

Florida Department of Environmental Protection

Memorandum

TO: Trina Vielhauer, Chief
Bureau of Air Regulation

THROUGH: Jeff Koerner, Administrator *JK*
Air Permitting North Program

FROM: Syed Arif *Syed Arif 11/28*

DATE: November 28, 2007

SUBJECT: Draft Air Permit No. 1050059-055-AC
Mosaic Fertilizer, LLC, New Wales Plant
BART Project

Attached for your review are the following items:

- Cover letter;
- Written Notice of Intent to Issue Permit;
- Public Notice of Intent to Issue Permit;
- Technical Evaluation and Preliminary Determination;
- Draft Permit with Appendices; and
- PE Certification.

The Technical Evaluation and Preliminary Determination provides a detailed description of the project, rule applicability, and emissions standards. The P.E. certification briefly summarizes the proposed project. I recommend your approval of the attached draft permit for this project.

Attachments



Florida Department of Environmental Protection

Bob Martinez Center
2600 Blair Stone Road
Tallahassee, Florida 32399-2400

Charlie Crist
Governor

Jeff Kottkamp
Lt. Governor

Michael W. Sole
Secretary

PROFESSIONAL ENGINEER CERTIFICATION STATEMENT

PERMITTEE

Mosaic Fertilizer, LLC
P.O. Box 2000
Mulberry, FL 33860

Draft Air Permit No. 1050059-055-AC
New Wales Plant
BART Project
Polk County, Florida

PROJECT DESCRIPTION

Project: On January 31, 2007, Mosaic Fertilizer, LLC submitted an application to satisfy the requirements of Best Available Retrofit Technology (BART) in Rule 62-296.340, Florida Administrative Code (F.A.C.) for the existing New Wales Plant. The purpose of the BART regulation is to improve visibility in the Class I areas, which include six national parks and federal wildlife areas in and around Florida. The BART provisions apply to emissions units built between 1962 and 1977 at one of the 26 specified industrial categories that have the potential to emit more than 250 tons a year of visibility-impairing pollutants, which are defined as nitrogen oxides (NO_x), particulate matter (PM₁₀), and sulfur dioxide (SO₂).

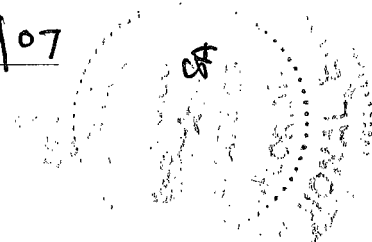
The BART regulation requires a control technology review to establish a BART standard, which is an emission limitation based on the degree of reduction achievable through the application of the best system of continuous emission reduction for each pollutant which is emitted by a BART-eligible source. The emission limitation must be established, on a case-by case basis, taking into consideration the technology available, the costs of compliance, the energy and non-air quality environmental impacts of compliance, any pollution control equipment in use or in existence at the source, the remaining useful life of the source, and the degree of improvement in visibility which may reasonably be anticipated to result from the use of such technology. In addition, air dispersion modeling analysis is conducted to evaluate the visibility improvement.

The existing facility is a phosphate rock processing plants, which is one of the 26 specified categories subject to regulation. The BART-eligible units at this facility include: EU002 - #1 Sulfuric Acid Plant (SAP), EU003 - #2 SAP, EU004 - #3 SAP, EU009 - #1 Diammonium Phosphate (DAP) Plant, EU011 - Monoammonium Phosphate (MAP) Plant, EU015 - Animal Feed Ingredient (AFI) Shipping/Truck Loading, EU023 - AFI Storage Silos (3) - North Side, EU024 - AFI Shipping/Rail Car Loading, EU025 - AFI Limestone Storage Silos (2), EU026 - AFI Silica Unloading & Storage, EU027 - AFI Plant, EU028 - AFI Storage Silos (3) - South Side, EU030 - Multifos Soda Ash Unloading System, EU031 - Multifos Soda Ash Conveying System, EU032 - Multifos 'A' Kiln Cooler, EU033 - Multifos 'B' Kiln Cooler, EU034 Multifos A and B Kilns Milling & Sizing - West Bag Collector, EU035 - Multifos A and B Kilns Milling & Sizing - East Bag Collector, EU036 - Multifos A and B Kilns, Dryer and Blending Operation, EU038 - Multifos A and B Kilns Milling & Sizing - Surge Bin Bag Collector, EU052 - AFI Limestone Feed Bin, EU055 - MAP Plant Cooler, EU063 - 1500 Ton Truck Unloading Sulfur Pit, EU066 - 200 Ton Molten Sulfur Transfer Pit, EU067 - 1500 Ton Truck Unloading Sulfur Pit - Front Vent, EU068 - 1500 Ton Truck Unloading Sulfur Pit - Rear Vent. The Department of Environmental Protection (Department) reviewed the application and made a preliminary determination regarding the BART controls and emissions standards which are listed in the Technical Evaluation and Preliminary Determination issued concurrently with the draft air construction permit. The draft air construction permit establishes BART standards based on these control methods.

I HEREBY CERTIFY that the air pollution control engineering features described in the above referenced application and subject to the proposed permit conditions provide reasonable assurance of compliance with applicable provisions of Chapter 403, Florida Statutes, and Florida Administrative Code Chapters 62-4 and 62-204 through 62-297. However, I have not evaluated and I do not certify aspects of the proposal outside of my area of expertise (including, but not limited to, the electrical, mechanical, structural, hydrological, geological, and meteorological features).

Syed Arif, P.E.
Registration Number: 51861

11/28/07
(Date)





Florida Department of Environmental Protection

Bob Martinez Center
2600 Blair Stone Road
Tallahassee, Florida 32399-2400

Charlie Crist
Governor

Jeff Kottkamp
Lt. Governor

Michael W. Sole
Secretary

November 28, 2007

Mr. Thomas W. Fuchs, Plant Manager
Mosaic Fertilizer, LLC
P.O. Box 2000
Mulberry, Florida 33860

Re: Draft Permit No. 1050059-055-AC
New Wales Plant
BART Project

Dear Mr. Fuchs:

On January 31, 2007, you submitted an application to satisfy the requirements of Best Available Retrofit Technology (BART) in Rule 62-296.340, Florida Administrative Code for the eligible units at the facility identified above. Enclosed are the following documents:

- The Technical Evaluation and Preliminary Determination summarizes the Permitting Authority's technical review of the application and provides the rationale for making the preliminary determination to issue a Draft Permit.
- The proposed Draft Permit includes the specific conditions that regulate the emissions units covered by the proposed project.
- The Written Notice of Intent to Issue Air Permit provides important information regarding: the Permitting Authority's intent to issue an air permit for the proposed project; the requirements for publishing a Public Notice of the Permitting Authority's intent to issue an air permit; the procedures for submitting comments on the Draft Permit; the process for filing a petition for an administrative hearing; and the availability of mediation.
- The Public Notice of Intent to Issue Air Permit is the actual notice that you must have published in the legal advertisement section of a newspaper of general circulation in the area affected by this project.

If you have any questions, please contact the Project Engineer, Syed Arif at 850/921-9528.

Sincerely,

Trina Vielhauer, Chief
Bureau of Air Regulation

Enclosures

TLV/sa

WRITTEN NOTICE OF INTENT TO ISSUE AIR PERMIT

*In the Matter of an
Application for Air Permit by:*

Mosaic Fertilizer, LLC
P.O. Box 2000
Mulberry, FL 33860

Draft Permit No. 1050059-055-AC
Facility ID No. 1050059
New Wales Plant
BART Project
Polk County, Florida

Authorized Representative:
Thomas W. Fuchs, Plant Manager

Facility Location: The applicant, Mosaic Fertilizer, LLC, operates the existing New Wales Plant, which is located in Polk County at 3095 Highway 640, Mulberry, Florida.

Project: On January 31, 2007, Mosaic Fertilizer, LLC submitted an application to satisfy the requirements of Best Available Retrofit Technology (BART) in Rule 62-296.340, Florida Administrative Code (F.A.C.) for the eligible units at the facility identified above. Details of the project are provided in the application and the enclosed Technical Evaluation and Preliminary Determination.

Permitting Authority: Applications for air construction permits are subject to review in accordance with the provisions of Chapter 403, Florida Statutes (F.S.) and Chapters F.A.C. 62-4, 62-210, and 62-212. The proposed project is not exempt from air permitting requirements and an air permit is required to perform the proposed work. The Bureau of Air Regulation is the Permitting Authority responsible for making a permit determination for this project. The Permitting Authority's physical address is: 111 South Magnolia Drive, Suite #4, Tallahassee, Florida. The Permitting Authority's mailing address is: 2600 Blair Stone Road, MS #5505, Tallahassee, Florida 32399-2400. The Permitting Authority's telephone number is 850/488-0114.

Project File: A complete project file is available for public inspection during the normal business hours of 8:00 a.m. to 5:00 p.m., Monday through Friday (except legal holidays), at address indicated above for the Permitting Authority. The complete project file includes the Draft Permit, the Technical Evaluation and Preliminary Determination, the application, and the information submitted by the applicant, exclusive of confidential records under Section 403.111, F.S. Interested persons may contact the Permitting Authority's project review engineer for additional information at the address or phone number listed above. In addition, electronic copies of these documents are available on the following web site: <http://www.dep.state.fl.us/air/eproducts/apds/default.asp>.

Notice of Intent to Issue Permit: The Permitting Authority gives notice of its intent to issue an air permit to the applicant for the project described above. The applicant has provided reasonable assurance that operation of the proposed equipment will not adversely impact air quality and that the project will comply with all appropriate provisions of Chapters 62-4, 62-204, 62-210, 62-212, 62-296, and 62-297, F.A.C. The Permitting Authority will issue a Final Permit in accordance with the conditions of the proposed Draft Permit unless a timely petition for an administrative hearing is filed under Sections 120.569 and 120.57, F.S. or unless public comment received in accordance with this notice results in a different decision or a significant change of terms or conditions.

Public Notice: Pursuant to Section 403.815, F.S. and Rules 62-110.106 and 62-210.350, F.A.C., you (the applicant) are required to publish at your own expense the enclosed Public Notice of Intent to Issue Air Permit (Public Notice). The Public Notice shall be published one time only as soon as possible in the legal advertisement section of a newspaper of general circulation in the area affected by this project. The newspaper used must meet the requirements of Sections 50.011 and 50.031, F.S. in the county where the activity is to take place. If you are uncertain that a newspaper meets these requirements, please contact the Permitting Authority at above address or phone number. Pursuant to Rule 62-110.106(5) and (9), F.A.C., the applicant shall provide proof of publication to the Permitting Authority at the above address within 7 days of publication. Failure to publish the notice and provide proof of publication may result in the denial of the permit pursuant to Rule 62-110.106(11), F.A.C.

Comments: The Permitting Authority will accept written comments concerning the proposed Draft Permit for a period of 30 days from the date of publication of the Public Notice. Written comments must be postmarked by the Permitting

WRITTEN NOTICE OF INTENT TO ISSUE AIR PERMIT

Authority by close of business (5:00 p.m.) on or before the end of this 30-day period. If written comments received result in a significant change to the Draft Permit, the Permitting Authority shall revise the Draft Permit and require, if applicable, another Public Notice. All comments filed will be made available for public inspection.

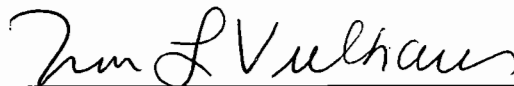
Petitions: A person whose substantial interests are affected by the proposed permitting decision may petition for an administrative hearing in accordance with Sections 120.569 and 120.57, F.S. The petition must contain the information set forth below and must be filed with (received by) the Department's Agency Clerk in the Office of General Counsel of the Department of Environmental Protection, 3900 Commonwealth Boulevard, Mail Station #35, Tallahassee, Florida 32399-3000. Petitions filed by the applicant or any of the parties listed below must be filed within 14 days of receipt of this Written Notice of Intent to Issue Air Permit. Petitions filed by any persons other than those entitled to written notice under Section 120.60(3), F.S., must be filed within 14 days of publication of the attached Public Notice or within 14 days of receipt of this Written Notice of Intent to Issue Air Permit, whichever occurs first. Under Section 120.60(3), F.S., however, any person who asked the Permitting Authority for notice of agency action may file a petition within 14 days of receipt of that notice, regardless of the date of publication. A petitioner shall mail a copy of the petition to the applicant at the address indicated above, at the time of filing. The failure of any person to file a petition within the appropriate time period shall constitute a waiver of that person's right to request an administrative determination (hearing) under Sections 120.569 and 120.57, F.S., or to intervene in this proceeding and participate as a party to it. Any subsequent intervention (in a proceeding initiated by another party) will be only at the approval of the presiding officer upon the filing of a motion in compliance with Rule 28-106.205, F.A.C.

A petition that disputes the material facts on which the Permitting Authority's action is based must contain the following information: (a) The name and address of each agency affected and each agency's file or identification number, if known; (b) The name, address, and telephone number of the petitioner; the name, address and telephone number of the petitioner's representative, if any, which shall be the address for service purposes during the course of the proceeding; and an explanation of how the petitioner's substantial interests will be affected by the agency determination; (c) A statement of when and how each petitioner received notice of the agency action or proposed decision; (d) A statement of all disputed issues of material fact. If there are none, the petition must so state; (e) A concise statement of the ultimate facts alleged, including the specific facts the petitioner contends warrant reversal or modification of the agency's proposed action; (f) A statement of the specific rules or statutes the petitioner contends require reversal or modification of the agency's proposed action including an explanation of how the alleged facts relate to the specific rules or statutes; and, (g) A statement of the relief sought by the petitioner, stating precisely the action the petitioner wishes the agency to take with respect to the agency's proposed action. A petition that does not dispute the material facts upon which the Permitting Authority's action is based shall state that no such facts are in dispute and otherwise shall contain the same information as set forth above, as required by Rule 28-106.301, F.A.C.

Because the administrative hearing process is designed to formulate final agency action, the filing of a petition means that the Permitting Authority's final action may be different from the position taken by it in this Written Notice of Intent to Issue Air Permit. Persons whose substantial interests will be affected by any such final decision of the Permitting Authority on the application have the right to petition to become a party to the proceeding, in accordance with the requirements set forth above.

Mediation: Mediation is not available in this proceeding.

Executed in Tallahassee, Florida.



Trina Vielhauer, Chief
Bureau of Air Regulation

WRITTEN NOTICE OF INTENT TO ISSUE AIR PERMIT

CERTIFICATE OF SERVICE

The undersigned duly designated deputy agency clerk hereby certifies that this Notice of Intent to Issue Air Permit package (including the Written Notice of Intent to Issue Air Permit, Public Notice of Intent to Issue Air Permit, the Technical Evaluation and Preliminary Determination, and the Draft Permit) was sent by electronic mail with received receipt requested before the close of business on 11/29/07 to the persons listed below.

Thomas W. Fuchs, Mosaic Fertilizer, LLC (tom.fuchs@mosaicco.com)
Dave Turley, Mosaic Fertilizer, LLC (david.turley@mosaicco.com)
Dave Buff, P.E., Golder Associates, Inc. (dbuff@golder.com)
C. Zhang-Torres, DEP-SWD (cindy.zhang-torres@dep.state.fl.us)
Katy Forney, EPA Region 4 (forney.kathleen@epa.gov)
Jim Little, EPA Region 4 (little.james@epa.gov)
Dee Morse, NPS (dee_morse@nps.gov)

Clerk Stamp

FILING AND ACKNOWLEDGMENT FILED, on this date, pursuant to Section 120.52(7), Florida Statutes, with the designated agency clerk, receipt of which is hereby acknowledged.

