.

NOTE: The permittee may substitute continuous monitoring and strip chart recordings for the manual recordkeeping required by this Condition.

[Rules 62-4.070(3), 62-4.160(14)(b), 62-4.160(14)(c), and 62-213.440(b)2.b., F.A.C.]

Recordkeeping and Reporting Requirements

E.15. In order to comply with Condition E.1, the permittee shall maintain hourly records of the MAP production rate.

[Rule 62-213.440(1), F.A.C.]

APPENDIX C - CURRENT CONSTRUCTION PERMIT CONDITIONS



Department of Environmental Protection

Jeb Bush
Governor

Southwest District
3804 Coconut Palm Drive
Tampa, Florida 33619

David B. Struhs
Secretary

PERMITTEE:

U.S. Agri-Chemicals Corp.
3225 State Road 630 West
Ft. Meade, FL 33841

Permit No.: 1050051-008-AC
Effective Date: 09/28/1999
Expiration Date: 6/1/02
Project: Granular MAP/DAP Plant

This permit is issued under the provisions of Chapter 403, Florida Statutes, and Florida Administrative Code Chapters 62-204 through 297, and Chapter 62-4. 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:

This permit is for the modification of the existing Prilled monoammonium phosphate (MAP) Plant to allow the production of up to 50 tons per hour (TPH) of granular MAP and/or diammonium phosphate (MAP/DAP) fertilizer. A new Granular MAP/DAP fertilizer plant will be constructed which shares some process equipment and air pollution control equipment with the existing Prilled MAP Plant. The plants will not be operated concurrently. When operating as the Prilled MAP Plant, the facility shall comply with the conditions contained Permit No. PSD-222-FL. When operating as the Granular MAP/DAP Plant, the facility shall comply with the conditions contained in this permit. Additionally, granular fertilizer from this plant and the Bartow facility may be stored in the existing storage building and loaded into railcars or trucks by the existing loadout system.

The new granulation equipment emission sources include the following: reactor, granulator, natural gas fired dryer, product screens, storage bin, bucket elevators, conveyors, and grinding mills. New air pollution control equipment includes a dryer high efficiency cyclone and a cooler high efficiency cyclone. The following existing air pollution control equipment, used at the Prilled MAP Plant, are also used to control emissions from the Granular MAP/DAP Plant: Tower Venturi, Cooler Venturi, and the cyclonic separator. The Granular MAP/DAP Plant process emission sources and associated air pollution control equipment are listed on the next page.

Granular MAP and DAP are made by reacting anhydrous ammonia and phosphoric acid in a covered reaction tank with the further addition of ammonia and acid in a granulator. The granulated product is then dried in a rotary dryer. The dried product is sized by screening, grinding of oversized and recycling of undersized. The properly sized product is conveyed to the storage building for eventual loadout.

Emissions from the reactor and granulator are directed to a venturi/cyclonic ammonia absorber (R-G Ammonia Absorber) to recover ammonia and then to the existing Tower Venturi. The R-G Ammonia Absorber also controls particulate matter emissions. Emissions from the rotary dryer and material handling equipment are controlled by the new dryer cyclone and then the Tower

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U.S. Agri-Chemicals Corp.
Ft. Meade Chemical Plant

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Venturi. Emissions from the cooler are controlled by the new Cooler Cyclone and the Cooler Venturi. The Tower Venturi and Cooler Venturi are ducted to the cyclonic separator. The cyclonic separator contains a chevron-type mist eliminator to further reduce entrained scrubber liquors prior to exhaust to the atmosphere.

Granular MAP/DAP Emission Sources & Associated Control Equipment

Process Emission Source/Identifier*	Control Equipment
MAP/DAP Reactor	Tower Venturi (<i>existing</i>), cyclonic separator (<i>existing</i>)
MAP/DAP Granulator	
Dryer	Dryer Cyclone, Tower Venturi (<i>existing</i>), cyclonic separator (<i>existing</i>)
Screen Feed Elevator	
Product Screen A	
Product Screen B	
Product Bin	
Oversize Mill A	
Oversize Mill B	
Product Feeder	
Recycle Conveyor	
Recycle Elevator	
Product Transfer Conveyor	
Fines Reclaim Conveyor	covered conveyor
Fines Reclaim Hopper	located inside storage building
Cooler (<i>existing</i>)	Cooler Cyclone, Cooler Venturi (<i>existing</i>), cyclonic separator (<i>existing</i>)
Product Elevator (<i>existing</i>)	enclosed
Storage Transfer Conveyor (<i>existing</i>)	covered conveyor
Notes:	
1. Emissions from the reactor and granulator are ducted to the R-G Ammonia Absorber. Its primary purpose is to recover ammonia, so it is not considered control equipment. However, it controls PM/PM ₁₀ emissions and could be a source of fluoride emissions.	
2. The Tower Venturi is labeled "large venturi" in the June 22, 1999 process flow diagram.	
3. The Cooler Venturi is labeled "small venturi" in the June 22, 1999 process flow diagram.	
4. All equipment is new unless otherwise noted.	

