



CARGILL FERTILIZER, INC.

8813 Highway 41 South - Riverview, Florida 33569 - Telephone 813-677-9111 - TWX 810-876-0648 - Telex 52666 - FAX 813-671-6146
Certified Mail: Z 206 635 277

September 18, 1998

Mr. Clair H. Fancy, Bureau Chief
Florida Department of Environmental Protection
2600 Blair Stone Road
Tallahassee, Florida 32399-2400

RECEIVED
SEP 21 1998
BUREAU OF
AIR REGULATION

Dear Mr. Linero:

Re: Cargill Fertilizer, Inc. - Bartow Facility
No. 3 Fertilizer Plant Construction Permit Application

1050046-008-AC
PSD-FI-255

Please find enclosed four copies of a construction permit application for the No. Fertilizer Plant at our Bartow Facility. Included with these applications is a check in the amount of \$7,500 (check # 301082755) for the Florida Department of Environmental Protection.

If you have any questions or require additional information, please call me at (813) 671-6369.

Sincerely,

Kathy Edgemon
Environmental Engineer

cc: Jellerson
File: Bartow

cc: J. Reynolds
C. Holladay
EPA
NPS
Palk Co
SWD



recycled paper

*Financial Service Center
Fargo, ND*

US Bank East Grand Forks
East Grand Forks, MN 56721

75-1592
912

MM/DD/YY 08/06/98	Number 301082755
Amount \$*****\$7,500.00	

Pay to
The order
of

FLORIDA DEPT OF ENVIRONMENTAL PROTECTION
2600 BLAIR STONE RD
TALLAHASSEE FL 323992400

[Signature]

REMITTANCE STATEMENT

000423
483693

Financial Service Center

VENDOR	50220445	DATE	08/06/98	PAYMENT #	301082755
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Vendor Ref#/Invoice #	Purchase Location	PO#/Ref#	Voucher#	Invoice Amount	Discount	Sales Tax	Net Amount	Description
980804 : 3597	Fert-Bartow Chemical Plan	UM42162309	PX00073671	7,500.00			7,500.00	PSD permitting fee

If you have any questions, please call the
Financial Service Center at 1-800-513-1098.

RECEIVED
SEP 21 1998
BUREAU OF
AIR REGULATION

REPORT ON

PSD APPLICATION
FOR
NO. 3 FERTILIZER EXPANSION
CARGILL FERTILIZER, INC.
BARTOW, FLORIDA

Prepared For:

Cargill Fertilizer, Inc.
3200 Highway 60 West
Bartow, Florida 33830

Prepared By:

Golder Associates Inc.
6241 NW 23rd Street, Suite 500
Gainesville, FLorida 32653

DISTRIBUTION:

7 Copies - Cargill Fertilizer, Inc.
2 Copies - Golder Associates Inc.

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PART A

Department of Environmental Protection

DIVISION OF AIR RESOURCES MANAGEMENT

APPLICATION FOR AIR PERMIT - LONG FORM

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

I. APPLICATION INFORMATION

This section of the Application for Air Permit form identifies the facility and provides general information on the scope and purpose of this application. This section also includes information on the owner or authorized representative of the facility (or the responsible official in the case of a Title V source) and the necessary statements for the applicant and professional engineer, where required, to sign and date for formal submittal of the Application for Air Permit to the Department. If the application form is submitted to the Department using ELSA, this section of the Application for Air Permit must also be submitted in hard-copy.

Identification of Facility Addressed in This Application

Enter the name of the corporation, business, governmental entity, or individual that has ownership or control of the facility; the facility site name, if any; and the facility's physical location. If known, also enter the facility identification number.

1. Facility Owner/Company Name: Cargill Fertilizer, Inc	
2. Site Name: Bartow Facility	
3. Facility Identification Number: 1050046 [] Unknown	
4. Facility Location Information: Street Address or Other Locator: 3200 Highway 60 West City: Bartow County: Polk Zip Code: 33830	
5. Relocatable Facility? [] Yes [x] No	6. Existing Permitted Facility? [x] Yes [] No

Application Processing Information (DEP Use)

1. Date of Receipt of Application:	September 21, 1998
2. Permit Number:	1050046-008-AC
3. PSD Number (if applicable):	PSD-F1-255
4. Siting Number (if applicable):	

Owner/Authorized Representative or Responsible Official

1. Name and Title of Owner/Authorized Representative or Responsible Official:

Melody Russo, Environmental Superintendent

2. Owner/Authorized Representative or Responsible Official Mailing Address:

Organization/Firm: **Cargill Fertilizer, Inc.**

Street Address: **P.O. Box 9002**

City: **Bartow**

State: **FL**

Zip Code: **33831**

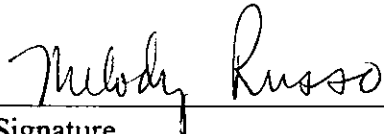
3. Owner/Authorized Representative or Responsible Official Telephone Numbers:

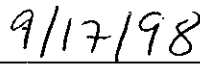
Telephone: **(941) 534-9613**

Fax: **(941) 534-9680**

4. Owner/Authorized Representative or Responsible Official Statement:

I, the undersigned, am the owner or authorized representative of the non-Title V source addressed in this Application for Air Permit or the responsible official, as defined in Rule 62-210.200, F.A.C., 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.*


Signature


Date

* Attach letter of authorization if not currently on file.

Scope of Application

This Application for Air Permit addresses the following emissions unit(s) at the facility. An Emissions Unit Information Section (a Section III of the form) must be included for each emissions unit listed.

Emissions Unit ID		Description of Emissions Unit	Permit Type
Unit #	Unit ID		
1R	001	No. 3 MAP/DAP Fertilizer Plant	AC1A
See individual Emissions Unit (EU) sections for more detailed descriptions. Multiple EU IDs indicated with an asterisk (*). Regulated EU indicated with an "R".			

Purpose of Application and Category

Check one (except as otherwise indicated):

Category I: All Air Operation Permit Applications Subject to Processing Under Chapter 62-213, F.A.C.

This Application for Air Permit is submitted to obtain:

- ☐ Initial air operation permit under Chapter 62-213, F.A.C., for an existing facility which is classified as a Title V source.
- ☐ Initial air operation permit under Chapter 62-213, F.A.C., 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: _____

- ☐ Air operation permit renewal under Chapter 62-213, F.A.C., for a Title V source.

Operation permit to be renewed: _____

- ☐ Air operation permit revision for a Title V source to address one or more newly constructed or modified emissions units addressed in this application.

Current construction permit number: _____

Operation permit to be renewed: _____

- ☐ Air operation permit revision or administrative correction for a Title V source to address one or more proposed new or modified emissions units and to be processed concurrently with the air construction permit application. Also check Category III.

Operation permit to be revised/corrected: _____

- ☐ Air operation permit revision for a Title V source 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 to be revised: _____

Reason for revision: _____

Category II: All Air Construction Permit Applications Subject to Processing Under Rule 62-210.300(2)(b), F.A.C.

This Application for Air Permit is submitted to obtain:

- ☐ Initial air operation permit under Rule 62-210.300(2)(b), F.A.C., for an existing facility seeking classification as a synthetic non-Title V source.

Current operation/construction permit number(s): _____

- ☐ Renewal air operation permit under Rule 62-210.300(2)(b), F.A.C., for a synthetic non-Title V source.

Operation permit to be renewed: _____

- ☐ Air operation permit revision for a synthetic non-Title V source. Give reason for revision; e.g., to address one or more newly constructed or modified emissions units.

Operation permit to be revised: _____

Reason for revision: _____

Category III: All Air Construction Permit Applications for All Facilities and Emissions Units.

This Application for Air Permit is submitted to obtain:

- ☒ Air construction permit to construct or modify one or more emissions units within a facility (including any facility classified as a Title V source).

Current operation permit number(s), if any: _____
AO53-169781

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

Current operation permit number(s): _____

- ☐ Air construction permit for one or more existing, but unpermitted, emissions units.

Application Processing Fee

Check one:

☒ Attached - Amount: \$ 7,500.00

☐ Not Applicable.

Construction/Modification Information

1. Description of Proposed Project or Alterations:

See PSD Report

2. Projected or Actual Date of Commencement of Construction :

1 Oct 1998

3. Projected Date of Completion of Construction :

31 Jan 2002

Professional Engineer Certification

1. Professional Engineer Name: **David A Buff**

Registration Number: **19011**

2. Professional Engineer Mailing Address:

Organization/Firm: **Golder Associates Inc.**

Street Address: **6241 NW 23rd Street, Suite 500**

City: **Gainesville**

State: **FL**

Zip Code: **32653-1500**

3. Professional Engineer Telephone Numbers:

Telephone: **(352) 336-5600**

Fax: **(352) 336-6603**

4. Professional Engineer's 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)

David A. Buff

Date

9/15/98

* Attach any exception to certification statement.

1. Name and Title of Application Contact: David Jellerson, Environmental Superintendent
2. Application Contact Mailing Address: Organization/Firm: Cargill Fertilizer, Inc. Street Address: 8813 Highway 41 South City: Riverview State: FL Zip Code: 33569
3. Application Contact Telephone Numbers: Telephone: (813) 671-6297 Fax: (813) 671-6149

[illegible]

II. FACILITY INFORMATION

A. GENERAL FACILITY INFORMATION

Facility Location and Type

1. Facility UTM Coordinates: Zone: 17 East (km): 409.8 North (km): 3086.7			
2. Facility Latitude/Longitude: Latitude (DD/MM/SS): 27 / 54 / 22 Longitude: (DD/MM/SS): 81 / 54 / 59			
3. Governmental Facility Code: 0	4. Facility Status Code: A	5. Facility Major Group SIC Code: 28	6. Facility SIC(s): 2874, 2819
7. Facility Comment (limit to 500 characters): Ammonia Emissions for this facility are more than 100 TPY. The facility manufactures phosphate fertilizers from wet phosphate rock.			

Facility Contact

1. Name and Title of Facility Contact: Taylor Abel, Environmental Engineer			
2. Facility Contact Mailing Address: Organization/Firm: Cargill Fertilizer, Inc. Street Address: P.O. Box 9002 City: Bartow State: FL Zip Code: 33831			
3. Facility Contact Telephone Numbers: Telephone: (941) 534-9615 Fax: (941) 534-9680			

Facility Regulatory Classifications

1. Small Business Stationary Source? [] Yes [x] No [] Unknown
2. Title V Source? [x] Yes [] No
3. Synthetic Non-Title V Source? [] Yes [x] No
4. Major Source of Pollutants Other than Hazardous Air Pollutants (HAPs)? [x] Yes [] No
5. Synthetic Minor Source of Pollutants Other than HAPs? [] Yes [x] No
6. Major Source of Hazardous Air Pollutants (HAPs)? [] Yes [x] No
7. Synthetic Minor Source of HAPs? [] Yes [x] No
8. One or More Emissions Units Subject to NSPS? [x] Yes [] No
9. One or More Emissions Units Subject to NESHAP? [] Yes [x] No
10. Title V Source by EPA Designation? [] Yes [x] No
11. Facility Regulatory Classifications Comment (limit to 200 characters):

B. FACILITY REGULATIONS

Rule Applicability Analysis (Required for Category II applications and Category III applications involving non Title-V sources. See Instructions.)

List of Applicable Regulations (Required for Category I applications and Category III applications involving Title-V sources. See Instructions.)