Mary L. Amory 11/29/07
(Clerk) (Date)

PUBLIC NOTICE OF INTENT TO ISSUE AIR PERMIT

Florida Department of Environmental Protection
Division of Air Resource Management, Bureau of Air Regulation
Draft Air Construction Permit No. 1050059-055-AC
Mosaic Fertilizer, LLC, New Wales Plant
Polk County, Florida

Applicant: The applicant for this project is Mosaic Fertilizer, LLC. The applicant's authorized representative and mailing address is: Thomas W. Fuchs, Plant Manager, Mosaic Fertilizer, LLC, P.O. Box 2000, Mulberry, Florida 33860.

Facility and Location: The applicant, Mosaic Fertilizer, LLC, operates the existing New Wales Plant, which is located in Polk County at 3095 Highway 640 in Mulberry, Florida. The applicant operates an existing phosphate complex, which processes phosphate rock to produce several products at the New Wales Plant.

Project: On January 31, 2007, Mosaic Fertilizer, LLC submitted an application to satisfy the requirements of Best Available Retrofit Technology (BART) in Rule 62-296.340, Florida Administrative Code (F.A.C.) for the existing New Wales Plant. The purpose of the BART regulation is to improve visibility in the Class I areas, which include six national parks and federal wildlife areas in and around Florida. The BART provisions apply to Emissions Units (EU) built between 1962 and 1977 at one of the 26 specified industrial categories that have the potential to emit more than 250 tons a year of visibility-impairing pollutants, which are defined as nitrogen oxides (NO_x), particulate matter (PM₁₀/PM_{2.5}), and sulfur dioxide (SO₂).

The BART regulation requires a control technology review to establish a BART standard, which is an emission limitation based on the degree of reduction achievable through the application of the best system of continuous emission reduction for each pollutant which is emitted by a BART-eligible source. The emission limitation must be established, on a case-by case basis, taking into consideration the technology available, the costs of compliance, the energy and non-air quality environmental impacts of compliance, any pollution control equipment in use or in existence at the source, the remaining useful life of the source, and the degree of improvement in visibility which may reasonably be anticipated to result from the use of such technology.

The BART-eligible units at this facility include: EU002 - #1 Sulfuric Acid Plant (SAP), EU003 - #2 SAP, EU004 - #3 SAP, EU009 - #1 Diammonium Phosphate (DAP) Plant, EU011 - Monoammonium Phosphate (MAP) Plant, EU015 - Animal Feed Ingredient (AFI) Shipping/Truck Loading, EU023 - AFI Storage Silos (3) - North Side, EU024 - AFI Shipping/Rail Car Loading, EU025 - AFI Limestone Storage Silos (2), EU026 - AFI Silica Unloading & Storage, EU027 - AFI Plant, EU028 - AFI Storage Silos (3) - South Side, EU030 - Multifos Soda Ash Unloading System, EU031 - Multifos Soda Ash Conveying System, EU032 - Multifos 'A' Kiln Cooler, EU033 - Multifos 'B' Kiln Cooler, EU034 Multifos A and B Kilns Milling & Sizing - West Bag Collector, EU035 - Multifos A and B Kilns Milling & Sizing - East Bag Collector, EU036 - Multifos A and B Kilns, Dryer and Blending Operation, EU038 - Multifos A and B Kilns Milling & Sizing - Surge Bin Bag Collector, EU052 - AFI Limestone Feed Bin, EU055 - MAP Plant Cooler, EU063 - 1500 Ton Truck Unloading Sulfur Pit, EU066 - 200 Ton Molten Sulfur Transfer Pit, EU067 - 1500 Ton Truck Unloading Sulfur Pit - Front Vent, EU068 - 1500 Ton Truck Unloading Sulfur Pit - Rear Vent. The Department of Environmental Protection (Department) reviewed the application and makes a preliminary determination regarding the BART controls and emissions standards in the draft air construction permit. The Department has determined that the existing controls and techniques constitute BART for the eligible BART units at this facility. The draft air construction permit establishes the new BART emissions standards based on installed controls and tested emissions rates.

Permitting Authority: Applications for air construction permits are subject to review in accordance with the provisions of Chapter 403, Florida Statutes (F.S.) and F.A.C. Chapters 62-4, 62-210, and 62-212. The proposed project is not exempt from air permitting requirements and an air permit is required to perform the proposed work. The Bureau of Air Regulation is the Permitting Authority responsible for making a permit determination for this project. The Permitting Authority's physical address is: 111 South Magnolia Drive, Suite #4, Tallahassee, Florida. The Permitting Authority's mailing address is: 2600 Blair Stone Road, MS #5505,

(Public Notice to be Published in the Newspaper)

PUBLIC NOTICE OF INTENT TO ISSUE AIR PERMIT

Tallahassee, Florida 32399-2400. The Permitting Authority's telephone number is 850/488-0114.

Project File: A complete project file is available for public inspection during the normal business hours of 8:00 a.m. to 5:00 p.m., Monday through Friday (except legal holidays), at address indicated above for the Permitting Authority. The complete project file includes the Draft Permit, the Technical Evaluation and Preliminary Determination, the application, and the information submitted by the applicant, exclusive of confidential records under Section 403.111, F.S. Interested persons may contact the Permitting Authority's project review engineer for additional information at the address and phone number listed above. In addition, electronic copies of these documents are available on the following web site: <http://www.dep.state.fl.us/air/eproducts/apds/default.asp>.

Notice of Intent to Issue Air Permit: The Permitting Authority gives notice of its intent to issue an air permit to the applicant for the project described above. The applicant has provided reasonable assurance that operation of proposed equipment will not adversely impact air quality and that the project will comply with all appropriate provisions of Chapters 62-4, 62-204, 62-210, 62-212, 62-296, and 62-297, F.A.C. The Permitting Authority will issue a Final Permit in accordance with the conditions of the proposed Draft Permit unless a timely petition for an administrative hearing is filed under Sections 120.569 and 120.57, F.S. or unless public comment received in accordance with this notice results in a different decision or a significant change of terms or conditions.

Comments: The Permitting Authority will accept written comments concerning the proposed Draft Permit for a period of 30 days from the date of publication of the Public Notice. Written comments must be postmarked by the Permitting Authority by close of business (5:00 p.m.) on or before the end of this 30-day period. If written comments received result in a significant change to the Draft Permit, the Permitting Authority shall revise the Draft Permit and require, if applicable, another Public Notice. All comments filed will be made available for public inspection.

Petitions: A person whose substantial interests are affected by the proposed permitting decision may petition for an administrative hearing in accordance with Sections 120.569 and 120.57, F.S. The petition must contain the information set forth below and must be filed with (received by) the Department's Agency Clerk in the Office of General Counsel of the Department of Environmental Protection at 3900 Commonwealth Boulevard, Mail Station #35, Tallahassee, Florida 32399-3000. Petitions filed by any persons other than those entitled to written notice under Section 120.60(3), F.S. must be filed within 14 days of publication of this Public Notice or receipt of a written notice, whichever occurs first. Under Section 120.60(3), F.S., however, any person who asked the Permitting Authority for notice of agency action may file a petition within 14 days of receipt of that notice, regardless of the date of publication. A petitioner shall mail a copy of the petition to the applicant at the address indicated above, at the time of filing. The failure of any person to file a petition within the appropriate time period shall constitute a waiver of that person's right to request an administrative determination (hearing) under Sections 120.569 and 120.57, F.S., or to intervene in this proceeding and participate as a party to it. Any subsequent intervention (in a proceeding initiated by another party) will be only at the approval of the presiding officer upon the filing of a motion in compliance with Rule 28-106.205, F.A.C.

A petition that disputes the material facts on which the Permitting Authority's action is based must contain the following information: (a) The name and address of each agency affected and each agency's file or identification number, if known; (b) The name, address and telephone number of the petitioner; the name address and telephone number of the petitioner's representative, if any, which shall be the address for service purposes during the course of the proceeding; and an explanation of how the petitioner's substantial rights will be affected by the agency determination; (c) A statement of when and how the petitioner received notice of the agency action or proposed decision; (d) A statement of all disputed issues of material fact. If there are none, the petition must so state; (e) A concise statement of the ultimate facts alleged, including the specific facts the petitioner contends warrant reversal or modification of the agency's proposed action; (f) A statement of the specific rules or statutes the petitioner contends require reversal or modification of the agency's proposed action including an explanation of how the alleged facts relate to the specific rules or statutes; and, (g) A statement of the relief sought by the petitioner, stating precisely the action the petitioner wishes the agency to take with respect to the agency's proposed action. A petition that does not dispute the material facts upon which the Permitting Authority's action

(Public Notice to be Published in the Newspaper)

PUBLIC NOTICE OF INTENT TO ISSUE AIR PERMIT

is based shall state that no such facts are in dispute and otherwise shall contain the same information as set forth above, as required by Rule 28-106.301, F.A.C.

Because the administrative hearing process is designed to formulate final agency action, the filing of a petition means that the Permitting Authority's final action may be different from the position taken by it in this Public Notice of Intent to Issue Air Permit. Persons whose substantial interests will be affected by any such final decision of the Permitting Authority on the application have the right to petition to become a party to the proceeding, in accordance with the requirements set forth above.

Mediation: Mediation is not available for this proceeding.

**TECHNICAL EVALUATION
&
PRELIMINARY DETERMINATION**

PROJECT

Draft Permit No. 1050059-055-AC
Best Available Retrofit Technology (BART)
Mosaic Fertilizer, LLC
Polk County, Florida

APPLICANT

Mosaic Fertilizer, LLC
P.O. Box 2000
Mulberry, Florida 33860

PERMITTING AUTHORITY

Air Permitting North Program
Bureau of Air Regulation
Division of Air Resource Management
Florida Department of Environmental Protection



November 27, 2007

TECHNICAL EVALUATION AND PRELIMINARY DETERMINATION

1. GENERAL PROJECT INFORMATION

Facility Description and Location

The Mosaic New Wales facility is a phosphate fertilizer manufacturing complex. The fertilizer complex processes phosphate rock into several different fertilizer products and animal feed ingredients. This is accomplished by the reaction of the phosphate rock with sulfuric acid to produce phosphoric acid and then converting the phosphoric acid to fertilizer and animal feed ingredient products. This facility consists of five double absorption sulfuric acid plants (SAP); three phosphoric acid plants (PAP); three diammonium phosphate (DAP) plants; monoammonium phosphate (MAP) plant; granular monoammonium phosphate (GMAP) Plant; animal feed ingredients (AFI) plant; Multifos production plant; molten sulfur system; AFI shipping -- truck and rail car loading; AFI storage silos; AFI limestone feed bin; AFI limestone storage silos; AFI silica unloading and storage; Shipping -- rail car and truck loading; Multifos soda ash unloading system; Multifos soda ash conveying system; three Multifos kiln coolers; Multifos milling and sizing system; three DAP plant coolers; phosphoric acid clarification and storage area; MAP plant cooler; limestone storage silo; and a phosphogypsum stack. This plant started operations in 1975, and is currently operating under the Title V Permit No. 1050059-045-AV, a draft of which was issued on November 2, 2006.

The Standard Industrial Classification (SIC) code for this type of plant is SIC No. 2874. The facility is located at 3095 Highway 640, Mulberry, Polk County. The project site is located about 104 kilometers from the Chassahowitzka National Wilderness Area, a Class I Area. The UTM coordinates of this facility are Zone 17; 396.6 km E; 3078.9 km N.

Regulatory Categories

This project is subject to the applicable environmental laws in Section 403 of the Florida Statutes (F.S.). The Florida Statutes authorize the Department of Environmental Protection (Department) to establish rules regarding air quality in the Florida Administrative Code (F.A.C.). The facility is classified according to the following major regulatory categories.

- The facility is a major source of hazardous air pollutants (HAP).
- The facility does not operate units subject to the acid rain provisions of the Clean Air Act.
- The facility is a Title V major source of air pollution in accordance with Chapter 213, F.A.C.
- The facility is a major stationary source pursuant to Rule 62-212.400, F.A.C. for the Prevention of Significant Deterioration (PSD) of Air Quality.
- The facility operates units subject to Rule 62-296.340 (BART), F.A.C., which requires a determination of the Best Available Retrofit Technology (BART) for each BART-eligible source as defined in 40 CFR 51.301.

Project Description

Mosaic Fertilizer, LLC, submitted an application for the New Wales facility to satisfy the requirements of Rule 62-296.340 (BART), F.A.C., which addresses the following BART-eligible emissions units (EU).

EU No.	Emission Unit Description
002	SAP No. 1
003	SAP No. 2
004	SAP No. 3
008	PAP (East): This plant emits fluoride, which is controlled by a cross flow packed wet scrubber. The plant is not a source of nitrogen oxides, particulate matter or sulfur dioxide emissions. Therefore, this plant should have been exempted from BART review.
009	DAP Plant No.1

TECHNICAL EVALUATION AND PRELIMINARY DETERMINATION

EU No.	Emission Unit Description
011	MAP Plant
015	AFI Shipping/Truck Loading
017	PAP (West): This plant emits fluoride, which is controlled by a cross flow packed wet scrubber. The plant is not a source of nitrogen oxides, particulate matter or sulfur dioxide emissions. Therefore, this plant should have been exempted from BART review.
023	AFI Storage Silos (3) – North Side
024	AFI Shipping/Rail Car Loading
025	AFI Limestone Storage Silos (2)
026	AFI Silica Unloading and Storage
027	AFI Plant
028	AFI Storage Silos (3) – South Side
029	Fertilizer Truck/Rail Loadout No.1
030	Multifos Soda Ash Unloading System
031	Multifos Soda Ash Conveying System
032	Multifos “A” Kiln Cooler
033	Multifos “B” Kiln Cooler
034	Multifos A & B Kilns Milling & Sizing – West Bag Collector
035	Multifos A & B Kilns Milling & Sizing – East Bag Collector
036	Multifos A & B Kilns, Dryer and Blending Operation
038	Multifos A & B Kilns Milling & Sizing – Surge Bin Bag Collector
052	AFI Limestone Feed Bin
053	Phosphoric Acid Clarification and Storage Area: This plant emits fluoride, which is controlled by a venturi pre-scrubber and a vertical packed bed wet scrubber. The plant is not a source of nitrogen oxides, particulate matter or sulfur dioxide emissions. Therefore, this plant should have been exempted from BART review.
055	MAP Plant Cooler
063	1500 Ton Truck Unloading Sulfur Pit
066	200 Ton Molten Sulfur Transfer Pit
067	1500 Ton Truck Unloading Sulfur Pit, Front Vent
068	1500 Ton Truck Unloading Sulfur Pit, Rear Vent

This Technical Evaluation and Preliminary Determination details the project, provides the top-down BART analysis, and identifies the preliminary BART determinations.

Processing Schedule

- January 31, 2007: Department received the BART application for an air pollution construction permit.
- February 28, 2007: Department issued 1st incompleteness letter.
- July 12, 2007: Department received response to the 1st incompleteness letter.
- August 9, 2007: Department issued 2nd incompleteness letter.
- September 19, 2007: Department received response to the 2nd incompleteness letter; application complete.