*from process flow diagram received June 22, 1999

Rule Applicability Notes:

- The granular DAP Method of Operation is subject to 40 CFR 60 Subpart V, *Standards of Performance for the Phosphate Fertilizer Industry: Diammonium Phosphate Plants* and Rule 62-296.403(f), *Phosphate Processing*.
- The granular MAP Method of Operation is subject to Rule 62-296.403(i), F.A.C., *Phosphate Processing*. This rule requires Best Available Control Technology (BACT) to control fluoride emissions during granular MAP production.

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Project: Granular MAP/DAP Plant

- The facility has requested that this project be permitted as a non-PSD source. Therefore, this permit contains limitations to ensure that this modification does not exceed PSD significant increase levels.

Location: Ft. Meade Chemical Plant, State Road 630, 2 miles west of Ft. Meade, Polk County
UTM: 17-416.2 km East 3068.7 km North
Latitude: 27° 44' 40" North and **Longitude:** 81° 51' 08" West.
Facility ID No.: 1050051

Referenced Attachments

Best Available Control Technology (BACT) Determination dated September 10, 1999
 Alternate Procedures and Requirements ASP No. 95-H-01

Permit History: No previous permits for the Granular MAP/DAP Plant. The Prilled MAP Plant is permitted under Permit No. PSD-222-FL.

The following conditions apply to the emissions unit listed below:

EU No.	EU Description
038	Granular MAP/DAP Plant
Notes: EU = Emissions Unit	
Please reference Permit No. and Emission Unit No. in all correspondence, test report submittals, etc.	

Specific Conditions:

1. A part of this permit is the attached 15 General Conditions and BACT determination dated September 10, 1999 [Rule 62-4.160, F.A.C.]
2. All applicable rules and design discharge limitations specified in the application must be adhered to. The permit holder may also need to comply with county, municipal, federal, or other state regulations.
[Rule 62-210.300, F.A.C.]
3. Unless otherwise indicated, the construction of the Granular MAP/DAP Plant shall be in accordance with the capacities and specifications in the application or in updated submittals.
[Rule 62-210.300, F.A.C.]
4. Pursuant to Rule 62-204.800, F.A.C., the permittee is subject to 40 CFR 60 Subpart V and the general provisions of 40 CFR 60 Subpart A, where applicable.

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U.S. Agri-Chemicals Corp.
Ft. Meade Chemical Plant

Permit No.: 1050051-008-AC ~
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Operation Limitations

5. The dryer shall be fired with natural gas only.
[Rules 62-4.160(2), F.A.C. and 62-213.440(1), F.A.C.]
6. The Granular MAP/DAP Plant is allowed to operate continuously, i.e., 8,760 hours/year.
[Rule 62-210.200(PTE), F.A.C.]
7. The P₂O₅ process input rate shall not exceed 26.5 TPH (daily average basis) and 158, 920 tons per consecutive 12-month period.
[Rule 62-210.200(PTE), F.A.C.]
8. The production rate of granular MAP/DAP shall not exceed 50 TPH (daily average basis) and 300,000 tons per consecutive 12-month period for the total of both products. If any prilled MAP is produced during the same 12-month period, the above annual limitation is presented by the following equation:

$$G = 300,000 - P/1.9$$

where:

G = granular MAP/DAP production limit, tons per consecutive 12-month period

P = production of prilled MAP, tons per consecutive 12-month period

[Rule 62-210.200(PTE), F.A.C.]

Permitting Note: The production of prilled MAP is currently limited to 358,284 tons per consecutive 12-month period (i.e., 40.9 TPH x 8760 hrs/yr) in Permit No. PSD-FL-222. If the prilled MAP production limit is increased, the above condition must be modified to ensure that the potential fluoride emissions from the production of prilled MAP and granular MAP/DAP do not exceed 2.94 tons per consecutive 12-month period.