Not Applicable

C. FACILITY POLLUTANTS

Facility Pollutant Information

1. Pollutant Emitted	2. Pollutant Classification
PM Particulate Matter - Total	A
PM10 Particulate Matter - PM10	A
SO2 Sulfur Dioxide	A
FL Fluorides - Total	A
NOX Nitrogen Oxides	A
SAM Sulfuric Acid Mist	A

D. FACILITY POLLUTANT DETAIL INFORMATION

Facility Pollutant Detail Information:

1. Pollutant Emitted:		
2. Requested Emissions Cap:	(lb/hr)	(tons/yr)
3. Basis for Emissions Cap Code:		
4. Facility Pollutant Comment (limit to 400 characters):		

Facility Pollutant Detail Information:

1. Pollutant Emitted:		
2. Requested Emissions Cap:	(lb/hr)	(tons/yr)
3. Basis for Emissions Cap Code:		
4. Facility Pollutant Comment (limit to 400 characters):		

E. FACILITY SUPPLEMENTAL INFORMATION

Supplemental Requirements for All Applications

1. Area Map Showing Facility Location: <input checked="" type="checkbox"/> Attached, Document ID: <u>Part B</u> <input type="checkbox"/> Not Applicable <input type="checkbox"/> Waiver Requested
2. Facility Plot Plan: <input checked="" type="checkbox"/> Attached, Document ID: <u>Part B</u> <input type="checkbox"/> Not Applicable <input type="checkbox"/> Waiver Requested
3. Process Flow Diagram(s): <input checked="" type="checkbox"/> Attached, Document ID(s): <u>CB-FE-3</u> <input type="checkbox"/> Not Applicable <input type="checkbox"/> Waiver Requested
4. Precautions to Prevent Emissions of Unconfined Particulate Matter: <input type="checkbox"/> Attached, Document ID: _____ <input checked="" type="checkbox"/> Not Applicable <input type="checkbox"/> Waiver Requested
5. Fugitive Emissions Identification: <input type="checkbox"/> Attached, Document ID: _____ <input checked="" type="checkbox"/> Not Applicable <input type="checkbox"/> Waiver Requested
6. Supplemental Information for Construction Permit Application: <input checked="" type="checkbox"/> Attached, Document ID: <u>Part B</u> <input type="checkbox"/> Not Applicable

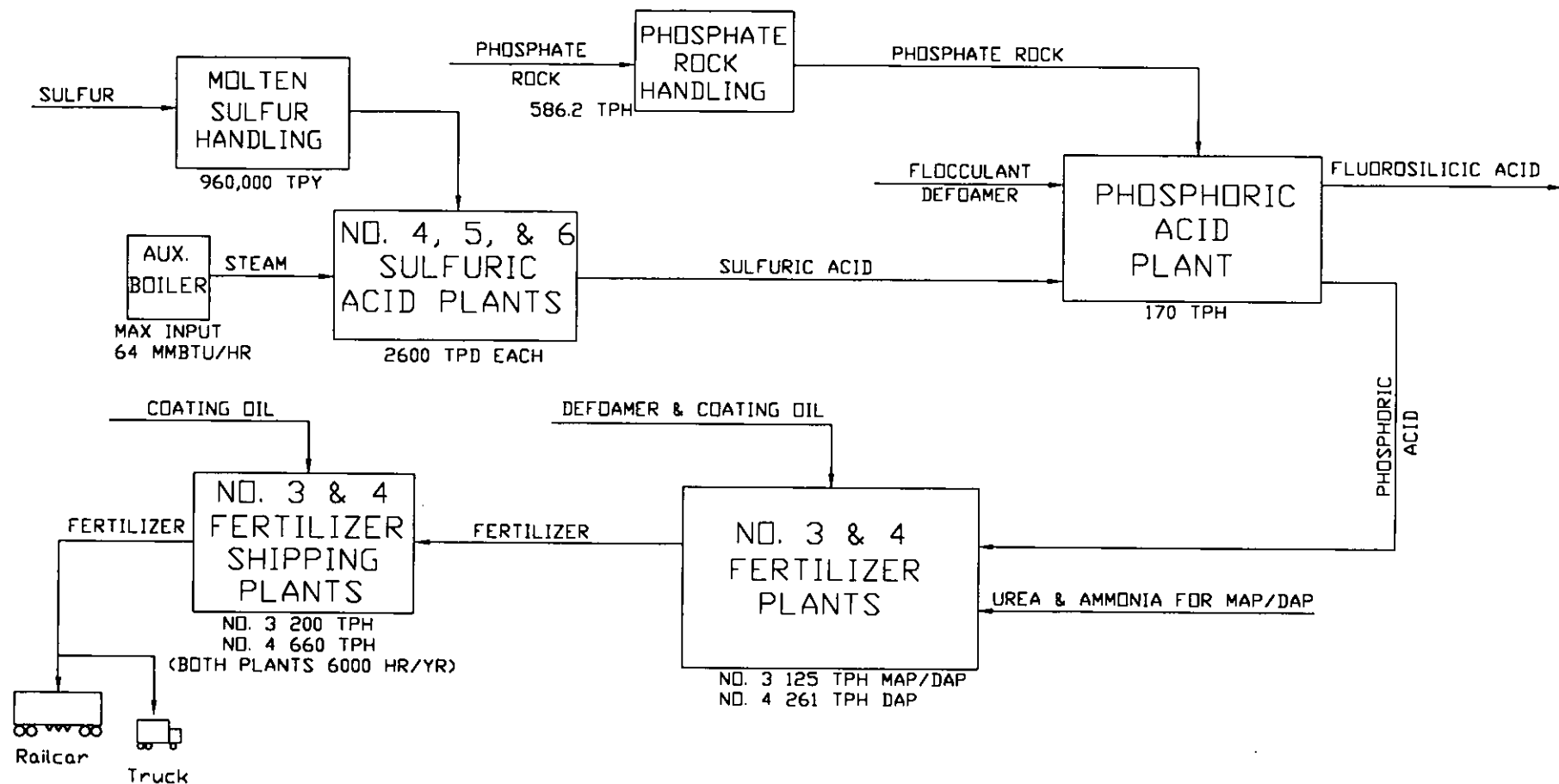
Additional Supplemental Requirements for Category I Applications Only

7. List of Proposed Exempt Activities: <input type="checkbox"/> Attached, Document ID: _____ <input type="checkbox"/> Not Applicable
8. 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 type="checkbox"/> Not Applicable
9. Alternative Methods of Operation: <input type="checkbox"/> Attached, Document ID: _____ <input type="checkbox"/> Not Applicable
10. Alternative Modes of Operation (Emissions Trading): <input type="checkbox"/> Attached, Document ID: _____ <input type="checkbox"/> Not Applicable

11. Identification of Additional Applicable Requirements: <input type="checkbox"/> Attached, Document ID: _____ <input type="checkbox"/> Not Applicable
12. Compliance Assurance Monitoring Plan: <input type="checkbox"/> Attached, Document ID: _____ <input type="checkbox"/> Not Applicable
13. Risk Management Plan Verification: <input type="checkbox"/> Plan Submitted to Implementing Agency - Verification Attached Document ID: _____ <input type="checkbox"/> Plan to be Submitted to Implementing Agency by Required Date <input type="checkbox"/> Not Applicable
14. Compliance Report and Plan <input type="checkbox"/> Attached, Document ID: _____ <input type="checkbox"/> Not Applicable
15. Compliance Statement (Hard-copy Required) <input type="checkbox"/> Attached, Document ID: _____ <input type="checkbox"/> Not Applicable

ATTACHMENT CB-FE-3
PROCESS FLOW DIAGRAM

OVERALL PROCESS OF FERTILIZER MANUFACTURING



Attachment CB-FE-3

CARGILL FERTILIZER, INC. 2000 HUNTERS BLVD DAYTON, OHIO 45424 (513) 244-0000			
CAS FILE: FERTILIZING	PLANT SCALE: HTS	JOB NO.	
FERTILIZER PRODUCTION PROCESS DIAGRAM			
REV. _____	SCALE: HTS	DATE: 02/98	
DR: KEN WOOTEN	BY: _____	JOB NO.	

III. EMISSIONS UNIT INFORMATION

A separate Emissions Unit Information Section (including subsections A through L 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. Some of the subsections comprising the Emissions Unit Information Section of the form are intended for regulated emissions units only. Others are intended for both regulated and unregulated emissions units. Each subsection is appropriately marked.

**A. TYPE OF EMISSIONS UNIT
(Regulated and Unregulated Emissions Units)****Type of Emissions Unit Addressed in This Section**

1. Regulated or Unregulated Emissions Unit? Check one:

☒ The emissions unit addressed in this Emissions Unit Information Section is a regulated emissions unit.

☐ The emissions unit addressed in this Emissions Unit Information Section is an unregulated emissions unit.

2. Single Process, Group of Processes, or Fugitive Only? Check one:

☒ 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).

☐ 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.

☐ 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.

B. GENERAL EMISSIONS UNIT INFORMATION
(Regulated and Unregulated Emissions Units)**Emissions Unit Description and Status**

1. Description of Emissions Unit Addressed in This Section (limit to 60 characters): No. 3 MAP/DAP Fertilizer Plant		
2. Emissions Unit Identification Number: <input type="checkbox"/> No Corresponding ID <input type="checkbox"/> Unknown 001		
3. Emissions Unit Status Code: A	4. Acid Rain Unit? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	5. Emissions Unit Major Group SIC Code: 28
6. Emissions Unit Comment (limit to 500 characters): See Attachment CB-EU1-B6		

Emissions Unit Control Equipment Information**A.**

1. Description (limit to 200 characters):

Venturi/Cyclonic Scrubbers (4)

2. Control Device or Method Code: **53**

B.

1. Description (limit to 200 characters):

Wet Scrubbers (2)

2. Control Device or Method Code: **1**

C.

1. Description (limit to 200 characters):

2. Control Device or Method Code:

C. EMISSIONS UNIT DETAIL INFORMATION
(Regulated Emissions Units Only)

Emissions Unit Details

1. Initial Startup Date:		
2. Long-term Reserve Shutdown Date:		
3. Package Unit: Manufacturer:	Model Number:	
4. Generator Nameplate Rating:	MW	
5. Incinerator Information:		
Dwell Temperature:	°F	
Dwell Time:	seconds	
Incinerator Afterburner Temperature:	°F	

Emissions Unit Operating Capacity

1. Maximum Heat Input Rate:	40	mmBtu/hr
2. Maximum Incineration Rate:	lbs/hr	tons/day
3. Maximum Process or Throughput Rate:	61	TPH P2O5
4. Maximum Production Rate:	125	TPH DAP/MAP
5. Operating Capacity Comment (limit to 200 characters): Process Rate = 61.25 TPH P2O5 (rounded to 61)		

Emissions Unit Operating Schedule

1. Requested Maximum Operating Schedule:		
24	hours/day	7 days/week
52	weeks/yr	8,760 hours/yr

**D. EMISSIONS UNIT REGULATIONS
(Regulated Emissions Units Only)**

Rule Applicability Analysis (Required for Category II Applications and Category III applications involving non Title-V sources. See Instructions.)

List of Applicable Regulations (Required for Category I applications and Category III applications involving Title-V sources. See Instructions.)

40CFR60.11(a)
40CFR60.11(d)
40CFR60.11(f)
40CFR60.12
40CFR60.13(a)
40CFR60.13(b)
40CFR60.13(f)
40CFR60.13(i)
40CFR60.19
40CFR60.222
40CFR60.223
40CFR60.224
40CFR60.7
40CFR60.8
62-204.800(7)27-NSPS for DAP Plants
62-212.400-PSD
62-296.320(4)(b)-General VE Limitation
62-296.705(3)-Test Methods & Procedures
62-296.705-Phosphate Processing
62-297.310-Compliance testing
62-297.401-Compliance test methods

E. EMISSION POINT (STACK/VENT) INFORMATION
(Regulated Emissions Units Only)**Emission Point Description and Type**

1. Identification of Point on Plot Plan or Flow Diagram: #3 DAP	
2. Emission Point Type Code: <input checked="" type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4	
3. Descriptions of Emissions Points Comprising this Emissions Unit for VE Tracking (limit to 100 characters per point): 	
4. ID Numbers or Descriptions of Emission Units with this Emission Point in Common: 	
5. Discharge Type Code: <input type="checkbox"/> D <input type="checkbox"/> F <input type="checkbox"/> H <input type="checkbox"/> P <input type="checkbox"/> R <input checked="" type="checkbox"/> V <input type="checkbox"/> W	
6. Stack Height:	125 feet
7. Exit Diameter:	7.5 feet
8. Exit Temperature:	160 °F

9. Actual Volumetric Flow Rate:	210,000	acfm
10. Percent Water Vapor:		%
11. Maximum Dry Standard Flow Rate:		dscfm
12. Nonstack Emission Point Height:		feet
13. Emission Point UTM Coordinates:		
Zone:	East (km):	North (km):
14. Emission Point Comment (limit to 200 characters):		

F. SEGMENT (PROCESS/FUEL) INFORMATION
(Regulated and Unregulated Emissions Units)**Segment Description and Rate:** Segment 1 of 3

1. Segment Description (Process/Fuel Type and Associated Operating Method/Mode) (limit to 500 characters): Chemical manufacturing; ammonium phosphates; ammoniator/granulator	
2. Source Classification Code (SCC): 3-01-030-02	
3. SCC Units: Tons P2O5 Produced	
4. Maximum Hourly Rate: 61.3	5. Maximum Annual Rate: 536,550
6. Estimated Annual Activity Factor:	
7. Maximum Percent Sulfur:	8. Maximum Percent Ash:
9. Million Btu per SCC Unit:	
10. Segment Comment (limit to 200 characters): Urea is added to process only when necessary for grade control.	

Segment Description and Rate: Segment 2 of 3

1. Segment Description (Process/Fuel Type and Associated Operating Method/Mode) (limit to 500 characters): In Process Fuel use Residual oil; ammonium phosphate dryer	
2. Source Classification Code (SCC): 3-90-004-99	
3. SCC Units: 1000 gallons burned	
4. Maximum Hourly Rate: 0.272	5. Maximum Annual Rate: 338
6. Estimated Annual Activity Factor:	
7. Maximum Percent Sulfur: 1.5	8. Maximum Percent Ash:
9. Million Btu per SCC Unit: 147	
10. Segment Comment (limit to 200 characters): Maximum hourly rate based on heat input rate of 40 MMBtu/hr. Maximum annual rate based on limiting SO2 emissions to less than 40 TPY.	

F. SEGMENT (PROCESS/FUEL) INFORMATION
(Regulated and Unregulated Emissions Units)**Segment Description and Rate:** Segment 3 of 3

1. Segment Description (Process/Fuel Type and Associated Operating Method/Mode) (limit to 500 characters): In-Process Fuel use; Natural gas; ammonium phosphate dryer	
2. Source Classification Code (SCC): 3-90-006-99	
3. SCC Units: Million Cubic feet burned	
4. Maximum Hourly Rate: 0.04	5. Maximum Annual Rate: 350
6. Estimated Annual Activity Factor:	
7. Maximum Percent Sulfur:	8. Maximum Percent Ash:
9. Million Btu per SCC Unit: 1,000	
10. Segment Comment (limit to 200 characters): Maximum Annual Rate = 350.4 (rounded to 350). Maximum hourly rate based on maximum heat input rate of 40 MMBtu/hr.	