2. APPLICABLE BART REGULATIONS

Regulatory Authority

This project is subject to the applicable regulatory requirements in the following Chapters of the F.A.C.: 62-4 (Permitting Requirements); 62-204 (Ambient Air Quality Requirements, PSD Increments, and Federal Regulations Adopted by Reference); 62-210 (Permits Required, Public Notice, Reports, Stack Height Policy, Circumvention, Excess Emissions, and Forms); 62-212 (Preconstruction Review, PSD Review and Best Available Control Technology (BACT), and Non-attainment Area Review and Lowest Achievable Emissions Rate (LAER)); 62-296 (Emission Limiting Standards); and 62-297 (Test Methods and Procedures, Continuous Monitoring Specifications, and Alternate Sampling Procedures). It is also subject to the applicable provisions in Title 40 of the Code of Federal Regulations (CFR) as adopted in Chapter 62-204 and 62-296, F.A.C.

Specifically, this project is subject to Rule 62-296.340 (BART), F.A.C. , which requires a BART determination for each BART-eligible source as defined in 40 CFR 51.301. The state rule implements the federal provisions of Appendix Y in 40 CFR Part 51, "Guidelines for BART Determinations Under the Regional Haze Rule". In accordance with Appendix Y in 40 CFR 51, the affected visibility-impairing pollutants include the following: nitrogen oxides (NO_x), particulate matter (PM) and sulfur dioxide (SO₂).

With respect to particulate emissions, Rule 62-210.200, F.A.C. defines PM as, "... all finely divided solid or liquid material, other than uncombined water, emitted to the atmosphere as measured by applicable reference methods, or an equivalent or alternative method ...". Particulate matter with an aerodynamic diameter less than or equal to a nominal 10 micrometers is defined as PM₁₀ and particulate matter with an aerodynamic diameter less than or equal to a nominal 2.5 micrometers is defined as PM_{2.5}. Emissions of PM, PM₁₀ and PM_{2.5} are all regulated pollutants. For the existing emissions units and air pollution control equipment, the control strategy specified in the BART determinations directly reduces PM emissions, which serves as a surrogate to also reduce PM₁₀ and PM_{2.5} emissions.

BART Definition

Pursuant to 40 CFR 51.301, *BART* means, "... an emission limitation based on the degree of reduction achievable through the application of the best system of continuous emission reduction for each pollutant which is emitted by ... [a BART-eligible source]. The emission limitation must be established, on a case-by case basis, taking into consideration the technology available, the costs of compliance, the energy and non-air quality environmental impacts of compliance, any pollution control equipment in use or in existence at the source, the remaining useful life of the source, and the degree of improvement in visibility which may reasonably be anticipated to result from the use of such technology." In accordance with Rule 62-296.340(3), F.A.C., the Department shall determine BART for each affected source in an air construction permit.

BART Analysis Procedure

There are five basic steps in the case-by-case BART analysis:

- Step 1. Identify all available retrofit control technologies. A comprehensive list of available technologies for analysis must be identified that includes the most stringent option and a reasonable set of available options. It is not necessary to list all permutations of available control levels that exist for a given technology. The list is complete if it includes the maximum level of control each technology is capable of achieving.
- Step 2. Eliminate technically infeasible options. Control technologies are technically feasible if either (1) they have been installed and operated successfully for the type of source under review under similar conditions, or (2) the technology could be applied to the source under review. "Availability" and "applicability" are two key concepts in determining whether a technology could be applied. A technology is considered "available" if the source owner may obtain it through commercial channels, or it is otherwise available within the common sense meaning of the term. An available technology is

TECHNICAL EVALUATION AND PRELIMINARY DETERMINATION

“applicable” if it can reasonably be installed and operated on the source type under consideration. A technology that is available and applicable is technically feasible.

- Step 3.** Evaluate control effectiveness of remaining control technologies. There are two key issues in this process, including (1) expressing the degree of control in consistent terms to ensure an “apples-to-apples” comparison of emissions performance levels among options, and (2) giving appropriate treatment and consideration of control techniques that can operate over a wide range of emission performance levels.
- Step 4.** Evaluate the impacts and document the results. The evaluation will consider the costs of compliance, energy impacts, non-air quality environmental impacts, and remaining useful life.
- Step 5.** Evaluate visibility impacts. Use CALPUFF or other appropriate dispersion model to determine the visibility improvement expected at a Class I area from the potential BART control technology applied to the source. Note that if the most stringent BART control option available is selected, it is not necessary to conduct an air quality modeling analysis for the purpose of determining its visibility impacts.

BART Determination: In making a final BART determination, the following will be considered: (1) technically feasible options; (2) the average and incremental costs of each option; (3) the energy and non-air quality environmental impacts of each option; (4) the remaining useful life; and (5) the modeled visibility impacts. A justification for selecting a technology as the “best” level of control must be provided and include an explanation of these factors that led to the BART determination. When a BART determination is made for two regulated pollutants on the same source, if the result is two different BART technologies that do not work well together, it may be reasonable to substitute a different technology or combination of technologies.

Summary of Applicant’s Initial Modeling Analysis

The CALPUFF model (Version 5.756) was used to predict the maximum visibility impairment at two PSD Class I areas located within 300 km of the Mosaic Fertilizer, New Wales Facility. The nearest PSD Class I area is the Chassahowitzka National Wilderness Area (NWA), which is located approximately 104 km from the facility at the closest point. The other PSD Class I area is the Everglades National Park, which is located about 226 km from the facility. The CALPUFF modeling analysis followed the Visibility Improvement State and Tribal Association of the Southeast (VISTAS) common protocol, version 3.2. The Department provided the applicant with 4-km “CALPUFF-ready” CALMET meteorological data for the period 2001-2003. Class I receptor locations were obtained from the National Park Service (NPS) and a Lambert Conformal Conic (LCC) coordinate system was used.

For the BART-eligible sources, the PM/PM₁₀, SO₂, H₂SO₄ and NO_x emission rates were determined from either stack test data or from proposed permit limits to reflect the maximum 24-hour average normal operation for the most recent 3 to 5 years. Emission rates of PM/PM₁₀, SO₂, H₂SO₄ and NO_x were input directly into the CALPUFF model. Since PM₁₀ emissions were much lower than SO₂ emissions (approximately 150 TPY compared to 1800 TPY), and the PM speciation profiles for the major PM emissions sources were not known, all PM₁₀ emissions were conservatively considered as condensable organic PM. CALPOST method 6 was used to compute the extinction change (visibility impairment) in deciviews (dv) consistent with procedures outlined in the VISTAS modeling protocol.

In addition, the results presented with the BART review are based on a new visibility impairment algorithm developed by the Interagency Monitoring of Protected Visual Environments (IMPROVE) committee called the “new IMPROVE” algorithm. This algorithm includes light extinction due to sea salt, which is important near sea coasts. Since the new IMPROVE equation cannot be directly implemented using the existing version of the CALPUFF model without additional post-processing or model revision, VISTAS has developed a method for implementing the new IMPROVE equation using existing CALPUFF/CALPOST output in a spreadsheet. The spreadsheet was used to recalculate visibility impairment due to BART eligible units at New Wales in addition to visibility impacts due to the old IMPROVE equation.

TECHNICAL EVALUATION AND PRELIMINARY DETERMINATION

Based on the predicted 24-hour visibility impairment values for 2001 to 2003, the 8th highest (98th percentile) for each year and the 22nd highest values over the three years were determined. These values were compared with the threshold of 0.50 dv change from the predicted natural conditions. In addition, the model output shows the number of days that a change greater than 0.50 dv was predicted for each year. The Class I area with the highest predicted impacts is the Chassahowitzka NWA, which is the nearest to the facility. The maximum predicted impact is 1.668 dv change. The 8th highest visibility impairment value for each of the three years is over the comparison threshold of 0.50 dv change, with the highest year having an impact of 0.805 dv change. The 22nd highest impairment is also over the comparison threshold value (0.753 dv change). In addition, there are 20, 14 and 33 days predicted to have visibility impairment over 0.5 dv for years 2001, 2002 and 2003 respectively.

The applicant proposed the current control equipment for each of the BART eligible sources as the top control option; therefore, the applicant conducted only one set of initial CALPUFF modeling runs to determine total impacts from the facility, and no comparison between pre-control permit limits and post-control permit limits for the whole facility was provided. The following table summarizes this analysis.

**Table 2A. Mosaic New Wales - Visibility Impacts at CNWA
Contribution of Visibility Impairing Particle Species Types
Initial Analysis for All BART-Eligible Emissions Units**

Emission Unit	Percent Contribution to 8th Highest Visibility Impacts (dv)											
	2001				2002				2003			
	Visibility Impact (dv)	Contribution of ^a			Visibility Impact (dv)	Contribution of ^a			Visibility Impact (dv)	Contribution of ^a		
	SO ₄ (%)	NO ₃ (%)	PM ₁₀ (%)		SO ₄ (%)	NO ₃ (%)	PM ₁₀ (%)		SO ₄ (%)	NO ₃ (%)	PM ₁₀ (%)	
SAP1	0.132	89.5	10.5	0.0	0.160	100.0	0.0	0.0	0.158	99.8	0.2	0.0
SAP2	0.135	99.4	0.6	0.0	0.160	100.0	0.0	0.0	0.160	99.5	0.5	0.0
SAP3	0.136	99.4	0.6	0.0	0.164	100.0	0.0	0.0	0.167	99.8	0.2	0.0
DAP1	0.031	24.8	1.3	73.9	0.026	14.7	0.1	78.9	0.041	25.3	7.8	66.9
MAP	0.014	0.0	0.0	100.0	0.009	0.0	0.0	100.0	0.017	0.0	0.0	100.0
Multifos Dryers	0.109	76.6	1.1	22.3	0.110	91.6	0.3	8.0	0.162	69.9	10.8	19.3
AFI	0.073	52.9	1.8	45.4	0.071	80.8	4.4	14.7	0.084	80.8	2.4	16.8
Other Combined	0.038	0.0	0.0	100.0	0.025	1.6	0.0	98.4	0.040	0.9	0.0	99.1

3. BART ANALYSIS FOR PARTICULATE-ONLY EMISSIONS UNITS

This section provides the control technology review for BART-eligible emissions units that only emit particulate matter. All of these emissions units at the New Wales Plant have existing control equipment. Many of these types of controls have been identified as the “top control option” for similar units within this industry, which satisfies Steps 1 through 4 in the BART analysis. In addition, it is not necessary to determine the visibility impacts if the top control is selected as BART.

Baghouse Controls

Baghouses use fabric materials to mechanically filter out particulate from an exhaust stream. These devices are capable of control efficiencies greater than 99.9%. As discussed in EPA's Air Pollution Control Technology Fact Sheet for Fabric Filters (EPA-452/F-03-025), "... Well-designed and operated baghouses have been shown to be capable of reducing overall particulate emissions to less than 0.05 grams/m³ (0.010 grains/ft³), and in a number of cases, to as low as 0.002 to 0.011 grams/m³ (0.001 to 0.005 grains/ft³)." With regard to controlling emissions of particulate matter, baghouses are generally considered the top controls along with electrostatic precipitators. Because the BART eligible units that only emit PM have baghouses, Steps 1 through 4 of the BART analysis are satisfied and it is not necessary to determine the visibility impacts.

AFI Shipping/Truck Loadout (EU-015)

The AFI product in the truck loadout system is conveyed via the product loadout feed conveyor from either the product storage silos or a hopper in a storage building which is loaded by a payloader. The product then passes through product screens and is conveyed either to one of three trucks loading bins, to the bagging bin, or to the railcar loadout conveyor. Trucks are loaded from underneath the truck loading bins by truck loading chutes. Bags are loaded from the product bagging bin in the bagging area. Actual operation of the system is on a batch basis with a conveyor feed rate of 200 tons per hour and an average truck loading rate of 60 tons per hour. Particulate matter emissions from all the above transfer operations are controlled by a bag collector rated at 8,000 actual cubic feet per minute (acfm).

The current PM emissions standards are 3.6 lb/hour (16 tons per year) and less than 20% opacity from the baghouse exhaust. The opacity test interval is annual while the PM test interval is every five years. The visible emissions (VE) test results (1979-2007) indicate that no opacity was detected from the baghouse exhaust. The PM test results indicate PM emissions of less than 0.5 lb/hr. Based on a design outlet specification of 0.01 grains per actual cubic feet (gr/acf) and 8,000 acfm, actual annual emissions are estimated to be 3 tons/year from the AFI shipping/truck loadout. The baghouse is recognized as a top control option for controlling particulate matter. Therefore, the Department establishes the following BART determinations:

Visible emissions from the baghouse exhaust shall not exceed 5% opacity as determined by EPA Method 9.

Bags in the baghouse control system shall be selected based on a design outlet specification of 0.01 grains per actual cubic feet of exhaust.

Compliance shall be demonstrated by conducting annual visible emissions tests and maintaining records of the vendor data sheets demonstrating compliance with the baghouse specification. At a maximum volumetric flow rate of 8000 acfm, the potential emissions would be reduced from 16 to 3 tons/year.

AFI Storage Silos North Side and South Side (EU-023 & EU-028)

There are six 2,000 ton (each) capacity AFI storage silos (A, B, C, D, E, and F). These silos, used for the storage of calcium based ingredients, are grouped into two sets of three silos. The silo transfer rate is 120 tons per hour. Particulate matter emissions from the transfer operations are controlled for each set of three silos by a separate bin vent type bag collector mounted on the center silo. The three silos of each set are joined by openings through the common wall with the center silo. This allows air flow to the collector during transfer of material into each one of the silos. Silos A, C and E (northernmost row of silos) are controlled by a bag collector (Baghouse A) mounted on silo C. Silos B, D and F (southernmost row of silos) are controlled by a bag collector (Baghouse B) mounted on silo D. The airflow for each collector is 1,600 acfm.

The current PM emissions standards are 4.75 lb/hour (21 tons per year) and less than 20% opacity from each baghouse exhaust. The opacity test interval is annual while the PM test interval is every five years. The VE test results (1978-2007) for both EU's indicate that no opacity was detected from the baghouse exhaust. The PM test results indicate PM emissions of less than 0.5 lb/hr from each baghouse exhaust. Based on a design outlet specification of 0.01 gr/acf and 1,600 acfm, actual annual emissions are estimated to be 0.6 tons/year from each

TECHNICAL EVALUATION AND PRELIMINARY DETERMINATION

AFI storage silos. The baghouse is recognized as a top control option for controlling particulate matter. Therefore, the Department establishes the following BART determinations:

Visible emissions from the baghouse exhaust shall not exceed 5% opacity as determined by EPA Method 9.

Bags in the baghouse control system shall be selected based on a design outlet specification of 0.01 grains per actual cubic feet of exhaust.

Compliance shall be demonstrated by conducting annual visible emissions tests and maintaining records of the vendor data sheets demonstrating compliance with the baghouse specification. At a maximum volumetric flow rate of 1,600 acfm, the potential emissions would be reduced from 21 to 0.6 tons/year from each baghouse exhaust.

AFI Railcar Loadout System (EU-024)

The AFI product in the railcar loadout system is conveyed to the railcar loading bin from the truck loadout area by the railcar loadout conveyor. Railcars are loaded from underneath the railcar loading bin by one of four railcar loading chutes. Actual operation of the system is on a batch basis with a conveyor feed rate of 200 tons per hour and an average railcar loading rate of 90 tons per hour. Particulate matter emissions from the above transfer operations are controlled by a bag collector rated at 6,600 acfm.

The current PM emissions standards are 3.6 lb/hour (16 tons per year) and less than 20% opacity from the baghouse exhaust. The opacity test interval is annual while the PM test interval is every five years. The VE test results (1983-2007) indicate that, at most, 5 percent opacity was detected from the baghouse exhausts. The PM test results indicate PM emissions of less than 1 lb/hr. Based on the design outlet specification of 0.01 gr/acf and 6,600 acfm, actual annual emissions are estimated to be 2.5 tons/year from the AFI railcar loadout system. The baghouse is recognized as a top control option for controlling particulate matter. Therefore, the Department establishes the following BART determinations:

Visible emissions from the baghouse exhaust shall not exceed 5% opacity as determined by EPA Method 9.