9. The permittee shall not allow any person to circumvent any pollution control device nor allow the emissions of air pollutants without the applicable air pollution control device operating properly.
[Rule 62-210.650, F.A.C.]
10. No person shall cause, let, permit, suffer or allow the emissions of unconfined particulate matter from any emissions unit whatsoever, including, but not limited to, vehicular movement, transportation of materials, construction, alteration, demolition or wrecking, or industrially related activities such as loading, unloading, storing or handling without taking reasonable precautions to prevent such emissions.
[Rule 62-296.320(4)(c)1, F.A.C.]
11. Reasonable precautions may include, but shall not be limited to the following:
 - (a) Paving and maintenance of roads, parking areas and yards.

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U.S. Agri-Chemicals Corp.
Ft. Meade Chemical Plant

Permit No.: 1050051-008-AC -
Project: Granular MAP/DAP Plant

- (b) Application of water or chemicals to control emissions from such activities as demolition of buildings, grading roads, construction, and land clearing.
- (c) Application of asphalt, water, oil, chemicals or other dust suppressants to unpaved roads, yards, open stockpiles and similar emissions units.
- (d) Removal of particulate matter from roads and other paved areas under the control of the permittee of the emissions unit to prevent reentrainment, and from buildings or work areas to prevent particulate matter from becoming airborne.
- (e) Landscaping or planting of vegetation.
- (f) Use of hoods, fans, filters, and similar equipment to contain, capture and/or vent particulate matter.
- (g) Confining abrasive blasting where possible.
- (h) Enclosure or covering of conveyor systems.

[Rule 62-296.320(4)(c)3, F.A.C.]

12. The following work practices (reasonable precautions) shall be followed:

- (a) The site yard, stockpiles, roadways, parking areas under control of the permittee shall be maintained to control emissions of unconfined particulate matter.
- (b) Apply water when necessary to control emissions of unconfined particulate matter.
- (c) Maintaining covers/enclosures for the Fines Reclaim Conveyor, Product Elevator, and Storage Transfer Conveyor.

[Rule 62-296.320(4)(c)2, F.A.C., response letter dated June 22, 1999]

13. No person shall cause, suffer, allow, or permit the discharge of air pollutants which cause or contribute to an objectionable odor.

[Rule 62-296.320, F.A.C.]

Emission Limitations

14. Total fluoride emissions from the Granular MAP/DAP Plant shall not exceed 0.98 lb/hr, 2.94 tons per consecutive 12-month period, and 0.037 lb F/ton of P₂O₅ input.

[Rule 62-210.200 (PTE), F.A.C.; proposed by applicant in 5/18/99 permit application]

Permitting Note: This limitation is more stringent than that contained in 40 CFR, Subpart V.

15. Total fluoride emissions from the Granular MAP/DAP Plant and the Prilled MAP Plant combined shall not exceed 2.94 tons per consecutive 12-month period.

[Rule 62-210.200 (PTE), F.A.C.; proposed by applicant in 5/18/99 permit application]

Permitting Note: Permit No. PSD-FL-222 limits annual total fluoride emissions to 1.7 tons from the Prilled MAP Plant.

16. PM/PM₁₀ emissions from the Granular MAP/DAP Plant shall not exceed 8.38 lb/hr, 25.1 tons per consecutive 12-month period, and 0.168 lb PM/ton of product.

[Rules 62-210.200 (PTE) & 62-212.400, F.A.C.]

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17. Visible emissions from the cyclonic separator stack shall not exceed 15% opacity.
[Requested in permit application dated 5/17/99]

Excess Emissions

18. The Granular MAP/DAP Plant shall be subject to the following:

- (a) Excess emissions resulting from startup, shutdown or malfunction of any emissions unit shall be permitted providing (1) best operational practices to minimize emissions are adhered to and (2) the duration of excess emissions shall be minimized but in no case exceed two hours in any 24 hour period unless specifically authorized by the Department for longer duration.
- (b) Excess emissions which are caused entirely or in part by poor maintenance, poor operation, or any other equipment or process failure which may reasonably be prevented during startup, shutdown, or malfunction shall be prohibited.
- (c) Determination of whether acceptable operating and maintenance procedures are being used will be based on information available to the Department which may include, but is not limited to, monitoring results, opacity observations, review of operating and maintenance procedures, and inspection of the source.
- (d) Considering operational variations in types of industrial equipment operations affected by this rule, the Department may adjust maximum and minimum factors to provide reasonable and practical regulatory controls consistent with the public interest.
- (e) In case of excess emissions resulting from malfunctions, each owner or operator shall notify the Department in accordance with Rule 62-4.130, F.A.C. A full written report on the malfunctions shall be submitted in a quarterly report, if requested by the Department.
[40 CFR 60 Subpart A, Rule 62-210.700, F.A.C.]