Segment Description and Rate: Segment _____ of _____

1. Segment Description (Process/Fuel Type and Associated Operating Method/Mode) (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 Percent Sulfur:	8. Maximum Percent Ash:
9. Million Btu per SCC Unit:	
10. Segment Comment (limit to 200 characters):	

G. EMISSIONS UNIT POLLUTANTS
(Regulated and Unregulated Emissions Units)

1. Pollutant Emitted	2. Primary Control Device Code	3. Secondary Control Device Code	4. Pollutant Regulatory Code
PM	053	052	EL
PM10	052	052	NS
FL	050	052	EL
SO2			EL
NOX			NS
CO			NS

H. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION
(Regulated Emissions Units Only - Emissions Limited Pollutants Only)**Pollutant Detail Information:**

1. Pollutant Emitted: PM	
2. Total Percent Efficiency of Control:	%
3. Potential Emissions:	11.6 lb/hour 51 tons/year
4. Synthetically Limited? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
5. Range of Estimated Fugitive/Other Emissions: <input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 _____ to _____ tons/yr	
6. Emission Factor:	0.19 lb/ton P2O5 Reference: Proposed Bact
7. Emissions Method Code: <input checked="" type="checkbox"/> 0 <input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4 <input type="checkbox"/> 5	
8. Calculation of Emissions (limit to 600 characters): 0.19 lb/ton P2O5 x 61.25 TPH P2O5 = 11.6 lb/hr; 11.6 lb/hr x 8760 hr/yr ÷ 2000 lb/ton = 50.98 TPY	
9. Pollutant Potential/Estimated Emissions Comment (limit to 200 characters):	

Emissions Unit Information Section 1 of 1
Allowable Emissions (Pollutant identified on front page)

A.

1. Basis for Allowable Emissions Code: RULE		
2. Future Effective Date of Allowable Emissions:		
3. Requested Allowable Emissions and Units: 0.19 lb/ton P2O5		
4. Equivalent Allowable Emissions:	11.6 lb/hour	51 tons/year
5. Method of Compliance (limit to 60 characters): Annual stack test using EPA Method 5		
6. Pollutant Allowable Emissions Comment (Desc. of Related Operating Method/Mode) (limit to 200 characters): Based on proposed BACT		

B.

1. Basis for Allowable Emissions Code:		
2. Future Effective Date of Allowable Emissions:		
3. Requested Allowable Emissions and Units:		
4. Equivalent Allowable Emissions:	lb/hour	tons/year
5. Method of Compliance (limit to 60 characters):		
6. Pollutant Allowable Emissions Comment (Desc. of Related Operating Method/Mode) (limit to 200 characters):		

Emissions Unit Information Section 1 of 1
Allowable Emissions (Pollutant identified on front page)

A.

1. Basis for Allowable Emissions Code: RULE		
2. Future Effective Date of Allowable Emissions:		
3. Requested Allowable Emissions and Units: 0.19 lb/ton P2O5		
4. Equivalent Allowable Emissions:	11.6 lb/hour	51 tons/year
5. Method of Compliance (limit to 60 characters): Annual stack test using EPA Method 5		
6. Pollutant Allowable Emissions Comment (Desc. of Related Operating Method/Mode) (limit to 200 characters): Based on Rule 62-296.705(2)(a) and proposed BACT.		

B.

1. Basis for Allowable Emissions Code:		
2. Future Effective Date of Allowable Emissions:		
3. Requested Allowable Emissions and Units:		
4. Equivalent Allowable Emissions:	lb/hour	tons/year
5. Method of Compliance (limit to 60 characters):		
6. Pollutant Allowable Emissions Comment (Desc. of Related Operating Method/Mode) (limit to 200 characters):		

H. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION
(Regulated Emissions Units Only - Emissions Limited Pollutants Only)**Pollutant Detail Information:**

1. Pollutant Emitted: FL		
2. Total Percent Efficiency of Control:		%
3. Potential Emissions:	2.5 lb/hour	11 tons/year
4. Synthetically Limited? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No		
5. Range of Estimated Fugitive/Other Emissions: <input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 _____ to _____ tons/yr		
6. Emission Factor: 0.041 lb/Ton P2O5 Reference: Proposed BACT		
7. Emissions Method Code: <input type="checkbox"/> 0 <input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4 <input checked="" type="checkbox"/> 5		
8. Calculation of Emissions (limit to 600 characters): 2.5 lb F/hr max x 8,760 hr/yr _ 2000 lb/Ton = 10.95 TPY		
9. Pollutant Potential/Estimated Emissions Comment (limit to 200 characters):		

Emissions Unit Information Section 1 of 1
Allowable Emissions (Pollutant identified on front page)

A.

1. Basis for Allowable Emissions Code: RULE		
2. Future Effective Date of Allowable Emissions:		
3. Requested Allowable Emissions and Units: 0.041 lb/ton P2O5		
4. Equivalent Allowable Emissions:	2.5 lb/hour	11 tons/year
5. Method of Compliance (limit to 60 characters): Annual stack test using EPA Method 13A or 13B.		
6. Pollutant Allowable Emissions Comment (Desc. of Related Operating Method/Mode) (limit to 200 characters): Based on proposed BACT.		

B.

1. Basis for Allowable Emissions Code:		
2. Future Effective Date of Allowable Emissions:		
3. Requested Allowable Emissions and Units:		
4. Equivalent Allowable Emissions:	lb/hour	tons/year
5. Method of Compliance (limit to 60 characters):		
6. Pollutant Allowable Emissions Comment (Desc. of Related Operating Method/Mode) (limit to 200 characters):		

H. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION
(Regulated Emissions Units Only - Emissions Limited Pollutants Only)**Pollutant Detail Information:**

1. Pollutant Emitted: SO₂	
2. Total Percent Efficiency of Control: _____ %	
3. Potential Emissions:	64.1 lb/hour 39.9 tons/year
4. Synthetically Limited? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
5. Range of Estimated Fugitive/Other Emissions: <input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 _____ to _____ tons/yr	
6. Emission Factor: 157 S Reference: AP-42	
7. Emissions Method Code: <input checked="" type="checkbox"/> 0 <input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4 <input type="checkbox"/> 5	
8. Calculation of Emissions (limit to 600 characters): See Part B. Annual fuel oil usage limited to 338,000 gal/yr.	
9. Pollutant Potential/Estimated Emissions Comment (limit to 200 characters): For Emission Factor Units, S = wt % Sulfur in oil = 1.5%.	

Emissions Unit Information Section 1 of 1
Allowable Emissions (Pollutant identified on front page)

A.

1. Basis for Allowable Emissions Code: ESCPSD		
2. Future Effective Date of Allowable Emissions:		
3. Requested Allowable Emissions and Units: 1.5 % S fuel oil		
4. Equivalent Allowable Emissions:	64.1 lb/hour	39.9 tons/year
5. Method of Compliance (limit to 60 characters): Record fuel oil usage		
6. Pollutant Allowable Emissions Comment (Desc. of Related Operating Method/Mode) (limit to 200 characters): Based on maximum fuel oil usage of 338,000 gal/yr.		

B.

1. Basis for Allowable Emissions Code:		
2. Future Effective Date of Allowable Emissions:		
3. Requested Allowable Emissions and Units:		
4. Equivalent Allowable Emissions:	lb/hour	tons/year
5. Method of Compliance (limit to 60 characters):		
6. Pollutant Allowable Emissions Comment (Desc. of Related Operating Method/Mode) (limit to 200 characters):		

H. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION
(Regulated Emissions Units Only - Emissions Limited Pollutants Only)**Pollutant Detail Information:**

1. Pollutant Emitted: NOX		
2. Total Percent Efficiency of Control:		%
3. Potential Emissions:	15 lb/hour	30.3 tons/year
4. Synthetically Limited? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No		
5. Range of Estimated Fugitive/Other Emissions: <input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 _____ to _____ tons/yr		
6. Emission Factor: 55 lb/Mgal Reference: AP-42		
7. Emissions Method Code: <input type="checkbox"/> 0 <input type="checkbox"/> 1 <input type="checkbox"/> 2 <input checked="" type="checkbox"/> 3 <input type="checkbox"/> 4 <input type="checkbox"/> 5		
8. Calculation of Emissions (limit to 600 characters): See Part B		
9. Pollutant Potential/Estimated Emissions Comment (limit to 200 characters):		

Emissions Unit Information Section 1 _____ of _____ 1
Allowable Emissions (Pollutant identified on front page)

A.

1. Basis for Allowable Emissions Code:		
2. Future Effective Date of Allowable Emissions:		
3. Requested Allowable Emissions and Units:		
4. Equivalent Allowable Emissions:	lb/hour	tons/year
5. Method of Compliance (limit to 60 characters):		
6. Pollutant Allowable Emissions Comment (Desc. of Related Operating Method/Mode) (limit to 200 characters):		

B.

1. Basis for Allowable Emissions Code:		
2. Future Effective Date of Allowable Emissions:		
3. Requested Allowable Emissions and Units:		
4. Equivalent Allowable Emissions:	lb/hour	tons/year
5. Method of Compliance (limit to 60 characters):		
6. Pollutant Allowable Emissions Comment (Desc. of Related Operating Method/Mode) (limit to 200 characters):		

H. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION
(Regulated Emissions Units Only - Emissions Limited Pollutants Only)**Pollutant Detail Information:**

1. Pollutant Emitted: CO		
2. Total Percent Efficiency of Control:		%
3. Potential Emissions:	1.4 lb/hour	6.1 tons/year
4. Synthetically Limited? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No		
5. Range of Estimated Fugitive/Other Emissions: <input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 _____ to _____ tons/yr		
6. Emission Factor: 35 lb/MMft³ Reference: AP-42		
7. Emissions Method Code: <input type="checkbox"/> 0 <input type="checkbox"/> 1 <input type="checkbox"/> 2 <input checked="" type="checkbox"/> 3 <input type="checkbox"/> 4 <input type="checkbox"/> 5		
8. Calculation of Emissions (limit to 600 characters): See Part B		
9. Pollutant Potential/Estimated Emissions Comment (limit to 200 characters):		

Emissions Unit Information Section 1 of 1
Allowable Emissions (Pollutant identified on front page)

A.

1. Basis for Allowable Emissions Code:		
2. Future Effective Date of Allowable Emissions:		
3. Requested Allowable Emissions and Units:		
4. Equivalent Allowable Emissions:	lb/hour	tons/year
5. Method of Compliance (limit to 60 characters):		
6. Pollutant Allowable Emissions Comment (Desc. of Related Operating Method/Mode) (limit to 200 characters):		

B.

1. Basis for Allowable Emissions Code:		
2. Future Effective Date of Allowable Emissions:		
3. Requested Allowable Emissions and Units:		
4. Equivalent Allowable Emissions:	lb/hour	tons/year
5. Method of Compliance (limit to 60 characters):		
6. Pollutant Allowable Emissions Comment (Desc. of Related Operating Method/Mode) (limit to 200 characters):		

I. VISIBLE EMISSIONS INFORMATION
(Regulated Emissions Units Only)**Visible Emissions Limitations:** Visible Emissions Limitation 1 of 2

1.	Visible Emissions Subtype: VE20
2.	Basis for Allowable Opacity: <input checked="" type="checkbox"/> Rule <input type="checkbox"/> Other
3.	Requested Allowable Opacity Normal Conditions: 20 % Exceptional Conditions: % Maximum Period of Excess Opacity Allowed: min/hour
4.	Method of Compliance: Annual visible emissions test using EPA Method 9
5.	Visible Emissions Comment (limit to 200 characters): Rule 62-296.320(4)(b)

Visible Emissions Limitations: Visible Emissions Limitation ____ of ____

1.	Visible Emissions Subtype:
2.	Basis for Allowable Opacity: <input type="checkbox"/> Rule <input type="checkbox"/> Other
3.	Requested Allowable Opacity Normal Conditions: % Exceptional Conditions: % Maximum Period of Excess Opacity Allowed: min/hour
4.	Method of Compliance:
5.	Visible Emissions Comment (limit to 200 characters):

J. CONTINUOUS MONITOR INFORMATION
(Regulated Emissions Units Only)**Continuous Monitoring System** Continuous Monitor 1 of 5

1. Parameter Code: FLOW	2. Pollutant(s):
3. CMS Requirement: <input checked="" type="checkbox"/> Rule <input type="checkbox"/> Other	
4. Monitor Information: Monitor Manufacturer: Model Number: Serial Number:	
5. Installation Date:	
6. Performance Specification Test Date:	
7. Continuous Monitor Comment (limit to 200 characters): Monitoring required by 40 CFR 60, Subpart V. Parameter Code: 30% phosphoric acid to sump 'C' line. Only applies when producing DAP.	

Continuous Monitoring System Continuous Monitor 2 of 5

1. Parameter Code: FLOW	2. Pollutant(s):
3. CMS Requirement: <input checked="" type="checkbox"/> Rule <input type="checkbox"/> Other	
4. Monitor Information: Monitor Manufacturer: Model Number: Serial Number:	
5. Installation Date:	
6. Performance Specification Test Date:	
7. Continuous Monitor Comment (limit to 200 characters): Monitoring required by 40 CFR 60, and Subpart V. Parameter Code: 50% phosphoric acid to reactor 'A' line. Only applies when producing DAP.	