Bags in the baghouse control system shall be selected based on a design outlet specification of 0.01 grains per actual cubic feet of exhaust.

Compliance shall be demonstrated by conducting annual visible emissions tests and maintaining records of the vendor data sheets demonstrating compliance with the baghouse specification. At a maximum volumetric flow rate of 6,600 acfm, the potential emissions would be reduced from 16 to 2.5 tons/year.

AFI Limestone Storage Silos (EU-025)

The AFI limestone storage silos (A & B) are loaded pneumatically from delivery trucks at a transfer rate of 80 tons per hour when the two trucks are unloaded simultaneously. The silos are joined by an opening through their common wall. This allows air flow to the collector during transfer of material into either one of the silos. Particulate matter emission from the transfer operations are controlled by a bag collector (mounted on silo B) rated at 6,000 acfm.

The current PM emissions standards are 3.6 lb/hour (16 tons per year) and less than 20% opacity from the baghouse exhaust. The opacity test interval is annual while the PM test interval is every five years. The VE test results (1978-2007) indicate that, at most, 5 percent opacity was detected from the baghouse exhaust. The PM test results indicate PM emissions of less than 2.5 lb/hr. Based on the design outlet specification of 0.01 gr/acf and 6,000 acfm, actual annual emissions are estimated to be 2.3 tons/year from the AFI limestone storage silos. The baghouse is recognized as a top control option for controlling particulate matter. Therefore, the Department establishes the following BART determinations:

Visible emissions from the baghouse exhaust shall not exceed 5% opacity as determined by EPA Method 9.

Bags in the baghouse control system shall be selected based on a design outlet specification of 0.01 grains per actual cubic feet of exhaust.

TECHNICAL EVALUATION AND PRELIMINARY DETERMINATION

Compliance shall be demonstrated by conducting annual visible emissions tests and maintaining records of the vendor data sheets demonstrating compliance with the baghouse specification. At a maximum volumetric flow rate of 6,000 acfm, the potential emissions would be reduced from 16 to 2.3 tons/year.

AFI Silica Storage Bin (EU-026)

Silica is unloaded from railcars, trucks or bags (primarily railcars) by a pneumatic system used to vacuum the material out and transfer it to the silica storage bin. The maximum removal rate is 10 tons per hour. Considering the time required repositioning the system in the car, the actual average unloading rate is 3 tons per hour. From the storage bin, the silica is sent to the silica slurry tank. As an unloading alternative, a station also exists that allows the silica to be slurried directly to the silica slurry tank. Particulate matter emissions from unloading operations are controlled by a filter/receiver (rated at 1,500 acfm) mounted on top of the silica storage bin.

The current PM emissions standards are 1.6 lb/hour (7 tons per year) and less than 20% opacity from the baghouse exhaust. The opacity test interval is annual while the PM test interval is every five years. The VE test results (1978-2007) indicate that there were at least two years where the opacity greater than 10 percent was detected from the baghouse exhaust. These readings could be due to moisture in the stream. The PM test results indicate PM emissions of less than 0.5 lb/hr. Based on the design outlet specification of 0.01gr/acf and 1,500 acfm, actual annual emissions are estimated to be 0.6 tons/year from the AFI silica storage bin. The baghouse is recognized as a top control option for controlling particulate matter. Therefore, the Department establishes the following BART determinations:

Visible emissions from the baghouse exhaust shall not exceed 5% opacity as determined by EPA Method 9.

Bags in the baghouse control system shall be selected based on a design outlet specification of 0.01 grains per actual cubic feet of exhaust.

Compliance shall be demonstrated by conducting annual visible emissions tests and maintaining records of the vendor data sheets demonstrating compliance with the baghouse specification. At a maximum volumetric flow rate of 1,500 acfm, the potential emissions would be reduced from 7 to 0.6 tons/year.

Fertilizer Truck/Rail Loadout No. 1 (EU-029)

This EU was converted to an Insignificant EU in Project No. 1050059-052-AC due to PM emissions being less than 5 tons/year. The emissions are fugitive emissions and the primary control required was the application of dust suppressant at all times. Since the emissions are so small, no further control will be required for the purposes of BART.

AFI Limestone Feed Bin (EU-052)

The AFI limestone feed bin is used as an intermediate storage step in the AFI production process. Limestone is transferred to the feed bin pneumatically from the limestone storage silos at a rate of 75 tons per hour. From the feed bin the limestone is transferred to the production process via a feed conveyor. Particulate matter emissions from the transfer operations are controlled by a bag collector rated at 1,600 acfm.

The current PM emissions standards are 3.6 lb/hour (16 tons per year) and less than 20% opacity from the baghouse exhaust. The opacity test interval is annual while the PM test interval is every five years. The VE test results (1984-2007) indicate that no opacity was detected from the baghouse exhaust. The PM test results indicate PM emissions of less than 0.5 lb/hr. Based on the design outlet specification of 0.01gr/acf and 1,600 acfm, actual annual emissions are estimated to be 0.6 tons/year from the AFI limestone feed bin. The baghouse is recognized as a top control option for controlling particulate matter. Therefore, the Department establishes the following BART determinations:

Visible emissions from the baghouse exhaust shall not exceed 5% opacity as determined by EPA Method 9.

Bags in the baghouse control system shall be selected based on a design outlet specification of 0.01 grains per actual cubic feet of exhaust.

TECHNICAL EVALUATION AND PRELIMINARY DETERMINATION

Compliance shall be demonstrated by conducting annual visible emissions tests and maintaining records of the vendor data sheets demonstrating compliance with the baghouse specification. At a maximum volumetric flow rate of 1,600 acfm, the potential emissions would be reduced from 16 to 0.6 tons/year.

Multifos soda ash unloading (EU-030), Multifos soda ash conveying (EU-031), Multifos 'A' and 'B' kiln coolers (EU-032 & EU-033), Multifos 'A' and 'B' kilns milling and sizing – East & West baghouses (EU-034 & EU-035), Multifos 'A' and 'B' kilns milling and sizing – surge bin (EU-038)

The Multifos Production Plant consists of a Mixed Feed Preparation Area (Section), three defluorination kilns designated as Kiln 'A' (North), Kiln 'B' (South), and Kiln 'C' followed by coolers and milling/sizing consisting of crushers, screens, mills for final product preparation. Each kiln is capable of being fired by either natural gas or fuel oil. 'A' and 'B' kilns dryer and blending operation (EU-036) is discussed in a subsequent section.

The Mixed Feed Preparation Area (Section) consists of a wet phosphate rock storage bin, a phosphate rock dryer with a nominal operating rate of 50 TPH, phosphoric acid tanks, a soda ash storage bin, a dry phosphate rock storage bin, a pug mill, and a storage building.

At the Mixed Feed Preparation Area (Section) the phosphate rock dryer, fired with either natural gas or No. 6 fuel oil, processes wet phosphate rock. The dried phosphate rock is normally stored in a hopper prior to the blending operation in the pug mill. The dried phosphate rock is combined with soda ash and phosphoric acid in a pug mill. The mixed feed is then sent to the mixed feed storage building. The soda ash unloading and conveying system supplies the blending operation. From storage, the mixed feed is transferred to the common kiln feed conveyor system.

Emissions from the soda ash system are controlled by individual bag collectors. Emissions from the coolers and milling/sizing operations are controlled by bag collectors. Fugitive emissions generated from the product storage building and associated transfer conveyors are controlled by the addition of a dust suppressant material prior to the storage building transfer conveyor.

The current emissions standards require visible emissions not to exceed 20 percent opacity from the above listed EUs. Annual opacity tests are required from all the EUs to comply with the 20 percent opacity standard. The VE test results (1983-2007) for all the EUs except EU-035 and EU-038 which ranged from 1985-2007 indicate that majority of the readings were less than 5 percent opacity from the baghouse exhaust. The baghouse is recognized as a top control option for controlling particulate matter. Therefore, the Department establishes the following BART determinations:

Visible emissions from the baghouse exhaust shall not exceed 5% opacity as determined by EPA Method 9.

Bags in the baghouse control system shall be selected based on a design outlet specification of 0.01 grains per actual cubic feet of exhaust.

Compliance shall be demonstrated by conducting annual visible emissions tests and maintaining records of the vendor data sheets demonstrating compliance with the baghouse specification.

MAP Plant Cooler (EU-055)

The prill tower located at the MAP Plant (EU-011) produces 50 tons per hour (1200 tons per day) of MAP. Emissions from the prill tower are vented through a venturi scrubber then through a cyclonic demister to control fluorides and particulate matter. The MAP Plant (EU-011) is discussed in a subsequent section.

A rotary cooler and a product elevator are located at the MAP Plant. Emissions from the MAP rotary cooler are vented through a cyclone and then to a 30,000 acfm baghouse collector to control particulate matter. Particulate emissions from the MAP product elevator are also controlled by the above baghouse collector.

The current PM emissions standards from the MAP cooler baghouse are 0.02 grains per dry standard cubic feet (4 lb/hr estimated) and 5 percent or less opacity from the baghouse exhaust. The permit requires VE testing annually and pursuant to Rule 62-297.620(4), F.A.C., because this source is equipped with a baghouse, the VE test is also

TECHNICAL EVALUATION AND PRELIMINARY DETERMINATION

submitted in lieu of particulate testing. There were still four particulate emissions tests done during the period 1981-1998. The tests indicated that the actual PM mass emissions rate was 0.003 grains per dry standard cubic feet. The VE test results (1985-2007) indicates that all the readings were less than or equal to 5 percent opacity from the baghouse exhaust. The baghouse is recognized as a top control option for controlling particulate matter. Therefore, the Department establishes the following BART determinations:

Visible emissions from the baghouse exhaust shall not exceed 5% opacity as determined by EPA Method 9.

Bags in the baghouse control system shall be selected based on a design outlet specification of 0.01 grains per actual cubic feet of exhaust.

Compliance shall be demonstrated by conducting annual visible emissions tests and maintaining records of the vendor data sheets demonstrating compliance with the baghouse specification.

Wet Control Equipment for Particulate Matter

MAP Prill Plant (EU-011)

The MAP prill plant produces MAP at a maximum rate of 50 TPH or 1,200 TPD. Emissions from the prill tower are vented through a venturi scrubber then through a cyclonic demister to control fluorides and particulate matter. PM emissions from the MAP prill plant are limited to 15 lb/hr based on 0.3 lb PM/ton of product. Visible emissions from the plant are currently limited to 20 percent opacity. These emissions limits were based on a BACT determination issued on July 9, 1980. The emissions unit is controlled by a wet scrubber due to the hygroscopic nature of the MAP product. This product absorbs moisture and will plug the fabric materials used in a baghouse. Consequently, wet scrubbing is the appropriate control technology for this activity. The estimated control efficiency for the existing wet scrubbers is greater than 95%.

The following table summarizes actual particulate matter emissions from the unit based on recent stack test data. The data included in the table is for the tests when the emissions unit was operating at permitted capacity.

TECHNICAL EVALUATION AND PRELIMINARY DETERMINATION

Summary of PM Test Data for EU-011

Date	PM (lb/hour)	Production Rate (TPH)	lb PM/ton of product	Date	PM(lb/hour)	Production Rate (TPH)	lb PM/ton of product
10/16/1981	2.61	53	0.05	4/23/1998	0.95	50	0.02
10/30/1981	2.6	53	0.05	5/12/1999	1.2	50	0.02
10/19/1985	1.22	50	0.02	3/28/2001	0.98	49	0.02
4/22/1986	1.2	51	0.02	6/20/2002	0.54	49	0.01
10/24/1986	0.95	50	0.02	12/19/2002	0.69	49	0.01
5/5/1987	4.45	50	0.09	12/19/2003	0.39	49	0.01
10/20/1987	8.05	50	0.16	2/23/2005	2.54	49	0.05
4/29/1988	2.18	50	0.04	1/20/2006	0.76	47	0.02
4/28/1989	0.83	50	0.02	8/17/2006	0.98	49	0.02
10/31/1989	0.92	50	0.02				
4/19/1990	2.25	50	0.05				
10/30/1990	0.94	50	0.02				
4/23/1991	0.68	50	0.01				
12/26/1991	0.47	44	0.01				
4/28/1992	1.19	50	0.02				
10/27/1992	7.76	46	0.17				
4/22/1993	8.7	50	0.17				
5/2/1994	0.8	50	0.02				
11/1/1994	4.6	50	0.09				
4/12/1995	1.59	50	0.03				
11/2/1995	0.83	50	0.02				
5/3/1996	0.75	50	0.02				

A statistical analysis using Excel worksheet of PM emissions in lb/ton of product using the available data indicates the following emissions rates based on a 99% confidence interval.

Mean	0.041935
Standard Error	0.008301
Median	0.02
Mode	0.02
Standard Deviation	0.046218
Sample Variance	0.002136
Kurtosis	3.382828
Skewness	2.074405
Range	0.16
Minimum	0.01
Maximum	0.17

TECHNICAL EVALUATION AND PRELIMINARY DETERMINATION

Sum	1.3
Count	31
Confidence Level(99.0%)	0.022828

The following represents the predicted PM emissions rate with a 99% confidence level.

MAP Prill Plant (EU-011): Mean + Confidence level (99%) = 0.065 lb PM/ton of product

As shown, actual emissions are much lower than the permitted emissions limits and reflect good control by the installed wet scrubbers. In addition, several similar DAP/MAP Plants at other facilities in Florida have been subject to PSD preconstruction review. The following summarizes the resulting PM BACT determinations for these projects:

- Permit No. PSD-FL-251 was issued on August 8, 2001 to Cargill Fertilizer Riverview facility for the Nos. 3 and 4 MAP plants. The PM BACT emissions limit was established as 0.06 lb PM/ton of MAP product.
- Permit No. PSD-FL-255 was issued on April 21, 1999 to Cargill Fertilizer Bartow facility for the No. 3 DAP/MAP plant. The PM BACT emissions limit was established as 0.09 lb PM/ton of MAP product.
- Permit No. PSD-FL-322 was issued on March 2, 2002 to Cargill Fertilizer Bartow facility for the No. 4 DAP plant. The PM BACT emissions limit was established as 0.07 lb PM/ton of MAP product.
- Permit No. PSD-FL-336 was issued on March 16, 2004 to Cargill Fertilizer Riverview facility for the No. 6 Granulation plant. The PM BACT emissions limit was established as 0.07 lb PM/ton of product.

All of the above BACT determinations were based on the use of venturi scrubbers and cyclonic scrubbers for particulate control. Therefore, the Department recognizes this equipment as a top control option and establishes the following BART standards.

PM (MAP Prill Plant): 0.07 lb PM/ton of MAP product and 3.5 lb/hour (equivalent to 15 tons/year)

The BART determinations are within the range of the recent BACT determinations. Total potential PM emissions will be reduced from 66 to 15 tons/year.

4. BART ANALYSIS FOR COMBUSTION SOURCES

DAP Plant No. 1 (EU-009)

The DAP Plant No. 1 produces MAP or DAP at a maximum rate of 150 tons/hour. Particulate matter, fluoride and sulfur dioxide emissions at the DAP Plant No. 1 are generated from a reactor/granulator (R/G), dryer, cooler, and associated equipment. Emissions are controlled by cyclones, one pre-scrubber, three (3) venturi scrubbers in parallel with demisters, and one cyclonic scrubber with an impact spraying system. The venturi scrubbers use process water. The impact spraying system uses recirculating water. All exhaust gases eventually exit one 133 foot tall main stack.