Monitoring of Operations

19. The permittee shall install, calibrate, maintain, and operate a flow monitoring device which can be used to determine the mass flow of phosphorus-bearing feed material to the process. The flow monitoring device shall have an accuracy of ± 5 percent over its operating range.
[40 CFR 60.223(a); Rule 62-204.800, F.A.C.]

20. The permittee shall maintain a daily record of equivalent P_2O_5 feed by first determining the total mass rate (TPH) of phosphorus-bearing feed using a flow monitoring device meeting the requirements of Specific Condition No. 19 and then by proceeding according to the following procedure:

The equivalent P_2O_5 feed rate (P) shall be computed for each operating day using the equation:

$$P = (M_p) \times (R_p)$$

PERMITTEE:

U.S. Agri-Chemicals Corp.
Ft. Meade Chemical Plant

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where: M_p = total mass flow rate of phosphorus-bearing feed (TPH)
 R_p = P_2O_5 content, decimal fraction

The monitoring device required in Specific Condition No. 19 shall be used to determine total mass flow rate of the phosphorus-bearing feed. An approved method listed in 40 CFR 63.606(c)(3)(ii) shall be used to determine the P_2O_5 content of the feed.
[40 CFR 60.223(b); Rules 62-204.800 & 62-4.070(3), F.A.C.]

21. The permittee shall install, calibrate, maintain, and operate monitoring devices which continuously measure and permanently record the pressure drop separately across the Tower Venturi and Cooler Venturi scrubbers. The monitoring devices shall have an accuracy of ± 5 percent over its operating range.
[40 CFR 60.223(c); Rule 62-204.800, F.A.C.]

22. The permittee shall monitor and record the pressure drop of the R-G Ammonia Absorber at least once per 8-hour operating shift.
[Rule 62-213.440(1)(b), F.A.C.]

23. The permittee shall install, calibrate, maintain, and operate monitoring devices which continuously measure the liquid flowrate for the R-G Ammonia Absorber, Tower Venturi, and Cooler Venturi. The flowrates shall be recorded at least once per 8-hour operating shift.
[Rule 62-213.440(1)(b), F.A.C.]

24. The permittee shall determine and record the scrubbing medium nitrogen to phosphorus (N:P) ratio for each of the following, via grab or composite sample, at least once per operating day: R-G Ammonia Absorber and final scrubbing system (i.e., Tower Venturi, Cooler Venturi, and cyclonic separator).
[Rule 62-213.440(1)(b), F.A.C.]

25. Recordkeeping for Specific Condition Nos. 22, 23, and 24 shall include the date and time of the measurements and the name of the person responsible for recording the measurements. This does not apply to continuous recording devices.
[Rule 62-213.440(1)(b), F.A.C.]

26. In order to provide reasonable assurance that the Granular MAP/DAP Plant air pollution control equipment is functioning properly during plant operation, the following set of scrubber operating parameters shall be maintained at a minimum of 90% of the values measured and recorded during any single prior satisfactory compliance tests conducted at a minimum of 90% of the maximum allowed operation rate: liquid flowrate and pressure drop for the R-G Ammonia Absorber, Tower Venturi, and Cooler Venturi and N:P ratio for the R-G Ammonia Scrubber and final scrubber system. Satisfactory compliance tests conducted below 90% of the maximum allowed operating rate will establish a set of new minimum scrubber parameter values for that lower operating rate (this does not exclude the use of parameter values previously established for higher operating rates).

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A value outside of the acceptable scrubber operating parameter ranges does not necessarily constitute a violation, but rather establishes a requirement for an additional compliance test or tests as specified below:

Within 30 days of the operation of a pollution control device lower than 90% of the minimum acceptable numerical control parameter determined during satisfactory compliance tests as detailed above, the permittee shall conduct a compliance test for fluoride and PM/PM₁₀ (except in the case of the N:P ratio, for which only a fluoride test is required) with the pollution control device operating at no higher than 110% of the lower value at which it operated, in order to demonstrate compliance. Prior notification shall be given to the Air Compliance Section of the Department's Southwest District (DEP-SWD),

The test result(s) shall be submitted to the Air Compliance Section of the DEP-SWD within 45 days of testing. Acceptance of the test(s) by the Department will establish whether the operation of the pollution control device, at the observed parameter, was not a violation of this permit. Furthermore, the permittee may submit an application to amend this permit to reflect the lower control parameter.