J. CONTINUOUS MONITOR INFORMATION
(Regulated Emissions Units Only)**Continuous Monitoring System** Continuous Monitor 3 of 5

1. Parameter Code: FLOW	2. Pollutant(s):
3. CMS Requirement: <input checked="" type="checkbox"/> Rule <input type="checkbox"/> Other	
4. Monitor Information: Monitor Manufacturer: Model Number: Serial Number:	
5. Installation Date:	
6. Performance Specification Test Date:	
7. Continuous Monitor Comment (limit to 200 characters): Monitoring required by 40 CFR 60, Subpart V. Parameter Code: 50% phosphoric acid to reactor 'B' line. Only applies when producing DAP.	

Continuous Monitoring System Continuous Monitor 4 of 5

1. Parameter Code: PRS	2. Pollutant(s):
3. CMS Requirement: <input checked="" type="checkbox"/> Rule <input type="checkbox"/> Other	
4. Monitor Information: Monitor Manufacturer: Model Number: Serial Number:	
5. Installation Date:	
6. Performance Specification Test Date:	
7. Continuous Monitor Comment (limit to 200 characters): Monitoring required by 40 CFR 60, Subpart V. Parameter Code: delta P across Dryer Tailgas scrubber. Only applies when producing DAP.	

J. CONTINUOUS MONITOR INFORMATION
(Regulated Emissions Units Only)**Continuous Monitoring System** Continuous Monitor 5 of 5

1. Parameter Code: PRS	2. Pollutant(s):
3. CMS Requirement: <input checked="" type="checkbox"/> Rule <input type="checkbox"/> Other	
4. Monitor Information: Monitor Manufacturer: Model Number: Serial Number:	
5. Installation Date:	
6. Performance Specification Test Date:	
7. Continuous Monitor Comment (limit to 200 characters): Monitoring required by 40 CFR 60, Subpart V. Parameter Code: delta P across Cooler scrubber. Only applies when producing DAP.	

Continuous Monitoring System Continuous Monitor _____ of _____

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

**K. PREVENTION OF SIGNIFICANT DETERIORATION (PSD) INCREMENT
TRACKING INFORMATION
(Regulated and Unregulated Emissions Units)**

PSD Increment Consumption Determination

1. Increment Consuming for Particulate Matter or Sulfur Dioxide?

If the emissions unit addressed in this section emits particulate matter or sulfur dioxide, answer the following series of questions to make a preliminary determination as to whether or not the emissions unit consumes PSD increment for particulate matter or sulfur dioxide. Check the first statement, if any, that applies and skip remaining statements.

- ☒ The emissions unit is undergoing PSD review as part of this application, or has undergone PSD review previously, for particulate matter or sulfur dioxide. If so, emissions unit consumes increment.
- ☐ The facility addressed in this application is classified as an EPA major source pursuant to paragraph (c) of the definition of "major source of air pollution" in Chapter 62-213, F.A.C., and the emissions unit addressed in this section commenced (or will commence) construction after January 6, 1975. If so, baseline emissions are zero, and the emissions unit consumes increment.
- ☐ The facility addressed in this application is classified as an EPA major source and the emissions unit began initial operation after January 6, 1975, but before December 27, 1977. If so, baseline emissions are zero, and the emissions unit consumes increment.
- ☐ For any facility, the emissions unit began (or will begin) initial operation after December 27, 1977. If so, baseline emissions are zero, and emissions unit consumes increment.
- ☐ None of the above apply. If so, the baseline emissions of the emissions unit are nonzero. In such case, additional analysis, beyond the scope of this application, is needed to determine whether changes in emissions have occurred (or will occur) after the baseline date that may consume or expand increment.

2. Increment Consuming for Nitrogen Dioxide?

If the emissions unit addressed in this section emits nitrogen oxides, answer the following series of questions to make a preliminary determination as to whether or not the emissions unit consumes PSD increment for nitrogen dioxide. Check first statement, if any, that applies and skip remaining statements.

- ☐ The emissions unit addressed in this section is undergoing PSD review as part of this application, or has undergone PSD review previously, for nitrogen dioxide. If so, emissions unit consumes increment.
- ☐ The facility addressed in this application is classified as an EPA major source pursuant to paragraph (c) of the definition of "major source of air pollution" in Chapter 62-213, F.A.C., and the emissions unit addressed in this section commenced (or will commence) construction after February 8, 1988. If so, baseline emissions are zero, and the source consumes increment.
- ☐ The facility addressed in this application is classified as an EPA major source and the emissions unit began initial operation after February 8, 1988, but before March 28, 1988. If so, baseline emissions are zero, and the source consumes increment.
- ☐ For any facility, the emissions unit began (or will begin) initial operation after March 28, 1988. If so, baseline emissions are zero, and the emissions unit consumes increment.
- ☒ None of the above apply. If so, baseline emissions of the emissions unit are nonzero. In such case, additional analysis, beyond the scope of this application, is needed to determine whether changes in emissions have occurred (or will occur) after the baseline date that may consume or expand increment.

3.	Increment Consuming/Expanding Code:			
PM	<input type="checkbox"/> C	<input checked="" type="checkbox"/> E	<input type="checkbox"/> Unknown	
SO ₂	<input checked="" type="checkbox"/> C	<input type="checkbox"/> E	<input type="checkbox"/> Unknown	
NO ₂	<input checked="" type="checkbox"/> C	<input type="checkbox"/> E	<input type="checkbox"/> Unknown	
4.	Baseline Emissions:			
PM	lb/hour		tons/year	
SO ₂	lb/hour		tons/year	
NO ₂			tons/year	
5.	PSD Comment (limit to 200 characters):			

L. EMISSIONS UNIT SUPPLEMENTAL INFORMATION
(Regulated Emissions Units Only)

Supplemental Requirements for All Applications

1.	Process Flow Diagram	<input checked="" type="checkbox"/> Attached, Document ID: <u>See Part B</u>	<input type="checkbox"/> Waiver Requested
		<input type="checkbox"/> Not Applicable	
2.	Fuel Analysis or Specification	<input checked="" type="checkbox"/> Attached, Document ID: <u>CB-EU1-L2</u>	<input type="checkbox"/> Waiver Requested
		<input type="checkbox"/> Not Applicable	
3.	Detailed Description of Control Equipment	<input checked="" type="checkbox"/> Attached, Document ID: <u>See Part B</u>	<input type="checkbox"/> Waiver Requested
		<input type="checkbox"/> Not Applicable	
4.	Description of Stack Sampling Facilities	<input type="checkbox"/> Attached, Document ID: _____	<input type="checkbox"/> Waiver Requested
		<input checked="" type="checkbox"/> Not Applicable	
5.	Compliance Test Report	<input type="checkbox"/> Attached, Document ID: _____	<input checked="" type="checkbox"/> Not Applicable
		<input type="checkbox"/> Previously Submitted, Date: _____	
6.	Procedures for Startup and Shutdown	<input type="checkbox"/> Attached, Document ID: _____	<input checked="" type="checkbox"/> Not Applicable
7.	Operation and Maintenance Plan	<input type="checkbox"/> Attached, Document ID: _____	<input checked="" type="checkbox"/> Not Applicable
8.	Supplemental Information for Construction Permit Application	<input checked="" type="checkbox"/> Attached, Document ID: <u>See Part B</u>	<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

Additional Supplemental Requirements for Category I Applications Only

10. Alternative Methods of Operation
<input type="checkbox"/> Attached, Document ID: _____ <input type="checkbox"/> Not Applicable
11. Alternative Modes of Operation (Emissions Trading)
<input type="checkbox"/> Attached, Document ID: _____ <input type="checkbox"/> Not Applicable
12. Identification of Additional Applicable Requirements
<input type="checkbox"/> Attached, Document ID: _____ <input type="checkbox"/> Not Applicable
13. Compliance Assurance Monitoring Plan
<input type="checkbox"/> Attached, Document ID: _____ <input type="checkbox"/> Not Applicable
14. Acid Rain Permit 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"/> Not Applicable

ATTACHMENT CB-EU1-B6
EMISSIONS UNIT COMMENT

ATTACHMENT CB-EU1-B6
EMISSIONS UNIT COMMENT

There exists a potential for fugitive emissions of PM, PM₁₀, NH₃, and F to occur from this emissions unit. It is our understanding, based on past FDEP interpretations and permitting history, that these emissions are not regulated under federal/state/local emission standards. These fugitive emissions are addressed in Emission Unit No. 9 of the Title V permit application.

ATTACHMENT CB-EU1-L2
FUEL ANALYSIS OR SPECIFICATION

ATTACHMENT CB-E01-L2

Fuel Analysis

Fuel	Density (lb/scf)	Moisture (%)	Weight % Sulfur	Weight % Nitrogen	Weight % Ash	Heat Capacity
No. 6 Fuel Oil	8.33	< 0.01	1.5	0.18	0.02	147,000 Btu/gal
Natural Gas	0.048	< 0.01	< 0.001	0.62	--	1,000 Btu/scf

PART B

1.0 INTRODUCTION

Cargill Fertilizer, Inc., is proposing to modify the existing No. 3 Fertilizer Plant at its phosphate fertilizer manufacturing facility located in Bartow, Florida. The No. 3 Fertilizer Plant can produce Diammonium Phosphate (DAP) or Monoammonium Phosphate (MAP). The modifications will improve product quality and allow the No. 3 Fertilizer plant to increase the maximum production rate from 2,640 tons per day (TPD) [110 tons per hour (TPH)] of MAP/DAP to 3,000 TPD of MAP/DAP. As a result of this production rate increase, an increase in the actual particulate matter (PM), PM with an aerodynamic diameter of 10 microns or less (PM_{10}), sulfur dioxide (SO_2), fluoride (F) and other pollutant emissions will occur.

Based on the requested maximum emissions for the affected source, the proposed modification will constitute a major modification at a major stationary source under current federal and state air quality regulations. This report addresses the requirements of the prevention of significant deterioration (PSD) review procedures pursuant to rules and regulations implementing the Clean Air Act (CAA) Amendments of 1977. The Florida Department of Environmental Protection (FDEP) has PSD review and approval authority in Florida. Based on the PSD source applicability analysis, a PSD review is indicated for PM, PM_{10} , and F.

This application contains six additional sections. A complete description of the project, including air emission rates, is presented in Section 2.0. The air quality review requirements and new source review applicability of the project are discussed in Section 3.0.

Ambient monitoring requirements under PSD are addressed in Section 4.0. The best available control technology (BACT) analysis is presented in Section 5.0. The air quality impact analysis and impacts on soils, vegetation and visibility required as part of the PSD permitting process are addressed in Sections 6.0 and 7.0, respectively.

2.0 PROJECT DESCRIPTION

Cargill Fertilizer Inc., operates a phosphate fertilizer facility located west of Bartow, Florida (see Figure 2-1). Cargill is proposing to upgrade the existing No. 3 Fertilizer Plant to improve product quality and increase plant production. The plant has reached the point where production can not be increased without extensive modifications.

The No. 3 Fertilizer Plant is currently operating under Permit No. AO53-169781, issued Dec. 22, 1989 (see attachments). The location of the No. 3 Fertilizer Plant at Cargill is shown in Figure 2-2, which is a plot plan of the Cargill facility (Source ID is "#3 DAP PLANT").

2.1 DESCRIPTION OF CURRENT PROCESS

Phosphate fertilizers are manufactured at the No. 3 Fertilizer Plant (a flow diagram of the existing MAP/DAP process is shown in Figure 2-3). The plant manufactures MAP/DAP by reacting phosphoric acid with anhydrous ammonia in a reactor. This slurry is fed to the granulator where granules of MAP/DAP are formed. The vapor/gases from the reactor and granulator are evacuated in individual ducting, but converge at the reactor/granulator acid venturi scrubber, where ammonia is recovered by spraying phosphoric acid into the unit. This solution is recovered and sent back to the reactor. The reactor/granulator acid scrubber is then evacuated into an intermediate tailgas scrubber and then into a final plant RGCV tailgas scrubber via a main blower fan and discharged into the plant common stack.

Next, much of the moisture in the MAP/DAP material is driven off in the dryer using heated air. This air/vapor stream is evacuated to the dryer acid scrubber, where most of the entrained particulate and ammonia vapor is recovered and returned to the process. The dryer acid scrubber is evacuated through the dryer ejector scrubber and then through the plant tailgas scrubber.

The fertilizer granules from the dryer are then sent through a series of screens where the desired product sized granule is separated from the oversized and undersized granules. These granules are then recycled with the oversized material crushed via chain mills. Dust from the screening operation is vented to the cooler/equipment vents scrubber.

Next, the temperature of the product sized granules is lowered in an air cooled rotary cooler. The air in the rotary cooler and the equipment vents are evacuated through the cooler/equipment vent acid scrubber and then through the plant tailgas scrubber. From the rotary cooler, the fertilizer passes through a bulk cooler and is then sent to storage in the No. 3 Shipping Plant.