Emissions from the reactor/granulator are routed to the pre-scrubber, the R/G venturi scrubber then to the cyclonic scrubber. Emissions from the dryer are routed to its own dedicated cyclones, the dryer venturi scrubber then to the cyclonic scrubber. The dryer is fired with natural gas, No. 6 fuel oil with sulfur content limited to 1 percent by weight, or better grade fuel oil. Emissions from the cooler are routed to its own dedicated cyclones, the cooler venturi scrubber then to the cyclonic scrubber. Emissions from associated equipment are routed to its own dedicated cyclone and then to the cooler venturi scrubber.

NO_x Emissions

Based on Annual Operating Reports (AOR) from 2002 to 2006, the highest reported actual NO_x emissions were 13.8 tons/year. Only natural gas was fired. Based on the actual NO_x emissions levels, add-on control equipment

TECHNICAL EVALUATION AND PRELIMINARY DETERMINATION

(e.g., selective catalytic reduction, selective non-catalytic reduction, flue gas recirculation, etc.) may be feasible, but would not be cost effective. Therefore, the BART determination is the current combustion design and the firing of natural gas as the primary fuel.

PM Emissions

The current particulate matter emissions limits for the No. 1 DAP/MAP Plant is 28.6 lb/hour. Based on 48.7 tons P₂O₅/hour input feed, the PM emission limits in lb/ton P₂O₅ feed is 0.6 lb/ton P₂O₅ feed. Annual stack testing is conducted to demonstrate compliance. The following table summarizes actual particulate matter emissions from the unit based on stack test data.

Summary of Tested PM Emissions from the DAP Plant No. 1 (EU-009)

Date	PM (lb/hour)	Production Rate (TPH)	Date	PM (lb/hour)	Production Rate (TPH)	Date	PM (lb/hour)	Production Rate (TPH)
10/17/1985	6.57	91	3/8/1993	12	92	11/17/1998	4.69	95
6/15/1987	6.96	91	10/18/1993	4	92	2/25/1999	4.03	108
10/28/1987	6.28	91	3/17/1994	9.2	102	11/4/1999	6.44	129
5/3/1988	7.7	100	10/24/1994	3.18	102	3/7/2001	10.66	118
10/12/1988	20.1	94	11/21/1994	6.38	104	3/8/2001	11	115
11/1/1989	12.63	93	2/5/1995	6.24	94	6/27/2002	3.24	119
3/20/1990	8.51	88	9/13/1995	3.29	91	1/29/2003	4.2	115
10/25/1990	9.3	94	4/8/1996	4	100	3/30/2004	8.02	106
4/3/1991	13.8	93	12/13/1996	6.6	95	3/3/2005	2.41	105
10/22/1991	12.02	84	3/25/1997	5.6	101	3/29/2007	1.84	62
4/10/1992	7.74	96	9/15/1997	3.17	93			
10/19/1992	7.62	94	3/23/1997	2.38	97			

These emissions rates are much lower than the current PM emissions limits based on the installed controls. A statistical analysis using Excel worksheet of PM emissions using the available data indicates the following emissions rates based on a 99% confidence interval.

Mean	7.111765
Standard Error	0.676766
Median	6.505
Mode	4
Standard Deviation	3.946188
Sample Variance	15.5724
Kurtosis	2.109593
Skewness	1.201932
Range	18.26
Minimum	1.84
Maximum	20.1
Sum	241.8

TECHNICAL EVALUATION AND PRELIMINARY DETERMINATION

Count	34
Confidence Level(99.0%)	1.849788

The following represents the predicted PM emissions rate with a 99% confidence level.

DAP Plant No.1 (EU-009): Mean + Confidence level (99%) = 8.9 lb/hour

DAP Plant No. 1 (EU-009) = $8.9/48.7 = 0.18$ lb/ton P₂O₅ feed

In addition, several similar DAP/MAP Plants at other facilities in Florida have been subject to PSD preconstruction review. The following summarizes the resulting PM BACT determinations for these projects:

- Permit No. PSD-FL-251 was issued on August 8, 2001 to Cargill Fertilizer Riverview facility for the Nos. 3 and 4 MAP plants. The PM BACT emissions limit was established as 0.12 lb/ton P₂O₅ feed.
- Permit No. PSD-FL-255 was issued on April 21, 1999 to Cargill Fertilizer Bartow facility for the No. 3 DAP/MAP plant. The PM BACT emissions limit was established as 0.18 lb/ton P₂O₅ feed.
- Permit No. PSD-FL-322 was issued on March 2, 2002 to Cargill Fertilizer Bartow facility for the No. 4 DAP plant. The PM BACT emissions limit was established as 0.15 lb/ton P₂O₅ feed.
- Permit No. PSD-FL-336 was issued on March 16, 2004 to Cargill Fertilizer Riverview facility for the No. 6 Granulation plant. The PM BACT emissions limit was established as 0.15 lb/ton P₂O₅ feed.

All of the above BACT determinations were based on the use of venturi scrubbers and cyclonic scrubbers for particulate control. Therefore, the Department recognizes this equipment as a top control option and establishes the following PM BART standard for the DAP Plant No. 1 (EU-009).

PM: 0.18 lb/ton of P₂O₅ feed and 8.9 lb/hour (equivalent to 39 tons/year)

The BART determination is within the range of the recent BACT determinations. Total potential PM emissions will be reduced from 125 to 39 tons/year.

SO₂ Emissions

Natural gas is fired as the primary fuel. Fuel oil with a maximum sulfur content of 1% by weight is authorized as a backup fuel. A review of the fuel usage for the years 2002-2006 for the DAP Plant No. 1 indicates that only natural gas was fired. Natural gas which contains negligible amounts of sulfur would generate little sulfur dioxide. Based on the actual SO₂ emissions levels reported in the AOR, add-on control equipment (e.g., wet flue gas desulfurization, hydrated lime injection, etc.) may be feasible, but would not be cost effective. Therefore, the Department establishes the following BART determination.

To control sulfur dioxide emissions from the DAP Plant No. 1 dryer, natural gas shall be fired as the primary fuel. If the vendor is unable to provide natural gas, No. 6 fuel oil with a maximum sulfur content of 1% by weight or better grade fuel oil may be fired as a backup fuel.

AFI Granulation Plant (EU-027)

The AFI Granulation Plant produces up to 120 TPH of animal feed. The plant consists of a reactor, pug mill, granulator, dryer, screening system, and cooler. The dryer has a maximum heat input rate of 135 million British thermal units per hour (MMBtu/hr) and is fired with natural gas or new No. 6 fuel oil with sulfur content limited to 1 percent by weight or better grade fuel oil. PM emissions from the AFI plant are controlled by three venturi/cross flow scrubbers, one venturi scrubber and three cyclones.

NO_x Emissions

Based on Annual Operating Reports from 2002 to 2006, only natural gas was burned in the dryer except in 2003

TECHNICAL EVALUATION AND PRELIMINARY DETERMINATION

when 288 hours of fuel oil was also burned. The maximum annual natural gas usage of 705 million cubic feet took place in 2005. Using AP-42 emission factors, NO_x emissions based on this usage of natural gas converts to less than 100 tons of NO_x emissions. Based on this level of NO_x emissions, add-on control equipment (e.g., selective catalytic reduction, selective non-catalytic reduction, flue gas recirculation, etc.) may be feasible, but would not be cost effective. Therefore, the BART determination is the current combustion design and the firing of natural gas as the primary fuel.

PM Emissions

The current particulate matter emissions limits for the AFI Granulation Plant is 36.8 lb/hour. Based on 120 tons per hour product, the PM emission limit is equivalent to 0.31 lb PM/ton product. Annual stack testing is conducted to demonstrate compliance. The following table summarizes actual particulate matter emissions from the unit based on stack test data.

Summary of Tested PM Emissions from the AFI Granulation Plant (EU-027)

Date	PM (lb/hour)	Production Rate (TPH)	Date	PM (lb/hour)	Production Rate (TPH)	Date	PM (lb/hour)	Production Rate (TPH)
4/3/1979	11.8	90	4/2/1992	26.36	110	9/18/2000	23.5	101
12/7/1981	16.59	120	9/3/1992	24.32	102	10/12/2000	23.5	116
2/25/1983	24.7	75	2/22/1993	36	115	11/9/2000	17.7	96
8/14/1985	25.9	110	8/5/1993	30.3	112	4/5/2002	26.4	89
8/29/1986	20.66	82	2/11/1994	33.8	105	5/6/2002	31.1	112
2/26/1987	12.11	82	9/23/1994	26.2	109	10/23/2002	19.98	114
8/20/1987	18.75	82	8/14/1995	17.36	91	1/22/2004	29.88	114
2/18/1988	9.9	66	3/21/1996	21.82	105	3/23/2005	34.1	117
4/25/1988	19.02	89	10/24/1996	27.1	102	5/12/2006	25.2	108
8/16/1988	18.25	88	4/10/1997	25.02	108	3/23/2007	33.6	118
3/3/1989	16.16	72	9/30/1997	27.86	106			
8/17/1989	13.52	75	5/26/1998	17.37	87			
2/8/1990	17.98	80	10/29/1998	27.55	96			
10/4/1990	15.34	84	8/4/1999	21.84	91			
3/21/1991	15.98	100	8/5/1999	23.44	98			
8/8/1991	20.34	110	6/21/2000	19.87	101			

These emissions rates are lower than the current PM emissions limits based on the installed controls. A statistical analysis using Excel worksheet of PM emissions using the available data indicates the following emissions rates based on a 99% confidence interval.

Mean	22.57548
Standard Error	0.995216
Median	22.64
Mode	23.5

TECHNICAL EVALUATION AND PRELIMINARY DETERMINATION

Standard Deviation	6.449739
Sample Variance	41.59913
Kurtosis	-0.55564
Skewness	0.16485
Range	26.1
Minimum	9.9
Maximum	36
Sum	948.17
Count	42
Confidence Level(99.0%)	2.68826

The following represents the predicted PM emissions rate with a 99% confidence level.

AFI Granulation Plant (EU-027): Mean + Confidence level (99%) = 25.3 lb/hour

AFI Granulation Plant (EU-027) = 25.3/120 = 0.21 lb/ton product

In addition, the following BACT determinations were made within the last ten years for two similar animal feed supplement plants at other facilities in Florida.

- PSD-FL-315 issued on November 21, 2001 to Cargill Fertilizer Riverview facility for the two animal feed ingredient plants producing 2280 tons per day (TPD) of product (26 lb/hour or 0.27 lb/ton product); and
- PSD-FL-234 issued on June 12, 1997 to Cargill Fertilizer Riverview facility for the two animal feed ingredient plants producing 1160 TPD of product (12 lb/hour or 0.25 lb/ton product).

In each of the above projects, cross-flow packed wet scrubbers were the basis of the BACT determinations for controlling emissions of fluorides and particulate matter. Therefore, the Department recognizes this equipment as a top control option and establishes the following BART determinations for the AFI Granulation Plant. Potential emissions of particulate matter will be reduced from 161 to 110 tons per year.

Particulate matter emissions shall not exceed 25.3 lb/hour and 0.21 lb PM/ton of product.

SO₂ Emissions

Natural gas is fired as the primary fuel. No. 6 Fuel oil with a maximum sulfur content of 1% by weight or better grade fuel oil is authorized as a backup fuel. A review of the fuel usage for the years 2002-2006 for the AFI Granulation Plant indicates that only natural gas was fired except in 2003 when 288 hours of fuel oil was also burned. Natural gas which contains negligible amounts of sulfur would generate little sulfur dioxide. The maximum annual natural gas usage of 705 million cubic feet took place in 2005. Using AP-42 mission factors, SO₂ emissions based on this usage of natural gas converts to less than 0.3 tons of SO₂ emissions. Based on this level of SO₂ emissions, add-on control equipment (e.g., wet flue gas desulfurization, hydrated lime injection, etc.) may be feasible, but would not be cost effective. Therefore, the Department establishes the following BART determination.

To control sulfur dioxide emissions from the AFI Granulation Plant dryer, natural gas shall be fired as the primary fuel. If the vendor is unable to provide natural gas, No. 6 fuel oil with a maximum sulfur content of 1% by weight or better grade fuel oil may be fired as a backup fuel.

Multifos A and B Kilns, Dryer and Blending Operation (EU-036)

The Multifos production plant consists of a phosphate rock dryer, a blending operation, a storage building, a pug mill, coolers, crushers, screens, mills, and three defluorination kilns designated as Kiln 'A', Kiln 'B', and Kiln 'C'.

TECHNICAL EVALUATION AND PRELIMINARY DETERMINATION

The dryer fired with either natural gas or No. 6 fuel oil, processes wet phosphate rock. The dried phosphate rock is normally stored in a hopper prior to the blending operation. The blending operation in the pug mill combines dried phosphate rock with soda ash and phosphoric acid as a mixed feed, which is then sent to the mixed feed storage building. From storage, the mixed feed is transferred to the common kiln feed conveyor system. Each of Kilns A and B are capable of being fired by either natural gas or No. 6 fuel oil. Emissions from the dryer, the blending operation, and Kilns A and B are controlled by three separate packed bed scrubbers connected to a common stack.

Total annual production rate of Kilns A and B combined is limited to 140,000 tons per year of Multifos. The process input rate to each Kiln A and B is limited to 15 TPH, which is equivalent to 5.7 TPH of P_2O_5 input. Maximum heat input rate of the dryer is limited to 12.5 MMBtu/hr. Each of the kilns has a maximum heat input rate of 56 MMBtu/hr.

PM Emissions from the Multifos A and B kilns, dryer, and blending operation are limited to 29.83 lb/hr. There are no emissions limits established for NO_x or SO_2 in the existing permit for the A and B kilns.

NO_x Emissions

Based on Annual Operating Reports from 1999 to 2006, only natural gas was burned in Kilns A and B and the dryer. The maximum annual natural gas usage of 811 million cubic feet took place in 1999 and 2000. Using AP-42 mission factors, NO_x emissions based on this usage of natural gas converts to less than 40 tons of NO_x emissions. Based on this level of NO_x emissions, add-on control equipment (e.g., selective catalytic reduction, selective non-catalytic reduction, flue gas recirculation, etc.) may be feasible, but would not be cost effective. Therefore, the BART determination is the current combustion design and the firing of natural gas as the primary fuel.

SO_2 Emissions

The existing permit do not state SO_2 emissions limit for the Multifos A and B kilns. The blending operation combines dried phosphate rock with soda ash and phosphoric acid and it is assumed that there are no SO_2 emissions from the blending operation. A baseline test to determine SO_2 emissions from the A and B kilns was conducted during the 2001-2003 period. The test indicated mass emission rate of SO_2 from the A and B kilns common stack to be 316 lb/hr. The operating hours for the last ten years for the Multifos A and B kilns are as follows: 1997 – 8760 hours; 1998 – 8760 hours; 1999 – 8760 hours; 2000 – 8760 hours; 2001 – 8760 hours; 2002 – 8696 hours; 2003 – 8716 hours; 2004 – 8482 hours; 2005 – 8629 hours and 2006 – 8698 hours. Based on average annual operation of 8,700 hours over the last ten years, the baseline SO_2 emissions from the A and B kilns stack is 1,375 tons per year. The kilns and dryer are capable of burning either natural gas or fuel oil, but fuel oil is rarely burned in the kilns and dryer. Only a small amount of fuel oil was burned in the A kiln in 2001. No fuel oil has been burned since then. It is therefore clear that the high SO_2 emissions result from the reaction of the phosphate rock in the kilns. Since sulfate particles are formed due to SO_2 emissions, and approximately 70 to 90 percent of the visibility impact from this emissions unit is due to the sulfate particles, therefore control of SO_2 emissions from the A and B kilns is the best strategy to reduce visibility impact due to SO_2 emissions from the common stack of Kilns A and B.