[Rules 62-4.070(3) & 62-210.650, F.A.C.]

Compliance Testing Requirements

27. **Initial Compliance Test (Granular MAP/DAP Plant)** Within 60 days after achieving the maximum production rate at which the MAP/DAP Plant will be operated, but not later than 180 days after its initial startup, the permittee shall conduct initial compliance tests for fluorides, PM/PM₁₀, and visible emissions on the cyclonic separator stack.
[40 CFR 60.8(a) and Rule 62-297.310(7)(a)1, F.A.C.]

28. **Subsequent Compliance Tests.** The cyclonic separator stack shall be tested for fluorides and visible emissions each federal fiscal year after the initial compliance test, during the period May - October. In addition, in the year prior to the five-year anniversary of the initial PM/PM₁₀ compliance test, conduct a PM/PM₁₀ compliance test on the cyclonic separator stack.
[Rule 62-297.310(7)(a)3 & 4, F.A.C.]

29. Test Methods

(a) Fluoride emissions testing shall be conducted in accordance with EPA Method 13A or 13B or other methods approved by the Department as an Alternate Procedure in accordance with Rule 62-297.620, F.A.C. (see attached ASP No. 95-H-01). An approved method listed in 40 CFR 63.606(c)(3)(ii) shall be used to determine the P₂O₅ content of the phosphate feed.

(b) PM/PM₁₀ emissions testing shall be conducted in accordance with EPA Method 5 or other methods approved by the Department as an Alternate Procedure in accordance with Rule 62-297.620, F.A.C. The sample volume for each run shall be at least 30 dscf.

(c) When both particulate matter and visible emissions testing are required, the tests shall be conducted concurrently.

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(d) Visible emissions observations shall be conducted in accordance with EPA Method 9 and shall be a minimum of 30 minutes.

(e) The minimum requirements for stationary point source emission test procedures shall be in accordance with Chapter 62-297, F.A.C. and 40 CFR 60 Appendix A.

[Rules 62-296.320(4)(a)3(i), 62-297.310(4)(a)2, 62-4.070(3) & 62-297.401, F.A.C. 40 CFR 60.224]

30. At least 30 days prior to the date on which the initial Granular MAP/DAP Plant compliance test (15 days prior for all other tests) is due to begin, the permittee shall provide written notification of the test to the Air Compliance Section of the Department's Southwest District (DEP-SWD). The notification must include the following information: the date, time, and location of each test; the name and telephone number of the facility's contact person who will be responsible for coordinating the test; and the name, company, and telephone number of the person conducting the test.

[Rule 62-297.340(1)(i), F.A.C.]

31. Test Operation Rate. Testing of emissions shall be conducted with the emissions unit operation at permitted capacity as defined below. If it is impracticable to test at permitted capacity, an emissions unit may be tested at less than the minimum permitted capacity; in this case, subsequent emissions unit operation is limited to 110 percent of the test load until a new test is conducted. Once the unit is so limited, operation at higher capacities is allowed for no more than 15 consecutive days for the purpose of additional compliance testing to regain the authority to operate at the permitted capacity. Permitted capacity is defined as 90 to 100 percent of the maximum operation rate allowed by the permit (i.e., 50 TPH production rate and 26.5 TPH P₂O₅ input rate).

[Rule 62-297.310(2), F.A.C.]

32. Test Report. The permittee of an air pollution emissions unit, for which compliance tests are required, shall file a report with the Air Compliance Section of the DEP-SWD on the results of each such test. The required test report shall be filed with the Department as soon as practical but no later than 45 days after each test is completed. The test report shall provide, at minimum, the information required in Rule 62-297.310(8), F.A.C. In addition the report shall provide the following information for each test run:

- MAP/DAP production rate (TPH)
- P₂O₅ input rate (TPH)
- Liquid flowrate (GPM) and pressure drop (inches H₂O) for the R-G Ammonia Absorber, Tower Venturi, and Cooler Venturi
- Makeup liquid of the final scrubbing system
- N/P ratio for the R-G Ammonia Absorber and the final scrubbing system

[Rule 62-297.310(8), F.A.C.]