The MAP/DAP reaction is carried out in a rotating cylindrical reactor-granulator. Fluoride emissions are evolved as a result of the chemical reaction. PM and PM₁₀ emissions result from the contact between the MAP/DAP material and the air passed through the granulator, dryer, and cooler, screens, bucket elevators, etc.

2.2 DESCRIPTION OF PROPOSED MODIFICATION

Cargill is proposing to increase MAP/DAP production to 3,000 TPD at the No. 3 Fertilizer Plant. A flow diagram of the proposed process is presented in Figure 2-4. Cargill is proposing the following physical modifications to the existing No. 3 Fertilizer Plant:

1. Replace reactor/granulator acid scrubber with larger venturi-cyclonic scrubber. This unit will recover ammonia and dust from the reactor and equipment vents, and will be called the Reactor/Vent (RV) acid scrubber.
2. Eliminate the intermediate reactor/granulator tailgas scrubber and dryer eject scrubber.
3. Replace the dryer acid scrubber with a larger venturi-cyclonic vessel.
4. Install new dryer dust cyclone.
5. Install new dryer tailgas scrubber to remove F emissions.
6. Install new dryer evacuation fan.
7. Convert the cooler/equipment vent acid scrubber to serve the rotary cooler only. This scrubber will use pond water as the scrubbing solution.
8. Convert the cooler/equipment vent dust cyclone to serve the equipment vents only.
9. Convert the dryer dust cyclone into a cooler dust cyclone.
10. Install a new venturi-cyclonic acid scrubber for the granulator.

Other changes may be identified as final engineering progresses on the plant upgrade

2.3 EMISSIONS AND STACK PARAMETERS

The No. 3 Fertilizer Plant at Cargill is currently subject to a PM emission limit of 30 lb/hr as specified in permit No. AO53-169781. The current fluoride emission limit for the No. 3 Fertilizer Plant is the lesser of 0.06 lb/ton P_2O_5 reacted based on 40 CFR 60, Subpart V, or 1.8 lb/hr. The current permit limitations for the No. 3 Fertilizer Plant at Cargill are summarized in Table 2-1.

The proposed permit limitations for the expanded MAP/DAP units are also presented in Table 2-1. It is proposed to reduce the current allowable limit for PM from 30.0 lb/hr to 11.6 lb/hr, or 0.19 lb/ton P_2O_5 input. Cargill also proposes an allowable fluoride emissions of 2.5 lb/hr, which equates to 0.041 lb/ton P_2O_5 input at the maximum process rate. The basis for these limits as BACT is presented in Section 5.0.

Stack parameters for both the current and expanded No. 3 Fertilizer Plant are presented in Table 2-2. The existing stack at Cargill serving the No. 3 Fertilizer Plant will be utilized for the expanded plant. The stack parameters shown in Table 2-2 were used in the modeling analysis to determine the net increase in impacts due to the proposed expansion, as well as the total ambient impacts due to the expanded plant.

Burners with a maximum heat input of 40.0 MMBtu/hr will provide the dryer unit with heat. Natural gas and No. 6 residual oil with a maximum sulfur content of 1.5 percent are currently permitted as fuel sources for this unit. Cargill proposes the use of natural gas as primary fuel, and No. 6 residual fuel oil with a maximum sulfur content of 1.5 percent as a backup fuel. The maximum gas usage for the No. 3 Fertilizer plant will be approximately 40,000 scf/hr of natural gas. Natural gas is the primary fuel source and will be used most of the time. No. 6 fuel oil or better grade oil is proposed as a stand-by fuel in case of natural gas interruption.

Air emissions due to fuel combustion are presented in Table 2-3 for nitrogen oxides (NO_x), sulfur dioxide (SO₂), carbon monoxide (CO), and volatile organic compounds (VOC). Estimated emissions from fuel combustion were developed using factors specified in the Environmental Protection Agency's (EPA) Compilation of Air Pollution Emission Factors (AP-42) (see Attachment A). Emissions are presented for natural gas and No. 6 fuel oil use. Fuel oil use will be limited to 339,000 gallons per year. Current maximum operating hours for the No. 3 Fertilizer Plant are 8,760 hr/yr, and Cargill proposes no changes to the maximum hours of operation.

3.0 SOURCE APPLICABILITY

3.1 PSD REVIEW

3.1.1 POLLUTANT APPLICABILITY

The Cargill Bartow facility is considered to be an existing major stationary facility because potential emissions of certain regulated pollutants exceed 100 TPY (for example, potential PM emissions currently exceed 100 TPY). As a result, PSD review is required for the proposed modification for each pollutant for which the net increase in emissions exceeds the PSD significant emission rates (i.e., a major modification; see Table 3-1).

The net increase in actual emissions due to the proposed expansion is shown in Table 3-2. Based on current federal and state PSD rules, the net increase in emissions is based upon comparing current actual emissions to future potential emissions from all affected emissions units. The "affected" emissions units for the proposed modification consist of the No. 3 Fertilizer Plant and any other upstream or downstream emissions units whose actual emissions would increase due to the proposed expansion. Potentially affected upstream emissions units include the sulfuric acid plants and molten sulfur handling system, and the phosphoric acid plant. Potentially affected downstream emissions units consist of the No. 3 Shipping Plant (MAP/DAP from the No. 3 Fertilizer Plant is shipped through the No. 3 Shipping Plant).

The phosphoric acid plant and associated fluosilicic acid (FSA) recovery operation at Bartow will be affected by the proposed expansion, since additional phosphoric acid will be required for the increased MAP/DAP production. The No. 3 Shipping Plant will also be affected since the amount of MAP/DAP product sent through the shipping unit will increase.

However, the sulfuric acid plants at Bartow will not be affected by the proposed No. 3 Fertilizer Plant expansion. Although the No. 3 Fertilizer Plant will use additional phosphoric acid, which requires additional sulfuric acid, Cargill currently purchases significant amounts of sulfuric acid from outside sources. For example, during the period

July 1997 through the present (1-year period), Cargill Riverview imported 204,000 tons of sulfuric acid, while the Cargill Bartow facility imported 251,000 tons of sulfuric acid. Together, the two plants purchased and imported 455,000 tons of sulfuric acid over the last year. Although a recently proposed increase in the sulfuric acid production rate at Cargill's Riverview plant could offset some of these purchases, Cargill will continue to purchase sulfuric acid. Therefore, the sulfuric acid plants at Bartow will continue to operate as in the past. A PSD review and BACT determination was previously conducted on the Bartow sulfuric acid plants in November 1995 (Permit No. AC53-271436; PSD-FL-229).

The increase in emissions associated with the phosphoric acid plant and the No. 3 Shipping Plant have been included in the PSD source applicability analysis, shown in Table 3-2. As shown, the increase in PM/PM₁₀ emissions is 51.7 TPY, and the increase in F emissions is 11.6 TPY. The increase in PM/PM₁₀ and F emissions exceed the PSD significant emission rates. Therefore, the proposed project is subject to PSD review for these pollutants.

3.1.2 AMBIENT MONITORING

Based upon the increase in emissions from Cargill's proposed project, a PSD preconstruction ambient monitoring analysis is required for PM₁₀ and F. However, if the increase in impacts of a pollutant is less than the *de minimis* monitoring concentration, then an exemption from the preconstruction ambient monitoring requirement may be granted for that pollutant. In addition, if an acceptable ambient monitoring method for the pollutant has not been established by EPA, monitoring is not required.

For PM₁₀, the maximum 24-hour impact due to the proposed expansion is 15 micrograms per cubic meter ($\mu\text{g}/\text{m}^3$) (refer to Section 6.0). The increase in impacts is above the *de minimis* monitoring concentration of $10 \mu\text{g}/\text{m}^3$. In addition, there is no *de minimis* monitoring concentration for F. As a result, the proposed modification can not be exempted from the preconstruction monitoring requirements for F.

3.1.3 GEP STACK HEIGHT ANALYSIS

The GEP stack height regulations allow any stack to be at least 65 m [213 feet (ft)] high. The No. 3 Fertilizer plant at Cargill is an existing source with a stack less than 65 m. The stack

height of the existing No. 3 Fertilizer plant is 125 feet and will not be increased. As a result, the *de minimis* GEP stack height will not be exceeded.

3.1.4 BEST AVAILABLE CONTROL TECHNOLOGY

The federal PSD regulations as promulgated in 40 CFR 52.21(j)(3) states that BACT is applied only to those emission units that are being physically modified, or for which there is a change in the method of operation, due to the proposed project. The rule quote is provided below:

"A major modification shall apply best available control technology for each pollutant subject to regulation under the Act for which it would result in a significant net emissions increase at the source. This requirement applies to each proposed emissions unit at which a net emissions increase in the pollutant would occur as a result of a physical change or change in the method of operation in the unit."

Therefore, BACT review only applies to the No. 3 Fertilizer Plant for the proposed expansion. A BACT determination is not required for the phosphoric acid plant or the No. 3 Shipping Plant as a result of the proposed project, even though they are required to be included in the PSD source applicability determination, since these emissions units are not undergoing a physical or operational change.

3.2 NON-ATTAINMENT REVIEW

The Cargill facility is located in Polk county, which has been designated as an attainment area for PM₁₀ and F. As a result, non-attainment review does not apply to the proposed project.

3.3 NEW SOURCE PERFORMANCE STANDARDS

Federal NSPS have been promulgated for new and modified DAP plants (40CFR 60, Subpart V). The NSPS currently apply to the Nos. 3 Fertilizer Plant, and will continue to apply in the future. The NSPS limit is 0.06 lb/ton P₂O₅ for F emissions.

4.0 AMBIENT MONITORING ANALYSIS

4.1 INTRODUCTION

In accordance with requirements of 40 CFR 52.21(m) and Rule 62-212.400(5)(f), F.A.C., any application for a PSD permit must contain an analysis of continuous ambient air quality data in the area affected by the proposed major stationary facility or major modification. For a new major facility, the affected pollutants are those that the facility potentially would 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 1 year is generally appropriate to satisfy the PSD monitoring requirements. A minimum of 4 months of data is required. Existing data from the vicinity of the proposed source may be used if the data meet certain quality assurance requirements; otherwise, additional data may need to be gathered. Guidance in designing a PSD monitoring network is provided in EPA's Ambient Monitoring Guidelines for Prevention of Significant Deterioration (EPA, 1987).

An exemption from the preconstruction ambient monitoring requirements is also available if certain criteria are met. If the predicted increase in ambient concentrations due to the proposed modification is less than specified *de minimis* concentrations, then the modification can be exempted from the preconstruction air monitoring requirements for that pollutant.

The PSD *de minimis* monitoring concentration for PM₁₀ is 10 µg/m³, 24-hour average. The predicted increase in PM₁₀ concentrations due to the proposed modification only are presented in Section 6.0. The predicted PM₁₀ increase is 15 µg/m³, 24-hour average. Since the predicted increase in PM₁₀ impacts due to the proposed modification is greater than the *de minimis* monitoring concentration level, a preconstruction air monitoring analysis requirements for PM₁₀. The analysis is presented in the following section.

4.2 PM₁₀ AMBIENT MONITORING BACKGROUND CONCENTRATIONS

4.2.1 VICINITY OF CARGILL

The PSD ambient monitoring guidelines allow the use of existing data to satisfy preconstruction review requirements and to develop background concentrations. "Background concentrations" are defined as concentrations due to sources other than those specifically included in the modeling analysis. For PM₁₀, background would include other point sources not included in the modeling (i.e., faraway sources or small sources), fugitive emission sources, and natural background sources.

Presented in Table 4-1 is a summary of existing ambient PM/PM₁₀ data for monitors located in the vicinity of Cargill's Bartow facility. Data are presented for the last 12 months of record in 1997. As shown the PM₁₀ monitor was operation in the vicinity of Cargill's Bartow facility during this period.

The monitoring data shows that ambient PM₁₀ concentrations were well below the ambient air quality standards of 150 $\mu\text{g}/\text{m}^3$, maximum 24-hour average, and 50 $\mu\text{g}/\text{m}^3$, annual average. For purposes of an ambient PM₁₀ background concentration for use in the modeling analysis, the annual average PM₁₀ concentration of 18 $\mu\text{g}/\text{m}^3$ was used. This concentration was utilized for both the 24-hour and annual average background PM₁₀ concentrations in the air quality impact analysis.

4.2.2 CHASSAHOWITZKA CLASS I AREA

Presented in Table 4-2 is a summary of existing ambient PM/PM₁₀ data for monitors located in the vicinity of the Chassahowitzka Class I area. One PM monitor was located adjacent to Chassahowitzka in Crystal River during 1996, and one PM₁₀ monitor was located directly in Chassahowitzka in 1996.

The monitors show that ambient PM₁₀ concentrations were well below the ambient air quality standards of 150 $\mu\text{g}/\text{m}^3$, maximum 24-hour average, and 50 $\mu\text{g}/\text{m}^3$, annual average. For purposes of an ambient PM₁₀ background concentration for use in the modeling analysis for the Class I area, the annual average PM₁₀ concentration of 20 $\mu\text{g}/\text{m}^3$ and the maximum

-
- 24-hour concentration of $49 \mu\text{g}/\text{m}^3$ recorded at the Chassahowitzka monitor during 1996 was selected. This would represent a very conservative background concentration since this monitor would be influenced somewhat by point sources, such as the Florida Power Corp. Crystal River plant.