Kilns A and B each have a packed bed process water scrubber, which controls primarily PM and fluoride (F1) emissions. The new Kiln 'C' at the facility, which was originally permitted in 1998 through a PSD review (1050059-024-AC; PSD-FL-244), has a pond water scrubber followed by a caustic scrubber for the removal of SO_2 . The BART analysis, presented in the following section demonstrates that an add-on flue gas desulfurization (FGD) system for the A and B kilns as currently employed for the C kiln at this plant is BART.

The applicant was asked to submit cost-effectiveness numbers in dollars per ton of SO_2 removed for installing the same caustic scrubber system as installed on the C kiln during the BART application process. Mosaic used a cost quote received in 1998 from Anderson 2000 Inc., the cost for a Model HS-150 sulfur dioxide, hydrogen F1 and hydrogen chloride scrubbing system with Model 1000 double alkali waste liquid regeneration system to control SO_2 emissions from the A and B kilns, to develop the cost effectiveness figures. It should be noted that this was

TECHNICAL EVALUATION AND PRELIMINARY DETERMINATION

not the same caustic scrubbing system that was used on C kiln. In fact, the Anderson scrubbing system was overlooked by Mosaic because of the high cost effectiveness numbers and instead Mosaic decided to use D.R. Technologies caustic scrubbing system for the C kiln.

Based on the Anderson cost quote, the 1998 cost was converted to 2006 dollars, and the estimated total capital cost of two SO₂ scrubbing system for the A and B kilns was determined to be \$11.1 million by the applicant. The annualized cost of the capital investment was \$0.95 million/yr. Additional annualized operating costs to operate the scrubber systems were estimated at \$1.15 million/yr. The total annualized cost was \$2.1 million per year. Assuming 95 percent control efficiency, the scrubbing system would further reduce the tested baseline hourly emissions rate from 316 lb/hr to 15.8 lb/hr. Based on the annualized cost of control of \$2.1 million per year, this annual SO₂ emissions reduction would result in a cost effectiveness of around \$1,600 per ton of SO₂ removed.

Mosaic resubmitted the cost effectiveness numbers for the Anderson caustic scrubbing equipment based on the latest stack test data for the A and B kilns dated March 26, 2007, which shows an average of 177.5 lb/hr (772 TPY based on 8700 hours per year of average annual operation) of SO₂ emissions from the A and B kilns and using the correct factors from the OAQPS Cost manual, 6th Edition. Additionally, cost effectiveness in dollars per ton of SO₂ removed for using D.R. Technologies caustic scrubbing system which is installed on the C kiln was also submitted. Based on the D.R. Technology caustic scrubbing system, Mosaic determined that the annual SO₂ emission reduction would result in a cost effectiveness of slightly more than \$3,700 per ton of SO₂ removed (Based on Mosaic's assumed average annual operation of 7,500 hours). The cost effectiveness in dollars per ton of SO₂ removed based on the true average annual operation of 8,700 hours would be \$3,260.

The Department believes that the true cost effectiveness in dollars per ton of SO₂ removed is somewhere in between the two numbers of \$1,600 and \$3,260 per ton of SO₂ removed. The cost effectiveness numbers would be even less if the dollars per ton of SO₂ removed was based on the permitted hours of operation. These cost effectiveness numbers are considered reasonable, especially when the D.R. Technology caustic scrubbing system is already operational on the C kiln. In setting a mass emission rate limit of SO₂ for Kilns A and B, the Department will consider using an average emission rate from the two stack tests. The average emission rate of SO₂ from Kilns A and B is 247 lb/hr. Assuming 95 percent control efficiency, the scrubbing system would further reduce the hourly average emission rate from the A and B common stack from 247 lb/hr to 12 lb/hr. Therefore, the BART determination for SO₂ emissions is:

Venturi/caustic scrubbing system similar to the one on Kiln C shall be installed on Kilns A and B. SO₂ emissions rate from Kilns A and B common stack shall not exceed 12.0 lb/hr.

PM Emissions

Particulate emissions from the dryer, the blending operation, and Kilns A and B are controlled by three separate packed bed scrubbers connected to a common stack. Annual stack testing is conducted to demonstrate compliance. The AOR data indicates that the PM emissions limit of 29.83 lb/hr did not take effect until 1996. Even though the emission unit has PM emissions data that goes back to 1978, the Department will look at the compliance test results from 1996 to present. The following table summarizes actual particulate matter emissions from the unit based on stack test data.

TECHNICAL EVALUATION AND PRELIMINARY DETERMINATION

Summary of Tested PM Emissions from
Kilns A and B (EU-036)

Date	PM (lb/hour)	Date	PM (lb/hour)
3/6/1996	18.2	5/18/2001	15.14
2/20/1997	14.92	6/17/2002	9.84
3/5/1998	11.37	5/28/2003	20.27
2/2/1999	8.68	4/23/2004	10.8
8/10/2000	9.27	6/30/2004	28.14
10/3/2000	10.88	9/12/2005	13.38
11/2/2000	10.88	3/1/2006	15.63
11/16/2000	6.58	9/27/2006	14.09
5/9/2001	11.3		

In general, these emissions rates are lower than the current PM emissions limits and reflect the capabilities of the installed scrubbers. Most of these compliance tests were done at less than permitted capacity, but due to additional SO₂ control required as explained in the earlier section with a venturi/caustic scrubbing system, additional PM control will take place and therefore these emission rates will be representative of the emissions unit operating at permitted capacity. A statistical analysis using Excel worksheet of PM emissions using the available data indicates the following emissions rates based on a 99% confidence interval.

Mean	13.49235
Standard Error	1.2495
Median	11.37
Mode	10.88
Standard Deviation	5.151819
Sample Variance	26.54124
Kurtosis	3.087687
Skewness	1.52029
Range	21.56
Minimum	6.58
Maximum	28.14
Sum	229.37
Count	17
Confidence Level(99.0%)	3.649516

The following represents the predicted PM emissions rate with a 99% confidence level.

Kilns A and B (EU-036): Mean + Confidence level (99%) = 17 lb/hour

Therefore, the Department establishes the following PM BART determination for the Multifos A and B kilns, dryer, and blending operation (EU-036).

TECHNICAL EVALUATION AND PRELIMINARY DETERMINATION

Particulate matter emissions shall not exceed 17.0 lb/hour as determined by EPA Method 5.

Potential emissions of particulate matter will be reduced from 130 to 74 tons per year. Based on the new standard, it will be necessary to develop new excursion levels for the scrubber parameters in the CAM plan.

Nos. 1, 2, and 3 Sulfuric Acid Plants (EU-002, EU-003 and EU-004)

SAP Nos. 1, 2 and 3 went through a PSD review in July 2002, when the plants increased their production capacity from 2,900 TPD to 3,400 TPD of 100-percent sulfuric acid (H_2SO_4). SAP Nos. 1, 2, and 3 are double absorption units. This is the most common process for producing sulfuric acid in the U.S. phosphate fertilizer industry and it continues to be improved and employed at both existing and new installations in the U.S. and throughout the world. The double absorption process controls SO_2 emissions and high efficiency mist eliminator controls sulfuric acid mist emissions. NO_x emissions due to the burning of sulfur are controlled through good combustion practices.

The process is comprised of three distinct steps. These are sulfur combustion and gas preparation; catalytic conversion of sulfur dioxide to sulfur trioxide; and absorption of sulfur trioxide into sulfuric acid.

A great deal of heat is evolved throughout the process. Its management is an important consideration in optimizing the conversion and absorption steps as well as providing useful energy to the plant. Reaction kinetics and thermodynamics are also important factors. Following is a description of the process.

Atmospheric air is drawn through a filter by the main compressor and then contacted with a recirculating stream of sulfuric acid in the drying tower. The dried air is blown by a steam-driven compressor into a refractory-lined burner where molten sulfur is combusted to produce SO_2 . The hot combustion gases are cooled in a waste heat boiler to recover excess heat as steam.

The gas stream is then introduced into a converter packed with catalyst. In a series of steps, the SO_2 and excess oxygen from the combustion air are progressively converted to SO_3 . The gases containing SO_3 , some unconverted SO_2 , oxygen, and atmospheric nitrogen are conveyed to an "interpass tower" where the SO_3 is absorbed into a stream of concentrated sulfuric acid and reacted with excess water to further strengthen the acid. By removing most SO_3 in the interpass absorber, the equilibrium favors further conversion of the remaining SO_2 to SO_3 . The remaining SO_2 , not previously oxidized, is passed over a final converter bed of catalyst and the SO_3 produced is then absorbed in H_2SO_4 . This is accomplished in the final pass of the converter. The resulting gas stream is conveyed to the high-efficiency "final tower" where most of the remaining SO_3 reacts with water in a 98-99 percent sulfuric acid stream.

Throughout the conversion, the temperatures are moderated by an intricate arrangement of heat exchangers so that the excess heat is removed. Mist eliminators are used to ensure that sulfuric acid sprays and fine mists are contained, thereby protecting plant equipment and minimizing emissions to the atmosphere.

NO_x Emissions

Based on Annual Operating Reports (1994-2006), the highest NO_x emissions reported is 47 tons/year from the No. 2 sulfuric acid plant. Based on the actual NO_x emissions levels, add-on control equipment (e.g., selective catalytic reduction, selective non-catalytic reduction, flue gas recirculation, etc.) may be feasible, but would not be cost effective. The BACT NO_x emission limits established for each of the plants through a PSD review in July 2002 was 0.12 lb/ton of 100-percent H_2SO_4 , equivalent to 17.0 lb/hr. Since the New Wales SAP's are already complying with the recent BACT emissions limits for NO_x , they will be considered BART emissions limits for the SAP's at the New Wales facility. Therefore, the Department establishes the following BART determination.

Nitrogen oxides emissions (expressed as NO_2) from the Nos. 1, 2 and 3 Sulfuric Acid Plants (EU-002, EU-003 and EU-004) shall not exceed 0.12 lb/ton of 100% acid produced as determined by EPA Method 7E.

TECHNICAL EVALUATION AND PRELIMINARY DETERMINATION

PM Emissions

For regulated sulfuric acid plants, particulate matter is generally minimized by controlling sulfuric acid mist. For new sulfuric acid plants, Rule 62-296.402, F.A.C. and NSPS Subpart H, limit sulfuric acid mist emissions to 0.15 lb/ton of 100% sulfuric acid produced and less than 10% opacity. Nos. 1, 2, and 3 Sulfuric Acid Plants (EU-002, EU-003 and EU-004) are subject to a more stringent standard of 0.10 lb/ton of 100% sulfuric acid produced through a PSD review in July 2002. Brinks mist eliminator is used to reduce sulfuric acid mist emissions. Therefore, the Department establishes the following PM BART determination.

Visible emissions from the Nos. 1, 2 and 3 Sulfuric Acid Plants shall not exceed 10% opacity as determined by EPA Method 9.

SO₂ Emissions

The BACT established for the Nos. 1, 2 and 3 Sulfuric Acid Plants during the PSD review in July 2002 was double absorption process and the emissions limits established for SO₂ for each of the three plants was 3.5 pounds per ton (lb/ton), 24-hour average and 4 lb/ton, 3-hour average of 100-percent H₂SO₄ based on CEMS, equivalent to 2,172 TPY.

There are four recent SO₂ BACT determinations for three similar plants at other facilities in Florida:

- PSD-FL-355 issued on July 23, 2007 to CF Industries, Inc. for the sulfuric acid and phosphoric acid plants (3.5 lb/ton, 3-hour CEMS average);
- PSD-FL-339 issued on June 1, 2004 to CF Industries, Inc. for the C & D sulfuric acid plants (3.5 lb/ton, 3-hour CEMS average);
- PSD-FL-325 issued on July 12, 2002 to IMC Phosphates, Inc. New Wales facility for Nos. 1, 2 and 3 sulfuric acid plants (3.5 lb/ton on a 24-hour CEMS average and 4.0 lb/ton on a 3-hour average); and
- PSD-FL-315 issued on November 21, 2001 to Cargill Fertilizer Riverview facility for #8 and 9 sulfuric acid plants (3.5 lb/ton on a 24-hour CEMS average and 4.0 lb/ton on a 3-hour average).

In Permit No. PSD-FL-355 above, the BACT determination was for a single absorption plant where the plant accepted the BACT standard based on a double absorption process. The remaining projects concluded BACT to be the use of double absorption process for SO₂ emissions. Therefore, the Department recognizes this equipment as a top control option. Since the New Wales SAP's are already complying with the recent BACT emissions limits for SO₂, they will be considered BART emissions limits for the SAP's at the New Wales facility. These BART emissions limits for SO₂ are in correlation with the other BACT's mentioned above. Therefore, the Department establishes the following BART standard based on the use of double absorption process for each plant.

Sulfur dioxide emissions from the Nos. 1, 2, and 3 Sulfuric Acid Plants shall not exceed 3.5 lb/ton (496 lb/hour) based on a 24-hour CEMS rolling average.

Molten Sulfur System for Sulfuric Acid Plants (EU-063, EU-066, EU-067, and EU-068)

The molten sulfur system for sulfuric acid plants consists of two 1,500 ton truck unloading sulfur pits, a 200 ton molten sulfur transfer pit, truck unloading system with transfer point venting, receiving pit, and transfer pit. These activities are regulated by the work practice standards specified in Rule 62-296.411(1), F.A.C. for molten sulfur storage and handling facilities. Potential emissions from these activities are estimated to be 1.3 tons per year of particulate matter and 1.75 tons per year of sulfur dioxide. Similar molten sulfur systems throughout Florida do not currently use add-on control equipment because of such relatively low emissions rates. It is unlikely that add-on control equipment would be cost effective at these levels. Therefore, the Department establishes the applicable work practice standards of Rule 62-296.411(1), F.A.C. as the PM and SO₂ BART determinations for this unit, which includes: enclosing piping systems where feasible and practical; minimizing spillage; paved containment areas; and a visible emissions standard of no more than 20% opacity.

5. COMPARISON OF EXISTING EMISSIONS LIMITS TO BART DETERMINATIONS

Particulate-Only Emissions Units with Baghouses

EU No.	Emissions Unit Description	Emissions Standard	
		Existing	BART
015	AFI Shipping/Truck Loadout	20% opacity	5% opacity
023	AFI Storage Silos North Side	20% opacity	5% opacity
024	AFI Railcar Loadout System	20% opacity	5% opacity
025	AFI Limestone Storage Silos	20% opacity	5% opacity
026	AFI Silica Storage Bin	20% opacity	5% opacity
028	AFI Storage Silos South Side	20% opacity	5% opacity
030	Multifos Soda Ash Unloading	20% opacity	5% opacity
031	Multifos Soda Ash Conveying	20% opacity	5% opacity
032	Multifos Kiln A Cooler	20% opacity	5% opacity
033	Multifos Kiln B Cooler	20% opacity	5% opacity
034	Multifos Kiln A East Baghouse	20% opacity	5% opacity
035	Multifos Kiln B West Baghouse	20% opacity	5% opacity
038	Multifos Kilns A & B Surge Bin	20% opacity	5% opacity
052	AFI Limestone Feed Bin	20% opacity	5% opacity
055	MAP Plant Cooler	5% opacity	5% opacity

The above BART determinations also include the following baghouse design specification: Bags/filters in each baghouse control system shall be selected based on a design outlet specification of 0.01 grains per actual cubic feet of exhaust.