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33. Special Compliance Tests. When the Department, after investigation, has good reason (such as complaints, increased visible emissions or questionable maintenance of control equipment) to believe that any applicable emission standard contained in a Department rule or in a permit issued pursuant to those rules is being violated, it may require the owner or operator of the emissions unit to conduct compliance tests which identify the nature and quantity of pollutant emissions from the emissions unit and to provide a report on the results of said tests to the Department. [Rule 62-297.310(7)(b), F.A.C.]

Reporting And Recordkeeping Requirements

34. The permittee shall furnish written notification to the Department as follows:

- (a) A notification of the date construction of the Granular MAP/DAP Plant is commenced postmarked no later than 30 days after such date. This requirement shall not apply in the case of mass-produced facilities which are purchased in completed form.
- (b) A notification of the anticipated date of initial startup of the Granular MAP/DAP Plant postmarked not more than 60 days nor less than 30 days prior to such date.
- (c) A notification of the actual date of initial startup of the Granular MAP/DAP Plant postmarked within 15 days after such date.

[40 CFR 60.7; Rule 62-204.800, F.A.C.]

35. Any owner or operator subject to the provisions of this part shall maintain records of the occurrence and duration of any startup, shutdown, or malfunction in the operation of an affected facility; any malfunction of the air pollution control equipment; or any periods during which a continuous monitoring system or monitoring device is inoperative.

[40 CFR 60.7; Rule 62-204.800, F.A.C.]

36. A recordkeeping log shall be established and maintained to document compliance with Condition Nos. 7, 8, and 20. The daily logs shall be updated and completed by the end of the operating day. The monthly logs shall be updated and completed by the 15th day of the following month. The logs shall include, at a minimum, the following:

daily (each operating day)

- (a) date
- (b) hours of operation
- (c) the calculated P₂O₅ feed rate (TPH, daily average basis)
- (d) the calculated MAP/DAP production rate (TPH, daily average basis)

monthly

- (e) month
- (f) monthly P₂O₅ input and production of granular MAP/DAP and prilled MAP (tons)
- (g) P₂O₅ input and production of granular MAP/DAP and prilled MAP for the most recent consecutive 12-month period (tons)
- (h) if prilled MAP was produced during the most recent consecutive 12-month period, calculate the reduced production limit for granular MAP/DAP in accordance with Specific Condition No. 8 (tons per consecutive 12-month period)

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These records shall be retained on file at the facility for at least five years and shall be made available to the Department upon request.

[Rule 62-213.440(1)(b), F.A.C.; 40 CFR 60.223(b)]

37. The permittee, for good cause, may request that this construction permit be extended. Such a request shall be submitted to the Department 60 days before the expiration of the permit.

[Rule 62-4.090, F.A.C.]

38. The permittee shall submit an Annual Operating Report to the Department's Southwest District office by March 1 of the following year for the previous year's operation.

[Rule 62-210.370(3), F.A.C.]

PSD Applicability

39. Based on the limitations contained in this permit, this modification at an existing PSD major facility is not considered a significant modification subject to PSD review on the basis that the net emissions increases associated with the modification were determined to be not significant (ref. Table 2, Rule 62-212.400, F.A.C.). Should the permittee request relaxation of any emission or operational limitations in this permit that would affect the potential to emit of this facility, the Department will evaluate the applicability of the PSD requirements of Chapter 62-212, F.A.C. as if the modifications allowed by this permit had not yet taken place.

[Rule 62-212.400(2)(g), F.A.C.]

Title V Operation Permit

40. A request for an operation permit must be submitted to the Department at least 180 days prior to the expiration date of this construction permit. To properly request an operation permit, the permittee shall submit:

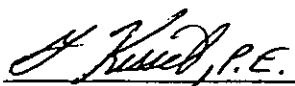
(a) A completed DEP Form 62-210.900(1), F.A.C., *Application for Air Permit - Title V Source*.

(b) A copy of the test report required in Specific Condition No. 32, unless previously submitted.

(c) A copy of the records required in Specific Condition No. 36 for the most recent month.

[Rules 62-4.070(3) & 62-210.300(2), F.A.C.]

FLORIDA DEPARTMENT OF
ENVIRONMENTAL PROTECTION


FOR W.C. Thomas, P.E.
District Air Administrator
Southwest District