5.0 BACT ANALYSIS

5.1 REQUIREMENTS

The 1977 Clean Air Act Amendments established requirements for the approval of preconstruction permit applications under the PSD program. One of these requirements is that the best available control technology (BACT) be installed for applicable pollutants. BACT determinations must be made on a case-by-case basis considering technical, economic, energy, and environmental impacts for various BACT alternatives. To bring consistency to the BACT process, the EPA developed the so called "top-down" approach to BACT determinations. This approach has been challenged in court and a settlement agreement reached that requires EPA to initiate formal rulemaking on the "top-down" approach. However, EPA has not yet promulgated rules which address this approach. Nonetheless, in the absence of formal rules related to this approach, the "top-down" approach is followed in the Cargill BACT analysis.

The first step in a "top-down" BACT analysis is to determine, for each applicable pollutant, the most stringent control alternative available for a similar source or source category. If it can be shown that this level of control is not feasible on the basis of technical, economic, energy, or environmental impacts for the source in question, then the next most stringent level of control is identified and similarly evaluated. This process continues until the BACT level under consideration cannot be eliminated by any technical, economic, energy, or environmental consideration.

In the case of the proposed modification at Cargill, PM/PM₁₀ and fluoride require BACT analysis. The following sections presents the BACT analysis.

5.2 PROPOSED CONTROL TECHNOLOGY

The No. 3 Fertilizer Plant will be equipped with six scrubbers following the proposed modification. ^{Four} ~~Three~~ will be new scrubbers while two are existing. The scrubbers will be designed with the following operating parameters:

-
1. Reactor/Vents Acid Scrubber (new)
Outlet Temperature 160°F
Outlet Flow Rate 69,000 ACFM
Pressure Drop 15 in. H₂O
Recovery Solution Flow Rate 1,250 gpm

 2. Granulator Acid Scrubber (new)
Outlet Temperature 160°F
Outlet Flow Rate 50,800 ACFM
Pressure Drop 16 in. H₂O
Recovery Solution Flow Rate 800 gpm

 3. Cooler Venturi-Cyclonic Scrubber (existing)
Outlet Temperature 86°F
Outlet Flow Rate 38,500 ACFM
Pressure Drop 15 in. H₂O
Water Flow Rate 660 gpm

 4. R.G.C.V. Tailgas Scrubber (existing)
Outlet Temperature 139°F
Outlet Flow Rate 154,500 ACFM
Pressure Drop 4 in. H₂O
Pond Water Flow Rate 4,600 gpm

 5. Dryer Acid Scrubber (New)
Outlet Temperature 170°F
Outlet Flow Rate 70,000 ACFM
Pressure Drop 16 in. H₂O
Recovery Solution Flow Rate 1,100 gpm

6. Dryer Tailgas Scrubber (new)

Outlet Temperature	157°F
Outlet Flow Rate	70,000 ACFM
Pressure Drop	5 in. H ₂ O
Pond Water Flow Rate	1,600 gpm

Currently the existing scrubber system is achieving lower emission rates than required by permit AO53-169781 (i.e. 0.06 lb/ton P₂O₅ or 1.8 lb/hr). As shown in Table 5-1, emission rates range from 0.007 to 0.092 lb/ton P₂O₅ for PM and from 0.013 to 0.053 lb/ton P₂O₅ for F. However, the increased production rate for the proposed modification will increase the loading to the scrubbers and as a result may increase emissions. Therefore, an emission limit of 0.19 lb/ton P₂O₅ for PM is proposed as the future limits. For fluorides, an emission limit of 2.5 lb/hr is proposed, equivalent to 0.041 lb/ton P₂O₅ input. These limits represent total emissions from all Process Recovery Units (PRU's) and wet scrubbers, as measured at the common stack.

5.3 BACT ANALYSIS FOR PM/PM₁₀

BACT for PM/PM₁₀ for the proposed No. 3 Fertilizer Plant is the proposed system consisting of two plant tailgas scrubbers using pond water, four venturi/cyclonic acid scrubbers recovering ammonia.

A review of previous BACT determinations for PM emissions from MAP plants and DAP plants was conducted. The results of this review is presented in Table 5-2. It is noted that determinations issued prior to 1991 are not included in Table 5-2.

As shown, the previous BACT determinations for MAP/DAP plants were all based on wet scrubber technology. This demonstrates that the two tailgas scrubbers and four venturi/cyclonic acid scrubbers, are the best control technology for application on the No. 3 Fertilizer Plant. Previous BACT determinations have resulted in emission limits ranging from 0.19 to 0.41 lb/ton P₂O₅ input for PM. The latest determination (IMC Agrico - New Wales; PSD-FL-241) resulted in an overall PM/PM₁₀ limit of 0.29 lb/ton P₂O₅. Cargill's

proposed PM/PM₁₀ emission rate for the No. 3 Fertilizer Plant is 11.6 lb/hr is equivalent to 0.19 lb/ton P₂O₅ input and 0.093 lb/ton MAP/DAP produced.

A previous BACT determination for a DAP plant (IMC-Agrico- New Wales; PSD-FL-241) addressed alternatives for PM/PM₁₀ control. The alternatives addressed consisted of a high energy (>30 in.w.c) venturi scrubber and a medium-energy (15-30 in.w.c.) venturi scrubber. The IMC plant employs an existing medium-energy venturi scrubbing system. The high costs of adding a high-energy venturi scrubbing system was deemed economically infeasible with incremental cost effectiveness ranging from \$50,000 to \$75,000 per incremental ton of PM/PM₁₀ removed. As a result, the high-energy venturi scrubber option was found to be infeasible, and the existing medium-energy venturi scrubber was selected as BACT.

Cargill currently employs medium-energy scrubbers on its No. 3 Fertilizer Plant, and the modified plant will also employ medium energy scrubbers. Similar to the above analysis, the use of high-energy scrubbers would not be cost effective. Therefore, medium-energy wet/venturi scrubber represents BACT for the Cargill No. 3 Fertilizer Plant. Since actual PM/PM₁₀ emissions from the No. 3 Fertilizer Plant have been well below the allowable emission rate of 30.0 lb/hr, Cargill is proposing to lower the allowable to 11.6 lb/hr, even considering the production rate increase.

5.4 BACT ANALYSIS FOR FLUORIDES

BACT for F emissions for the proposed No. 3 Fertilizer Plant is the proposed emissions control system consisting of two tailgas scrubbers and four venturi/cyclonic acid scrubbers.

A review of previous BACT determinations for F emissions from MAP and DAP plants was conducted. The results of this review is presented in Table 5-3. It is noted that determinations issued prior to 1991 are not included in Table 5-3.

As shown, the previous BACT determinations were all based on wet scrubber technology. This demonstrates that two tailgas scrubbers and four venturi/cyclonic acid scrubbers, are the best control technology for application on the No. 3 Fertilizer Plant. Previous BACT

determinations for F emissions have resulted in emission limits ranging from 0.0417 to 0.06 lb/ton P_2O_5 input. Cargill's proposed F emission rate for the No. 3 Fertilizer Plant is 2.5 lb/hr, equivalent to 0.041 lb/ton P_2O_5 input.

A previous BACT determination for a DAP plant (IMC-Agrico- New Wales; PSD-FL-241) addressed alternatives for F control. The alternatives included a packed scrubber using either once-through fresh water, neutralized water from a dedicated pond (fresh water makeup), or process cooling pond water. The first option was dismissed due to concern over fresh water usage and plant water balance problems. The second option was dismissed based on economics, with the cost effectiveness estimated at \$14,000 per ton of F removed. In Cargill's case, the first two options can be dismissed based on similar considerations. This leaves the third option, using process cooling pond water in the scrubbers, as BACT.

6.0 AIR QUALITY IMPACT ANALYSIS

Note: Currently PM10 emission inventory information is being obtained from FDEP. This section will be provided when the modeling analysis is completed.

7.0 ADDITIONAL IMPACT ANALYSIS

Note: Currently PM10 emission inventory information is being obtained from FDEP. This section will be provided when the modeling analysis is completed.

Table 2-1. Current and Proposed Permit Limitations for No. 3 Fertilizer Plant, Cargill Fertilizer, Inc.

	Particulate Matter	Fluorides
<u>CURRENT LIMITATIONS</u>		
Production Rate (MAP/DAP produced)	2,640 TPD	2,640 TPD
Operating Hours	8,760 hr/yr	8,760 hr/yr
Emission Limit	30.0 lb/hr	0.06 lb/ton P ₂ O ₅ ; 1.8 lb/hr
Hourly Emissions	30.0 lb/hr	1.8 lb/hr
Annual Emissions	131.4 TPY	7.88 TPY
<u>PROPOSED LIMITATIONS</u>		
Production Rate (MAP/DAP produced)	3,000 TPD	3,000 TPD
Process Rate (P ₂ O ₅ Input)	1,470 TPD P ₂ O ₅	1,470 TPD P ₂ O ₅
Operating Hours	8,760 hr/yr	8,760 hr/yr
Emission Limit	0.19 lb/ton P ₂ O ₅	0.041 lb/ton P ₂ O ₅
Hourly Emissions	11.6 lb/hr	2.5 lb/hr
Annual Emissions	50.98 TPY	10.95 TPY

Notes:

lb/hr = pounds per hour
lb/ton = pounds per ton
TPD = tons per day
TPY = tons per year

Table 2-2. Stack Parameters for Existing and Expanded No. 3 Fertilizer Plant

	MAP/DAP Production Rate ^a (TPD)	Stack Height (ft)	Stack Diameter (ft)	Gas Flow Rate (acfm)	Gas Velocity (fps)	Gas Temperature (°F)
<u>Existing Conditions</u>	2,640	125	7.5	108,000	39.5	160
<u>Future Conditions</u>	3,000	125	7.5	210,000	79.2	160

Note: acfm = actual cubic feet per minute.
 °F = degrees Fahrenheit.
 fps = feet per second.
 ft = feet.
 TPD = tons per hour.

Table 2-3. Summary of Maximum Emissions from Fuel Combustion, No. 3 Fertilizer Plant

Parameter	No. 2 Fuel Oil	Natural Gas			
OPERATING DATA					
Operating Time (hr/yr)	400	8,760			
Combined Heat Input Rate (MMBtu/hr)	40.00	40.00			
Fuel Oil Use (gal/hr) ^a	272.1	NA			
Fuel Oil Use (gal/yr)	338,000	NA			
Maximum Sulfur Content (Wt %)	1.5	NA			
Natural Gas Use (scf/hr)	NA	40,000			
Natural Gas Use (MMscf/yr)	NA	350.40			
EMISSIONS DATA					
Pollutant	Emission Factor ^b	No. 6 Fuel Oil	Natural Gas	Maximum Annual Emissions (TPY)	
		lb/hr	lb/hr	Fuel oil and Natural Gas	100% Natural Gas
SO ₂ : Fuel Oil	157* ^c lb/Mgal	64.1	0.024	39.9	0.11
Natural Gas	0.6 lb/MMft ³				
NO _x : Fuel Oil	55 lb/Mgal	15.0	5.60	30.3	24.5
Natural Gas	140 lb/MMft ³				
CO: Fuel Oil	5 lb/Mgal	1.36	1.40	6.1	6.13
Natural Gas	35 lb/MMft ³				
NM VOC: Fuel Oil	0.28 lb/Mgal	0.076	0.11	0.47	0.49
Natural Gas	2.8 lb/MMft ^{3,d}				

Note: NA = not applicable.

These emissions are discharged through the mill stacks 5 and 9.

TPY = tons per year.

^a Based on 147,000 Btu/gal for 0.5% S oil; 1000 BTU/SCF for Natural Gas.

^b Emission factors based on AP-42.

^c "S" denotes the weight % sulfur in fuel oil; max sulfur content = 0.5%

^d Methane comprises 52% of total VOC

Table 3-1. PSD Significant Emission Rates and *De Minimis* Monitoring Concentrations

Pollutant	Regulated Under	Significant Emission Rate (TPY)	<i>De Minimis</i> Monitoring Concentration ($\mu\text{g}/\text{m}^3$)
Sulfur Dioxide	NAAQS, NSPS	40	13, 24-hour
Particulate Matter (TSP)	NSPS	25	NA
Particulate Matter (PM10)	NAAQS	15	10, 24-hour
Nitrogen Oxides	NAAQS, NSPS	40	14, annual
Carbon Monoxide	NAAQS, NSPS	100	575, 8-hour
Volatile Organic Compounds (Ozone)	NAAQS, NSPS	40	100 TPY ^a
Lead	NAAQS	0.6	0.1, 3-month
Sulfuric Acid Mist	NSPS	7	NM
Total Fluorides	NSPS	3	0.25, 24-hour
Mercury	NESHAP	0.1	0.25, 24-hour
Total Reduced Sulfur	NSPS	10	10, 1-hour
Reduced Sulfur Compounds	NSPS	10	10, 1-hour
Hydrogen Sulfide	NSPS	10	0.2, 1-hour
MWC Organics (as dioxification)	NSPS	3.5×10^{-6}	NA
MWC Metals (as PM)	NSPS	15	NA
MWC Acid Gases (as $\text{SO}_2 + \text{HCl}$)	NSPS	40	NA
MSW Landfill Emission (as NMVOC)	NSPS	50	NA

Note: Ambient monitoring requirements for any pollutant may be exempted if the impact of the increase in emissions is below *de minimis* monitoring concentrations.