Particulate-Only Emissions Units Controlled by Wet Scrubbers

EU No.	Emissions Unit Description	Emissions Standard	
		Existing	BART
011	MAP Prill Plant	15 lb/hr	3.5 lb/hr

Emissions Units with Combustion – Particulate Matter

EU No.	Emissions Unit Description	Emissions Standard	
		Existing	BART
009	DAP Plant No.1	28.6 lb/hr	8.9 lb/hr
027	AFI Granulation Plant	36.8 lb/hr	25.3 lb/hr
036	Multifos A & B Kilns	29.83 lb/hr	17.0 lb/hr

Emissions Units with Combustion – Sulfur Dioxide

TECHNICAL EVALUATION AND PRELIMINARY DETERMINATION

EU No.	Emissions Unit Description	Emissions Standard	
		Existing	BART
002	No.1 Sulfuric Acid Plant	3.5 lb/ton of acid produced (AP)	3.5 lb/ton AP, a
003	No. 2 Sulfuric Acid Plant	3.5 lb/ton AP	3.5 lb/ton AP, a
004	No. 3 Sulfuric Acid Plant	3.5 lb/ton AP	3.5 lb//ton AP, a
009	DAP Plant No.1	Daily record of fuel sulfur	b
027	AFI Granulation Plant	Daily record of fuel sulfur	b
036	Multifos A & B Kilns	None	12.0 lb/hr, c

- a. Sulfur dioxide emissions from Nos. 1, 2, and 3 Sulfuric Acid Plants (EU-002, EU-003 and EU-004) shall not exceed 3.5 lb/ton of 100% sulfuric acid produced (AP) based on a 24-hour rolling CEMS average. No stack testing is required.
- b. To control sulfur dioxide emissions, natural gas shall be fired as the primary fuel. If the vendor is unable to provide natural gas, No. 6 fuel oil with a maximum sulfur content of 1% by weight or better grade fuel oil may be fired as a backup fuel.
- c. Venturi/Caustic scrubbing system similar to the one on Kiln C shall be installed on Kilns A and B.

Emissions Units with Combustion – Nitrogen Oxides

There are no existing NO_x emissions standards for the BART-eligible emissions units. The BART determinations are as follows.

Nitrogen oxides emissions (expressed as NO₂) from Nos. 1, 2, and 3 Sulfuric Acid Plants (EU-002, EU-003, and EU-004) shall not exceed 0.12 lb/ton of 100% sulfuric acid produced as determined by EPA Method 7E. Nitrogen oxides emissions from DAP Plant No. 1 (EU-009), AFI Granulation Plant (EU-027) and Multifos A and B Kilns, Dryer and Blending Operation (EU-036) shall be controlled by the inherent combustion design of the existing units and the firing of natural gas as the primary fuel. [Rule 62-4.070(3), F.A.C.]

Molten Sulfur System for Sulfuric Acid Plants (EU-063, EU-066, EU-067, and EU-068)

Rule 62-296.411, F.A.C. established work practice standards for “Molten Sulfur Facilities” to control sulfur and particulate emissions. The BART determination adopts these work practice standards, which includes an opacity limit of 20%.

6. MODELING ANALYSIS WITH BART CONTROLS

The applicant conducted additional visibility modeling based on SO₂ controls for the Multifos A and B kilns. The Department is establishing lower SO₂ emissions rate (12 lb/hr SO₂ limit) for the Multifos A and B kilns. The applicant modeled the Multifos A and B kilns at a controlled rate of 15.8 lb/hr—down from the 316 lb/hr for the pre-control case. The results from this modeling can be compared with the applicant’s pre-control modeling and an estimated decrease in impacts can be made. Lowering the emission rate for these kilns could potentially reduce the 8th highest visibility impact for the whole facility from a 0.805 deciview change to a 0.706 deciview change. Furthermore, the proportion of visibility impairment due to sulfate particles from the Multifos kilns would be reduced from 77 to 92 percent down to 30 to 47 percent. The following table summarizes this analysis.

TECHNICAL EVALUATION AND PRELIMINARY DETERMINATION

**Table 6A. Mosaic New Wales - Visibility Impacts at CNWA
Contribution of Visibility Impairing Particle Species Types
Revised Analysis for Multifos Dryers**

Emission Unit	Percent Contribution to 8th Highest Visibility Impacts (dv)											
	2001				2002				2003			
	Visibility	Contribution of *			Visibility	Contribution of *			Visibility	Contribution of *		
	Impact (dv)	SO ₄ (%)	NO ₃ (%)	PM ₁₀ (%)	Impact (dv)	SO ₄ (%)	NO ₃ (%)	PM ₁₀ (%)	Impact (dv)	SO ₄ (%)	NO ₃ (%)	PM ₁₀ (%)
Multifos Dryers, Before	0.109	76.6	1.1	22.3	0.110	91.6	0.3	8.0	0.162	69.9	10.8	19.3
Multifos Dryers, After	0.048	30.3	25.3	44.4	0.038	47.4	1.2	51.3	0.063	31.1	8.1	60.8

7. PRELIMINARY DETERMINATION

The Department makes a preliminary determination that the proposed project will comply with all applicable state and federal air pollution regulations regarding BART as conditioned by the draft permit. This determination is based on a technical review of the complete application, all available information, reasonable assurances provided by the applicant, and the conditions specified in the draft permit. Syed Arif is the project engineer responsible for reviewing the application and drafting the permit. Cleve Holladay is the project meteorologist responsible for reviewing the modeling analysis for visibility.

DRAFT PERMIT

PERMITTEE

Mosaic Fertilizer, LLC
P.O. Box 2000
Mulberry, Florida 33860

Authorized Representative:

Thomas W. Fuchs, Plant Manager

Permit No. 1050059-055-AC New Wales Plant BART Project Expires: June 30, 2014
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PLANT AND LOCATION

Mosaic Fertilizer, LLC operates the New Wales Plant, which processes phosphate rock into several products. The phosphate complex is classified by Standard Industrial Classification (SIC) Code No. 2874. The existing facility is located in Polk County at 15843 SE 78th Street in White Springs, Florida. This site is located about 104 kilometers from the Chassahowitzka National Wilderness Area, which is a PSD Class I Area. The UTM coordinates are Zone 17; 396.6 km E; 3078.9 km N.

STATEMENT OF BASIS

This air pollution construction permit is issued under the provisions of Chapter 403 of the Florida Statutes (F.S.), and Chapters 62-4, 62-204, 62-210, 62-212, 62-296, and 62-297 of the Florida Administrative Code (F.A.C.). Specifically, this project is subject to Rule 62-296.340, F.A.C., which requires a determination of the Best Available Retrofit Technology (BART) for each BART-eligible source as defined in 40 CFR 51.301. The state rule implements the federal provisions of Appendix Y in 40 CFR Part 51, "Guidelines for BART Determinations Under the Regional Haze Rule". In accordance with Appendix Y in 40 CFR 51, the affected visibility-impairing pollutants include the following: nitrogen oxides (NO_x), particulate matter (PM), and sulfur dioxide (SO₂). Pursuant to Rule 62-296.340, F.A.C., the permittee shall install or modify the air pollution control equipment and/or implement the air pollution control measures that are specified by this permit as the Best Available Retrofit Technology (BART).

EFFECTIVE DATE

Unless otherwise specified by this permit, the BART-eligible sources shall demonstrate compliance with the conditions of this permit no later than December 31, 2013. [Rule 62-296.340(3)(b)2, F.A.C.]

Executed in Tallahassee, Florida

(DRAFT)

Joseph Kahn, Director
Division of Air Resource Management

(Date)

SECTION 1. GENERAL INFORMATION

FACILITY DESCRIPTION

The Mosaic New Wales facility is a phosphate fertilizer manufacturing complex. The fertilizer complex processes phosphate rock into several different fertilizer products and animal feed ingredients. This is accomplished by the reaction of the phosphate rock with sulfuric acid to produce phosphoric acid and then converting the phosphoric acid to fertilizer and animal feed ingredient products. This facility consists of five double absorption sulfuric acid plants (SAP); three phosphoric acid plants (PAP); three diammonium phosphate (DAP) plants; monoammonium phosphate (MAP) plant; Granular Monoammonium Phosphate (GMAP) Plant; animal feed ingredients (AFI) plant; Multifos Production Plant; molten sulfur system; AFI Shipping -- truck and rail car loading; AFI storage silos; AFI limestone feed bin; AFI limestone storage silos; AFI silica unloading and storage; Shipping -- rail car and truck loading; Multifos soda ash unloading system; Multifos soda ash conveying system; three Multifos kiln coolers; Multifos milling and sizing system; three DAP plant coolers; phosphoric acid clarification and storage area; MAP plant cooler; limestone storage silo; and a phosphogypsum stack. This plant started operations in 1975, and is currently operating under the Title V Permit No. 1050059-045-AV, a draft of which was issued on November 2, 2006.

FACILITY REGULATORY CLASSIFICATIONS

- The facility is a major source of hazardous air pollutants (HAP).
- The facility does not operate units subject to the acid rain provisions of the Clean Air Act.
- The facility is a Title V major source of air pollution in accordance with Chapter 213, F.A.C.
- The facility is a major stationary source pursuant to Rule 62-212.400, F.A.C. for the Prevention of Significant Deterioration (PSD) of Air Quality.
- The facility operates BART-eligible units subject to Rule 62-296.340 (BART), F.A.C.

BART-ELIGIBLE EMISSIONS UNITS

This permitting action affects the following BART-eligible emissions units (EU) at the plant.

EU No.	Emission Unit Description
002	SAP No. 1
003	SAP No. 2
004	SAP No. 3
009	DAP Plant No.1
011	MAP Plant
015	AFI Shipping/Truck Loading
023	AFI Storage Silos (3) – North Side
024	AFI Shipping/Rail Car Loading
025	AFI Limestone Storage Silos (2)
026	AFI Silica Unloading and Storage
027	AFI Plant
028	AFI Storage Silos (3) – South Side
029	Fertilizer Truck/Rail Loadout No.1 (Converted to Insignificant EU in 1050059-052-AC)
030	Multifos Soda Ash Unloading System
031	Multifos Soda Ash Conveying System
032	Multifos "A" Kiln Cooler

SECTION 1. GENERAL INFORMATION

EU No.	Emission Unit Description
033	Multifos "B" Kiln Cooler
034	Multifos A & B Kilns Milling & Sizing – West Bag Collector
035	Multifos A & B Kilns Milling & Sizing – East Bag Collector
036	Multifos A & B Kilns, Dryer and Blending Operation
038	Multifos A & B Kilns Milling & Sizing – Surge Bin Bag Collector
052	AFI Limestone Feed Bin
055	MAP Plant Cooler
063	1500 Ton Truck Unloading Sulfur Pit
066	200 Ton Molten Sulfur Transfer Pit
067	1500 Ton Truck Unloading Sulfur Pit, Front Vent
068	1500 Ton Truck Unloading Sulfur Pit, Rear Vent

SECTION 2. ADMINISTRATIVE REQUIREMENTS

1. Permitting Authority: The Permitting Authority for this project is the Bureau of Air Regulation in the Division of Air Resource Management of the Florida Department of Environmental Protection. The mailing address for the Bureau of Air Regulation is 2600 Blair Stone Road, MS #5505, Tallahassee, Florida 32399-2400 (phone number 850/488-0114).
2. Compliance Authority: All documents related to compliance activities such as reports, tests, and notifications shall be submitted to the submitted to the Department's Southwest District Office, 13051 N. Telecom Parkway, Temple Terrace, Florida 33637-0926.
3. Appendices: The following Appendices are attached as an enforceable part of this permit:
 - Appendix A. Citation Formats;
 - Appendix B. General Conditions;
 - Appendix C. Standard Testing Requirements; and
 - Appendix D. Best Operational Startup Practices for Sulfuric Acid Plants.
4. Applicable Regulations, Forms and Application Procedures: Unless otherwise specified in this permit, the construction and operation of the subject emissions units shall be in accordance with the capacities and specifications stated in the application. The facility is subject to the applicable provisions of: Chapter 403, F.S.; Chapters 62-4, 62-204, 62-210, 62-212, 62-213, 62-296, and 62-297, F.A.C.; and the applicable parts and subparts of Title 40, Code of Federal Regulations (CFR). Issuance of this permit does not relieve the permittee from compliance with any applicable federal, state, or local permitting or regulations.
5. Title V Permit: This permit authorizes specific modifications and/or new construction on the affected emissions units as well as initial operation to determine compliance with conditions of this permit. A Title V operation permit is required for regular operation of the permitted emissions unit. The permittee shall apply for a revised Title V permit **on or before December 31, 2013**. To apply for a Title V permit, the applicant shall submit the appropriate application form, compliance test results, and such additional information as the Department may by law require. The application shall be submitted to the appropriate Permitting Authority with copies to the Compliance Authority. [Rules 62-4.030, 62-4.050, 62-4.220, and Chapter 62-213, F.A.C.]
6. Records Retention: All measurements, records, and other data required by this permit shall be documented in a permanent, legible format and retained for at least 5 years following the date on which such measurements, records, or data are recorded. Records shall be made available to the Department upon request. [Rule 62-213.440(1)(b)2, F.A.C.]
7. Annual Operating Report: The permittee shall submit an annual report that summarizes the actual operating rates and emissions from this facility. Annual operating reports shall be submitted to the Compliance Authority by March 1st of each year. [Rule 62-210.370(3), F.A.C.]

SECTION 3. EMISSIONS UNIT SPECIFIC CONDITIONS

A. Particulate-Only Emissions Units Controlled by Baghouses

This subsection addresses the following affected emissions units (EU).

EU No.	Emissions Unit Description
015	AFI Shipping/Truck Loadout
023	AFI Storage Silos North Side
024	AFI Railcar Loadout System
025	AFI Limestone Storage Silos
026	AFI Silica Storage Bin
028	AFI Storage Silos South Side
030	Multifos Soda Ash Unloading
031	Multifos Soda Ash Conveying
032	Multifos Kiln A Cooler
033	Multifos Kiln B Cooler
034	Multifos Kiln A East Baghouse
035	Multifos Kiln B West Baghouse
038	Multifos Kilns A & B Surge Bin
052	AFI Limestone Feed Bin
055	MAP Plant Cooler

Pursuant to Rule 62-296.340 (BART), F.A.C., the following standards represent the Best Available Retrofit Technology. These standards apply to each BART-eligible unit and are in addition to, and supplement, all other applicable standards.

CONTROL EQUIPMENT AND METHODS

1. Baghouses: The baghouse control systems shall be operated and maintained to effectively control particulate matter from each of the emissions points identified above for the regulated emissions units. [Rules 62-4.070(3) and 62-296.340 (BART), F.A.C.]
2. Circumvention: The permittee shall not 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.]

EMISSIONS LIMITING AND PERFORMANCE STANDARDS

3. Opacity Standard: Visible emissions from each baghouse exhaust shall not exceed 5% opacity as determined by EPA Method 9. [Rule 62-296.340 (BART), F.A.C.; and 40 CFR 60, Appendix A, Method 9]
4. Baghouse Design Specification: Bags/filters in each baghouse control system shall be selected based on a design outlet specification of 0.01 grains per actual cubic feet of exhaust. Compliance shall be demonstrated by maintaining the appropriate records. No stack testing is required. [Rules 62-4.070(3) and 62-296.340 (BART), F.A.C.]