- MWC = Municipal waste combustor
- MSW = Municipal solid waste
- NA = Not Applicable
- NAAQS = National Ambient Air Quality Standards
- NESHAP = National Emission Standards for Hazardous Air Pollutants
- NM = No ambient measurement method
- NSPS = New Source Performance Standards
- PM10 = particulate matter with aerodynamic diameter less than or equal to 10 micrometers
- PSD = prevention of significant deterioration
- TPY = tons per year
- TSP = total suspended particulate matter
- $\mu\text{g}/\text{m}^3$ = micrograms per cubic meter

^a No *de minimis* concentration; an increase in VOC emissions of 100 TPY or more will require monitoring analysis for ozone.

Table 3-2. PSD Source Applicability Analysis, Cargill No.3 Fertilizer Plant Expansion

Emission Scenario	Emission Rate (TPY)						
	PM	PM10	F	SO ₂	VOC	NO _x	CO
<u>Current Actual Emissions</u>							
No. 3 Fertilizer plant	7.5 (a)	7.5 (a)	5.47 (a)	0.030 (b)	0.13 (b)	6.72 (b)	1.68 (b)
No. 4 Phosphoric Acid Plant	--	--	1.47	--	--	--	--
No. 3 Filter (d)	--	--	1.26	--	--	--	--
No. 5 Phosphoric Acid Plant	--	--	0.63	--	--	--	--
No. 3 Shipping Plant (f)	4.47	4.47	--	--	--	--	--
Total	11.97	11.97	8.83	0.03	0.13	6.72	1.68
<u>Proposed Maximum Emissions</u>							
No. 3 Fertilizer plant @ 3,0	51.98 (g)	51.98 (g)	10.95 (g)	39.9 (h)	0.49 (h)	24.52 (h)	6.1 (h)
Phosphoric Acid Plant (i)	--	--	10.01	--	--	--	--
No. 3 Shipping Plant (j)	12.0	12.0	--	--	--	--	--
Total	63.98	63.98	20.96	39.9	0.49	24.52	6.1
<u>Total Net Increase</u>	52.0	52.0	12.1	39.9	0.4	17.8	4.4
<u>PSD Significant Emission Ra</u>	25	15	3	40	40	40	100

Notes:

F = fluoride.

MMscf = million standard cubic feet.

- (a) Based on average hours of operation during 1996 and 1997 of 7,981.5 hours and 7,454.2 hours, respectively, and annual stack test results (two tests in 1997) as follows:
1996: PM-1.63 lb/hr; F-1.74 lb/hr
1997: PM-2.52 lb/hr; F-1.07 lb/hr
- (b) Based on average No. 3 Fertilizer plant natural gas usage during 1996 and 1997 of 98.1 MMscf and 94.0 MMscf, respectively, and AP-42 factors.
- (c) Based on average hours of operation during 1996 and 1997 of 8,015 hours and 8,277 hours, respectively, and annual stack test results (two tests in 1997) as follows:
1996: F-0.319 lb/hr
1997: F-0.402 lb/hr
- (d) Based on average hours of operation for the No. 4 Phosphoric Acid Plant during 1996 and 1997 of 8,015 hours and 8,277 hours, respectively, and annual stack test results (two tests in 1997) as follows:
1996: F-0.113 lb/hr
1997: F-0.196 lb/hr
- (e) Based on average hours of operation during 1996 and 1997 of 8,057 hours and 8,313 hours, respectively, and annual stack test results (two tests in 1997) as follows:
1996: F-0.337 lb/hr
1997: F-0.254 lb/hr
- (f) Based on average hours of operation during 1996 and 1997 of 2,825.15 hours and 2,942.5 hours, respectively, and annual stack test results as follows:
1996: PM-3.1 lb/hr
1997: PM- compliance test waived due to the use of dust suppressant oil system
- (g) Proposed emission rates are 11.6 lb/hr for PM; and 2.5 lb/hr for fluoride.
- (h) Based on a maximum heat input of 40 MMBtu/hr for 8,760 hr/yr.
- (i) Based on combined F emission limit for Nos. 4 and 5 Phosphoric Acid Plants and No. 3 Filter of 2.29 lb/hr, from permit no. AC53-26253
- (j) Based on PM/PM10 emission limit of 12 lb/hr and 12 TPY, from permit No. AO53-185367.

Table 4-1. Summary of PM10 Monitoring Data Collected Near Cargill's Bartow Facility

Year	County	Station ID	Monitor Location	Number of Observations	Maximum Concentrations Reported (μg/m³)	
					24-Hour	Annual
<u>PM10 Data</u>						
1997	Polk	3680-010-F02	Anderson & Pine-Crest Road, Nichols	63	41	18 ^a

^a Geometric mean concentration.

Table 4-2. Summary of PM/PM10 Monitoring Data Collected Near the Chassahowitzka NWA

Year	County	Station ID	Monitor Location	Number of Observations	Maximum Concentrations Reported (µg/m³)	
					24-Hour	Annual
<u>PM Data</u>						
1996	Citrus	0580-003-J09	Crystal River; Twin Rivers Marina	58	75	30 ^a
<u>PM10 Data</u>						
1996	Citrus	National Park Service	Within Chassahawitzka NWA	104	49	19.5

^a Geometric mean concentration.

Table 5-1. Summary of No. 3 Fertilizer Plant Stack Test Data, Cargill Fertilizer Bartow

Date	DAP Production Rate (TPH)	P ₂ O ₅ Input (TPH)	PM Emissions		Fluoride Emissions	
			lb/hr	lb/ton P ₂ O ₅	lb/hr	lb/ton P ₂ O ₅
05/07/98	98.3	47.9	3.7	0.078	1.27	0.0265
09/11/97	104.0	50.2	4.6	0.092	1.71	0.0341
06/09/97	71.5	32.9	0.415	0.013	0.43	0.0131
11/27/96	72.0	34.8	1.6	0.047	1.74	0.0500
12/07/95	70.3	33.0	1.5	0.044	0.67	0.0203
05/25/95	78.0	35.9	0.248	0.007	0.09	0.0025
12/01/94	65.4	30.1	1.8	0.028	1.60	0.0532
04/06/94	95.0	46.2	4.0	0.042	0.61	0.0132

Source: stack test data

Notes:

TPH = tons per hour

lb/ton = pounds per ton

lb/hr = pounds per hour

P₂O₅ = phosphorous pentoxide

Table 5-2. Summary of BACT Determinations for PM Emissions from Ammonium Phosphate Plants

Company	Permit #	Permit Issue Date	Throughput	Emission Limit	Control Equipment	Control Efficiency
CARGILL FERTILIZER, INC. --Tampa	AC29-196763; PSD-FL-178	11/26/91	73.5 *TPH P2O5	0.19 lb/ton P2O5	VENTURI SCRUBBER	99%
IMC-AGRICO --New Wales	1050059-020-AC; PSD-FL-241	01/21/98	80 TPH P2O5	0.29 lb/ton P2O5; 23.08 lb/hr total	PACKED BED SCRUBBER	--
CARGILL FERTILIZER --Bartow	AC53-246403; PSD-FL-211	11/28/94	120 TPH P2O5	0.19 lb/ton P2O5	PACKED BED SCRUBBER	--
IMC-AGRICO COMPANY --Nichols	AC53-230355; AC53-232681; PSD-FL-204	04/18/94	100 TPH DAP	0.41 lb/ton 100% P2O5	VENTURI ACID SCRUBBER	--

Source: EPA's RACT/BACT/LAER Clearinghouse, 1998.

Notes:

DAP = Diammonium Phosphate

MAP = Monoammonium Phosphate

* Original permit for 67.2 TPH; was later amended.

Table 5-3. Summary of BACT Determinations for Fluoride Emissions from Ammonium Phosphate Plants

Company	Permit #	Permit Issue Date	Throughput	Emission Limit	Control Equipment	Control Efficiency
C F INDUSTRIES, INC.	AC 29-210979	05/25/92	100 TPH MAP/DAP	0.06 lb/ton P2O5	TWO STAGE SCRUBBER, ADDITION OF COOLER	99.8%
FARMLAND HYDRO, L.P.	AC53-210886; PSD-FL-186	07/28/92	100 TPH DAP	0.06 lb/ton P2O5	MULTI STAGE SCRUBBER, ADDITION OF COOLER	99.9%
FARMLAND HYDRO, L.P.	AC53-210886; PSD-FL-186	07/28/92	120 TPH MAP	0.06 lb/ton P2O5	MULTI STAGE SCRUBBER, ADDITION OF COOLER	99.9%
IMC-AGRICO- New Wales	1050059-020-AC; PSD-FL-241	01/21/98	80 TPH P2O5	0.0417 lb/ton P2O5	PACKED BED SCRUBBER	99.0%
CARGILL FERTILIZER	AC29-196763; PSD-FL-178	11/26/91	73.5 * TPH P2O5	0.06 lb/ton P2O5	VENTURI SCRUBBER	--
IMC-AGRICO- Nichols	AC53-230355; AC53-232681; PSD-FL-204	04/18/94	100 TPH DAP	0.0417 lb/ton P2O5	VENTURI ACID SCRUBBER	--

Source: EPA's RACT/BACT/LAER Clearinghouse, 1998.

Notes:

DAP = Diammonium Phosphate

MAP = Monoammonium Phosphate

* Original permit for 67.2 TPH; was later amended.

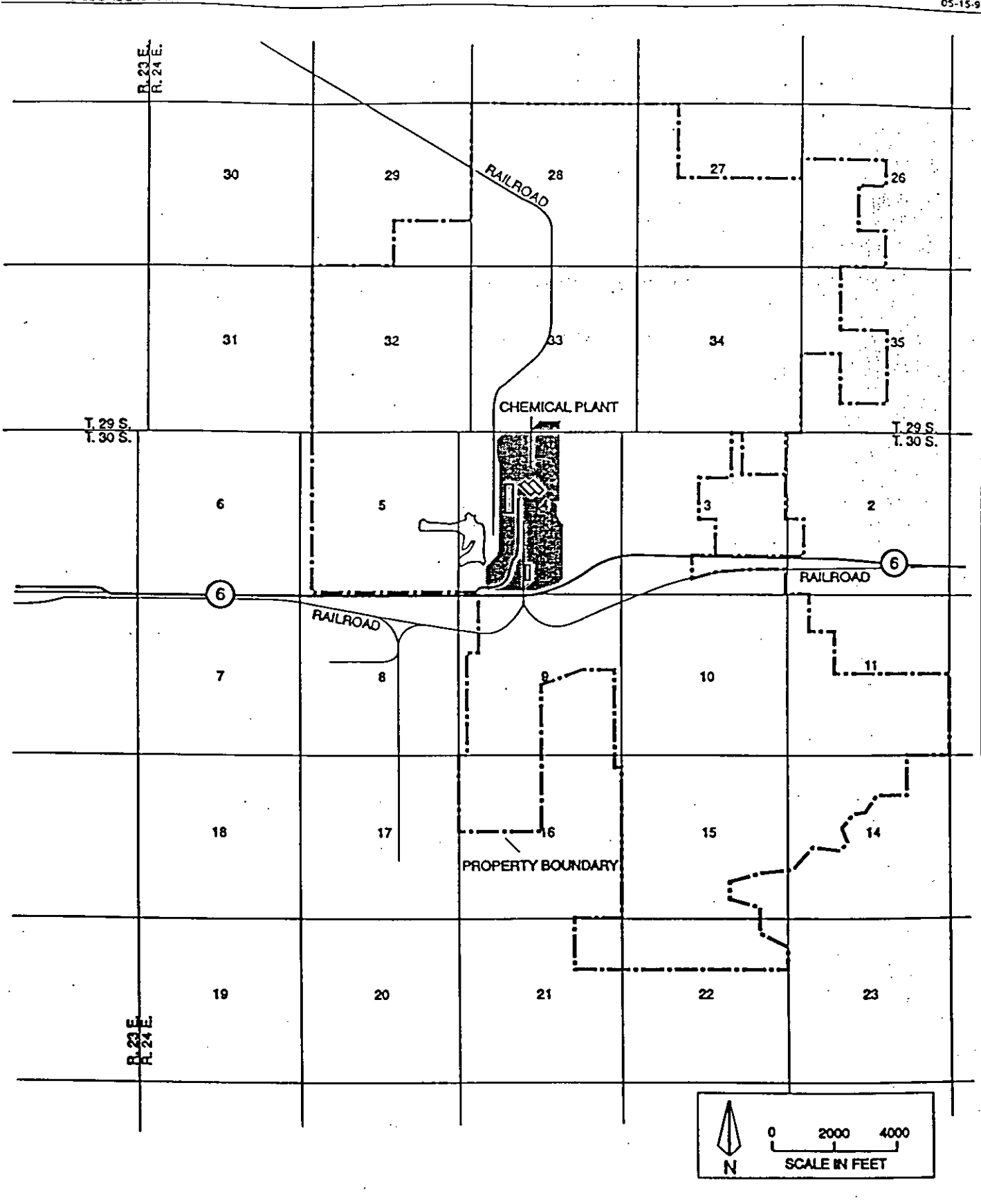
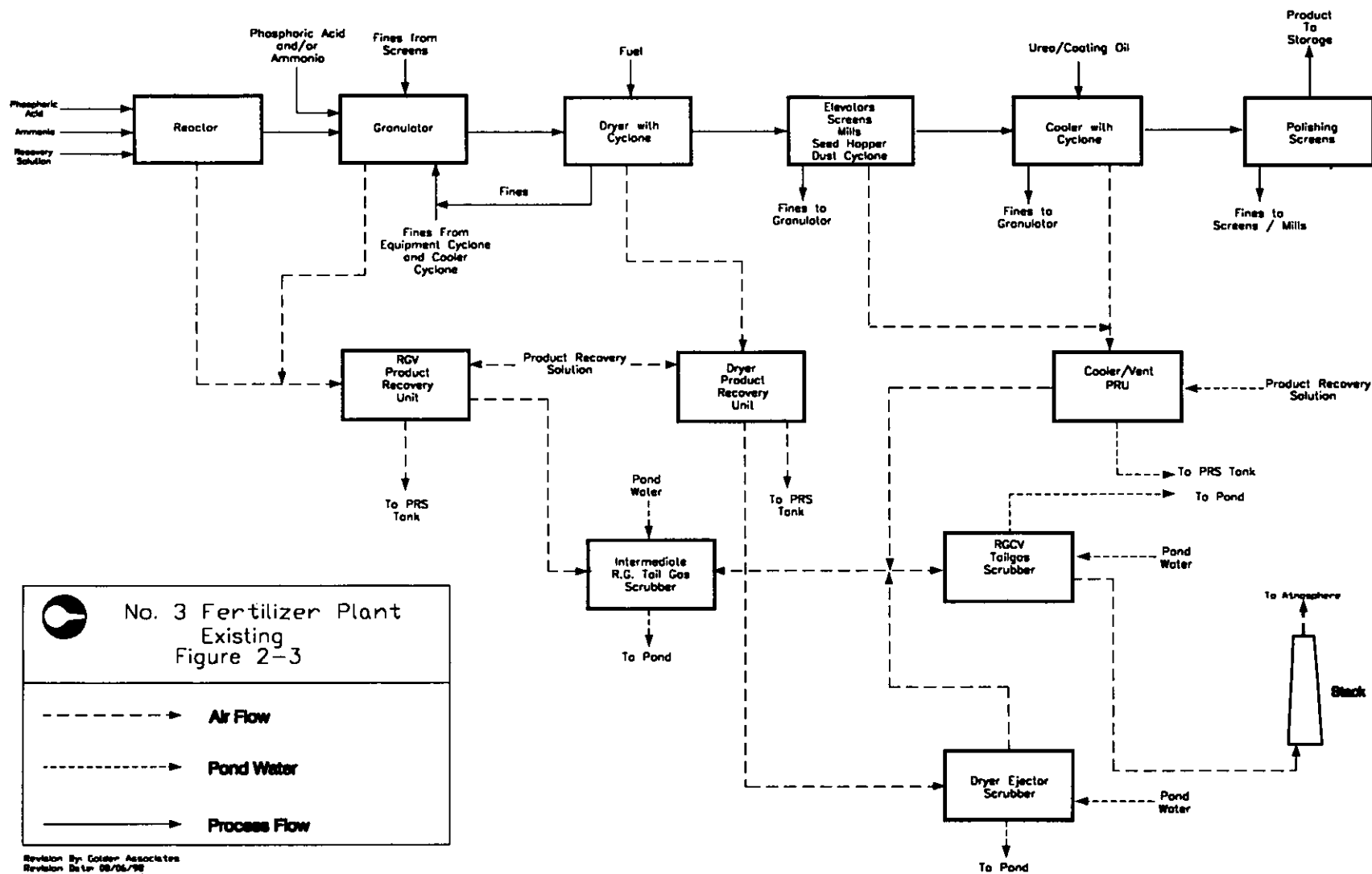


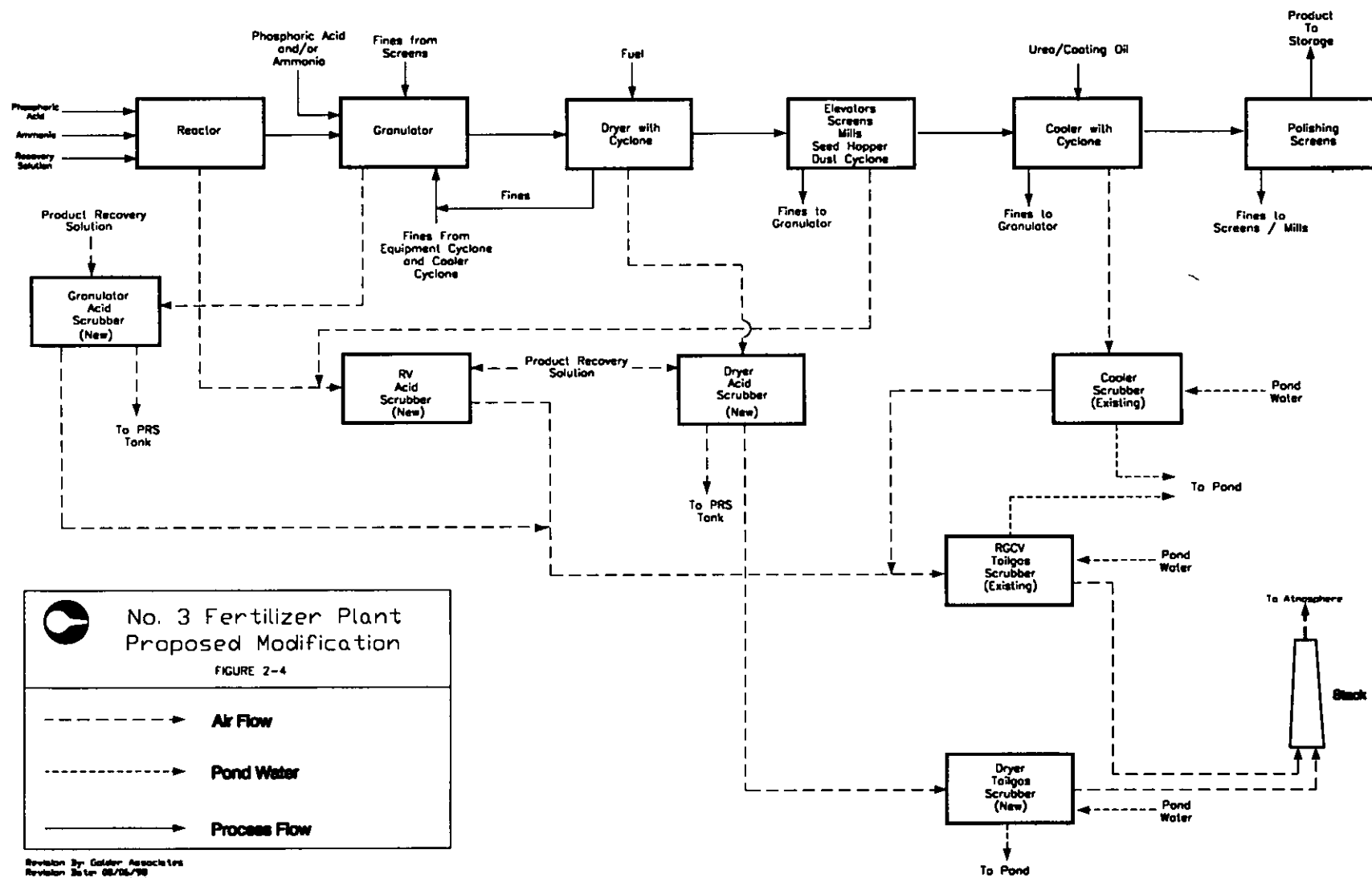
FIGURE 2-1
Area Map Showing Facility Location







Revision By: Collier Associates
Revision Date: 08/06/92
File Name: 3FERTCAL.DWG



Revision By: Golder Associates
Revision Date: 08/05/98
File Name: 3FERTCAL.DWG

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ATTACHMENT A

CRITERIA POLLUTANT EMISSION FACTORS

Table 1.3-1. CRITERIA POLLUTANT EMISSION FACTORS FOR UNCONTROLLED FUEL OIL COMBUSTION^a

Firing Configuration (SCC) ^a	SO ₂ ^b		SO ₃ ^c		NO _x ^d		CO ^{e,f}		Filterable PM ^g	
	Emission Factor (lb/10 ³ gal)	EMISSION FACTOR RATING	Emission Factor (lb/10 ³ gal)	EMISSION FACTOR RATING	Emission Factor (lb/10 ³ gal)	EMISSION FACTOR RATING	Emission Factor (lb/10 ³ gal)	EMISSION FACTOR RATING	Emission Factor (lb/10 ³ gal)	EMISSION FACTOR RATING
Utility boilers										
No. 6 oil fired, normal firing (1-01-004-01)	157S	A	5.7S	C	67	A	5	A	9.19(S)+3.22	A
No. 6 oil fired, tangential firing (1-01-004-04)	157S	A	5.7S	C	42	A	5	A	9.19(S)+3.22	A
No. 5 oil fired, normal firing (1-01-004-05)	157S	A	5.7S	C	67	A	5	A	10	B
No. 5 oil fired, tangential firing (1-01-004-06)	157S	A	5.7S	C	42	A	5	A	10	B
No. 4 oil fired, normal firing (1-01-005-04)	150S	A	5.7S	C	67	A	5	A	7	B
No. 4 oil fired, tangential firing (1-01-005-05)	150S	A	5.7S	C	42	A	5	A	7	B
No. 6 oil fired (1-02-004-01/02/03)	157S	A	2S	A	55	A	5	A	9.19(S)+3.22	A
No. 5 oil fired (1-02-004-04)	157S	A	2S	A	55	A	5	A	10	B
Distillate oil fired (1-02-005-01/02/03)	142S	A	2S	A	20	A	5	A	2	A
No. 4 oil fired (1-02-005-04)	150S	A	2S	A	20	A	5	A	7	B
Commercial/institutional										
No. 6 oil fired (1-03-004-01/02/03)	157S	A	2S	A	55	A	5	A	9.19(S)+3.22	A
No. 5 oil fired (1-03-004-04)	157S	A	2S	A	55	A	5	A	10	B
Distillate oil fired (1-03-005-01/02/03)	142S	A	2S	A	20	A	5	A	2	A
No. 4 oil fired (1-03-005-04)	150S	A	2S	A	20	A	5	A	7	B
Residential furnace (A2104004/A2104011)	142S	A	2S	A	18	A	5	A	0.4 ^h	B

Table 1.4-1. EMISSION FACTORS FOR SULFUR DIOXIDE (SO₂), NITROGEN OXIDES (NO_x), AND CARBON MONOXIDE (CO) FROM NATURAL GAS COMBUSTION^a

Combustor Type (Size, 10 ⁶ Btu/hr Heat Input) (SCC)	SO ₂ ^b		NO _x ^c		CO ^d		N ₂ O ^e	
	Emission Factor (lb/10 ⁶ ft ³)	EMISSION FACTOR RATING	Emission Factor (lb/10 ⁶ ft ³)	EMISSION FACTOR RATING	Emission Factor (lb/10 ⁶ ft ³)	EMISSION FACTOR RATING	Emission Factor (lb/10 ⁶ ft ³)	EMISSION FACTOR RATING
Utility/Large Industrial Boilers (>100) (1-01-006-01, 1-01-006-04)								
Uncontrolled	0.6	A	550 ^f	A	40	A	2.2	C
Controlled - Low NO _x burners	0.6	A	79	D	ND	NA	0.64	E
Controlled - Flue gas recirculation	0.6	A	53	D	ND	NA	NA	NA
Small Industrial Boilers (10 - 100) (1-02-006-02)								
Uncontrolled	0.6	A	140	A	35	A	2.2 ^g	E
Controlled - Low NO _x burners	0.6	A	83	D	61	D	0.64 ^g	E
Controlled - Flue gas recirculation	0.6	A	30	C	34	C	NA	NA
Commercial Boilers (0.3 - <10) (1-03-006-03)								
Uncontrolled	0.6	A	100	B	21	C	2.2 ^g	E
Controlled - Low NO _x burners	0.6	A	17	C	15	C	0.64 ^g	E
Controlled - Flue gas recirculation	0.6	A	36	D	ND	NA	NA	NA
Residential Furnaces (<0.3) (No SCC)								
Uncontrolled	0.6	A	94	B	40	B	NA	NA

^a Units are lb of pollutant/10⁶ cubic feet natural gas fired. To convert from lb/10⁶ ft³ to kg/10⁶ m³, multiply by 16.0. Based on an average natural gas fired higher heating value of 1000 Btu/scf. The emission factors in this table may be converted to other natural gas heating values by multiplying the given emission factor by the ratio of the specified heating value to this average heating value. SCC = Source Classification Code. ND = no data. NA = not applicable.

^b References 13-14. Based on average sulfur content of natural gas, 2000 gr/10⁶ scf.

^c References 12-13,15-19. Expressed as NO₂.

^d References 5,12-13,17-18,20-21.

^e References 6-7.

^f For tangentially fired units, use 275 lb/10⁶ ft³. Note: This number was originally developed for AP-42 based on limited data. No additional data are available to refine this number.

^g No data; based on the factors for utility boilers.