SECTION 3. EMISSIONS UNIT SPECIFIC CONDITIONS

A. Particulate-Only Emissions Units Controlled by Baghouses

EMISSIONS PERFORMANCE TESTING

5. Compliance Tests: During each federal fiscal year (October 1st to September 30th), the permittee shall conduct visible emissions tests on each baghouse exhaust in accordance with EPA Method 9 to demonstrate compliance with the opacity standard. This method is described in 40 CFR 60, Appendix A, which is adopted by reference in Rule 62-204.800, F.A.C. Initial compliance tests shall be conducted during federal fiscal year 2012/2013 and a test report demonstrating compliance shall be submitted within 45 days of completing the tests and before October 1, 2013. [Rules 62-204.800, 62-296.340(3)(b)2 and 62-297.310(7)(a)4, F.A.C.; and 40 CFR 60, Appendix A, Method 9]
6. Test Requirements: The permittee shall comply with the applicable “Common Testing Requirements” specified in Appendix C of this permit, which include test notifications, sampling facilities, test procedures, test frequencies, test records and test reports. [Rule 62-297.310(7)(a)9, F.A.C.]

RECORDS

7. Baghouse Records: The permittee shall maintain records on site of the vendor data sheets that demonstrate compliance with the baghouse design outlet specification for the bags/filters. To demonstrate initial compliance, the permittee shall provide copies of such records with the corresponding visible emissions test report that demonstrates initial compliance with the opacity standard. [Rules 62-4.070(3) and 62-296.340 (BART), F.A.C.]

SECTION 3. EMISSIONS UNIT SPECIFIC CONDITIONS

B. Particulate-Only Emissions Units Controlled by Wet Scrubbers

This subsection addresses the following affected emissions unit.

EU No.	Emissions Unit Description
011	MAP Prill Plant controlled by wet scrubber

Pursuant to Rule 62-296.340 (BART), F.A.C., the following standards represent the Best Available Retrofit Technology. These standards apply to the BART-eligible unit and are in addition to, and supplement, all other applicable standards.

CONTROL EQUIPMENT AND METHODS

1. Wet Scrubbers: The wet scrubber controls shall be operated and maintained to effectively control particulate matter from the emissions point identified above for the regulated emissions unit. [Rules 62-4.070(3) and 62-296.340 (BART), F.A.C.]
2. Circumvention: The permittee shall not 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.]

EMISSIONS LIMITING AND PERFORMANCE STANDARDS

3. PM Standards: Particulate matter emissions shall not exceed 3.5 lb/hr and 0.07 lb/ton of product as determined by EPA Method 5.
[Rules 62-4.070(3) and 62-296.340 (BART), F.A.C.]

EMISSIONS COMPLIANCE TESTING

4. Compliance Tests: During each federal fiscal year (October 1st to September 30th), the permittee shall conduct tests on the wet scrubber exhaust in accordance with EPA Method 5 to demonstrate compliance with the PM standard. This method is described in 40 CFR 60, Appendix A, which is adopted by reference in Rule 62-204.800, F.A.C. Initial compliance tests shall be conducted during federal fiscal year 2012/2013 and a test report demonstrating compliance shall be submitted within 45 days of completing the test and before October 1, 2013. [Rules 62-204.800, 62-296.340(3)(b)2, and 62-297.310(7)(a)4, F.A.C.; and 40 CFR 60, Appendix A]
5. Test Requirements: The permittee shall comply with the applicable "Common Testing Requirements" requirements specified in Appendix C of this permit, which include test notifications, test procedures, sampling facilities, test frequencies, test records and test reports. Parametric data recorded for the wet scrubber during each test shall be provided with the required test report. [Rule 62-297.310(7)(a)9, F.A.C.]

MONITORING

6. Wet Scrubber Parameters: For each wet scrubber, the permittee shall install, operate and maintain devices to continuously monitor the scrubber water flow rate, the pressure drop across the scrubber and the fan amperage. Such devices shall be calibrated, fully functional and in operation before conducting the initial compliance tests. The scrubber parameters shall be continuously monitored and manually recorded at least once during each eight-hour block of operation. Alternatively, the parametric data may be continuously recorded. During each required compliance test, such data shall be recorded at 15-minute intervals.
[Rules 62-4.070(3) and 62-296.340 (BART), F.A.C.]

SECTION 3. EMISSIONS UNIT SPECIFIC CONDITIONS

B. Particulate-Only Emissions Units Controlled by Wet Scrubbers

RECORDS

7. Wet Scrubber Records: The permittee shall maintain records on site of the scrubber water flow rate and the pressure drop across the scrubber. In addition, the following vendor design information shall be maintained on site for each wet scrubber: exhaust flow rate; scrubber water flow rate, scrubber pressure drop, dust inlet loading, dust outlet loading and control efficiency. [Rules 62-4.070(3) and 62-296.340 (BART), F.A.C.]

SECTION 3. EMISSIONS UNIT SPECIFIC CONDITIONS

C. Emissions Units with Combustion

This subsection addresses the following affected emissions units (EU).

EU No.	Emission Unit Description
002	No. 1 SAP
003	No. 2 SAP
004	No. 3 SAP
009	DAP Plant No. 1
027	AFI Granulation Plant
036	Multifos A and B Kilns, Dryer and Blending Operation

Pursuant to Rule 62-296.340 (BART), F.A.C., the following standards represent the Best Available Retrofit Technology. These standards apply to each BART-eligible unit and are in addition to, and supplement, all other applicable standards.

CONTROL EQUIPMENT AND METHODS

- Wet Scrubbers: The existing wet scrubber controls shall be operated and maintained to effectively control particulate matter from each of the emissions points identified above for the regulated emissions units. A new venturi/caustic scrubbing system shall be installed on Kilns A and B (EU-036) to achieve the PM and SO₂ BART standards specified in this permit. [Rules 62-4.070(3) and 62-296.340 (BART), F.A.C.]
- Circumvention: The permittee shall not 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.]
- Best Operational Startup Practices for Sulfuric Acid Plants (EU-002, EU-003 and EU-004): Sulfuric acid plants are authorized for excess emissions from startup for a period of three consecutive hours provided best operational practices to minimize emissions are adhered to in accordance with the agreement titled “Best Operational Startup Practices for Sulfuric Acid Plants” attached to this permit as Appendix D. [Rule 62-210.700, F.A.C., 40 CFR 60.7]
- General Best Operational Practices: Best operational practices to minimize leaks of sulfur dioxide and sulfur trioxide, or other fugitive process emissions shall be adhered to and shall include regular inspections and prompt repair or correction of any leaks or other fugitive emissions. [Rule 62-296.320, F.A.C.]

EMISSIONS LIMITING AND PERFORMANCE STANDARDS

- PM and SO₂ Standards: Particulate matter and sulfur dioxide emissions shall not exceed the following emissions standards as determined by EPA Methods 5 and 6/6C, respectively.

EU No.	Emissions Unit Description	BART Standards	
		PM	SO ₂
002	No.1 Sulfuric Acid Plant	---	3.5 lb/ton AP, 496 lb/hour, a
003	No. 2 Sulfuric Acid Plant	---	3.5 lb/ton AP, 496 lb/hour, a
004	No. 3 Sulfuric Acid Plant	---	3.5 lb/ton AP, 496 lb/hour, a
009	DAP Plant No.1	8.9 lb/hour	b
027	AFI Granulation Plant	25.3 lb/hour	b
036	Multifos A & B Kilns	17.0 lb/hour, c	12.0 lb/hr, c

SECTION 3. EMISSIONS UNIT SPECIFIC CONDITIONS

C. Emissions Units with Combustion

- a. Sulfur dioxide emissions from Nos. 1, 2, and 3 Sulfuric Acid Plants (EU-002, EU-003 and EU-004) shall not exceed 3.5 lb/ton of 100% sulfuric acid produced (AP) based on a 24-hour rolling CEMS average. No stack testing is required.
- b. To control sulfur dioxide emissions, natural gas shall be fired as the primary fuel. If the vendor is unable to provide natural gas, No. 6 fuel oil with a maximum sulfur content of 1% by weight or better grade fuel oil may be fired as a backup fuel.
- c. Venturi/Caustic scrubbing system similar to the one on Kiln C shall be installed on Kilns A and B.
[Rules 62-4.070(3) and 62-296.340 (BART), F.A.C.]
6. Opacity Standards: Visible emissions from the Nos. 1, 2 and 3 Sulfuric Acid Plants (EU-002, EU-003 and EU-004) shall not exceed 10% opacity as determined by EPA Method 9. Opacity observations shall be made at the point of greatest opacity in that portion of the plume where condensed water vapor is not present.
[Rule 62-296.340 (BART), F.A.C.; and 40 CFR 60.83(a)2 and 40 CFR 60, Appendix A, Method 9]
7. NOx Emissions Standards: Nitrogen oxides emissions (expressed as NO₂) from the Nos. 1, 2 and 3 Sulfuric Acid Plants (EU-002, EU-003 and EU-004) shall not exceed 0.12 lb/ton of 100% sulfuric acid produced as determined by EPA Method 7E. Nitrogen oxides emissions from DAP Plant No. 1 (EU-009), AFI Granulation Plant (EU-027) and Multifos A and B Kilns, Dryer and Blending Operation (EU-036) shall be controlled by the inherent combustion design of the existing units and the firing of natural gas as the primary fuel. [Rule 62-4.070(3), F.A.C.]

EMISSIONS COMPLIANCE TESTING

8. Compliance Tests: During each federal fiscal year (October 1st to September 30th), the permittee shall conduct the following compliance tests.
 - a. The permittee shall conduct visible emissions tests on the Nos. 1, 2 and 3 Sulfuric Acid Plants (EU-002, EU-003 and EU-004) in accordance with EPA Method 9 to demonstrate compliance with the opacity standard.
 - b. To demonstrate compliance with the PM standards, the permittee shall conduct tests in accordance with EPA Method 5 on DAP Plant No. 1 (EU-009), AFI Granulation Plant (EU-027) and Multifos A and B Kilns, Dryer and Blending Operation (EU-036).
 - c. To demonstrate compliance with the SO₂ standards, the permittee shall conduct tests in accordance with EPA Method 6/6C on Multifos A and B Kilns, Dryer and Blending Operation (EU-036).
 - d. These methods are described in 40 CFR 60, Appendix A, which is adopted by reference in Rule 62-204.800, F.A.C.
 - e. Initial compliance tests shall be conducted during federal fiscal year 2012/2013 and a test report demonstrating compliance shall be submitted within 45 days of completing each test and before October 1, 2013.

{Permitting Note: For the PM and SO₂ BART standards, it may be necessary to develop new excursion levels for the scrubber parameters if subject to a Compliance Assurance Monitoring (CAM) plan. This may require additional compliance testing.}

[Rules 62-204.800, 62-296.340(3)(b)2, and 62-297.310(7)(a)4, F.A.C.; and 40 CFR 60, Appendix A]

9. Test Requirements: The permittee shall comply with the applicable "Common Testing Requirements" requirements specified in Appendix C of this permit, which include test notifications, test procedures,

SECTION 3. EMISSIONS UNIT SPECIFIC CONDITIONS

C. Emissions Units with Combustion

sampling facilities, test frequencies, test records and test reports. Parametric data recorded for the wet scrubber during each test shall be provided with the required test report. As necessary, EPA Methods 1 – 4 shall be conducted to support the other test methods. [Rule 62-297.310(7)(a)9, F.A.C.]

MONITORING

10. Wet Scrubber Parameters: For each wet scrubber, the permittee shall install, operate and maintain devices to continuously monitor the scrubber water flow rate, the pressure drop across the scrubber and the fan amperage. Such devices shall be calibrated, fully functional and in operation before conducting the initial compliance tests. In addition, the permittee shall install, operate and maintain devices to continuously monitor the pH level of the caustic solution in the wet scrubbers for the Multifos A and B Kilns (EU-036).
- For Multifos A and B Kilns, Dryer and Blending Operation (EU-036), the scrubber parameters shall be continuously monitored and recorded. For each operating hour, the 1-hour block average shall be computed from at least four data points evenly spaced over each operating hour. This data shall be used to develop new excursion levels for the scrubber parameters in the CAM plan including PM and SO₂.
 - For DAP Plant No. 1 (EU-009), the scrubber parameters shall be continuously monitored and manually recorded at least once during each eight-hour block of operation. For AFI Granulation Plant (EU-027), the scrubber parameters shall be continuously monitored and manually recorded at least once during each 12-hour block of operation. Alternatively, the parametric data may be continuously recorded. During each required compliance test, such data shall be recorded at 15-minute intervals.

[Rules 62-4.070(3) and 62-296.340 (BART), F.A.C.]

11. CEMS Compliance Demonstration: The permittee currently operates continuous emissions monitoring systems (CEMS) to determine SO₂ emissions from the Nos. 1, 2 and 3 Sulfuric Acid Plants (EU-002, EU-003 and EU-004). The permittee shall operate and maintain each CEMS to demonstrate compliance with the BART SO₂ standards specified in this permit, which requires the data to also be reduced to 24-hour rolling averages. Each CEMS shall be certified to meet Performance Specification 2 in Appendix B of 40 CFR 60 and the quality assurance procedures specified in Appendix F of 40 CFR 60. [Rules 62-296.340 (BART) and 62-4.070(3), F.A.C.]

RECORDS

12. Wet Scrubber Records: The permittee shall maintain records on site of the scrubber water flow rate and the pressure drop across the scrubber. In addition, the following vendor design information shall be maintained on site for each wet scrubber: exhaust flow rate; scrubber water flow rate, scrubber pressure drop, dust inlet loading, dust outlet loading and control efficiency. [Rules 62-4.070(3) and 62-296.340 (BART), F.A.C.]

SECTION 3. EMISSIONS UNIT SPECIFIC CONDITIONS

D. Molten Sulfur System for ‘C’ and ‘D’ Sulfuric Acid Plants

This subsection addresses the following affected emissions units.

EU No.	Emissions Unit Description
063	1500 Ton Truck Unloading Sulfur Pit
066	200 Ton Molten Sulfur Transfer Pit
067	1500 Ton Truck Unloading Sulfur Pit, Front Vent
068	1500 Ton Truck Unloading Sulfur Pit, Rear Vent

Pursuant to Rule 62-296.340 (BART), F.A.C., the following standards represent the Best Available Retrofit Technology. These standards apply to each BART-eligible unit and are in addition to, and supplement, all other applicable standards.

EMISSIONS LIMITING AND PERFORMANCE STANDARDS

1. Molten Sulfur Facilities – Work Practice Standards: All molten sulfur facilities shall employ, as a minimum, the following practices to minimize the emission of sulfur particulate matter into the atmosphere.
 - a. All molten sulfur transfer shall be through enclosed piping systems where feasible and practical. In user facilities, molten sulfur may be transferred by covered trench or a movable spout which is positioned over a receiving pit. Contact surfaces between movable unloading arms and stationary pipes shall seat effectively around the entire circumference to minimize spillage.
 - b. All areas surrounding points where molten sulfur pipes are routinely disconnected and areas where molten sulfur is transferred to trucks or railcars shall be paved and curbed within 20 feet of the point of disconnection or transfer to contain any spilled molten sulfur, or shall be provided with non-corrodible drip pans or other secondary containment, positioned to collect spills, that are adequate to contain amounts of sulfur that may escape during routine disconnection, reconnection or operation of the piping system.
 - c. All spilled molten sulfur shall be collected and properly disposed of whenever the containment area is filled to one-half its containment capacity, or monthly, whichever is more frequent. Spills of molten sulfur outside of a containment area, or where subject to vehicular traffic, shall be collected and disposed of as soon as possible, but no later than 24 hours after the spill occurs. Drip pans or other secondary containment shall be cleaned as needed to prevent exceedance of capacity, but at least weekly.
 - d. All vent surfaces shall be cleaned monthly to remove captured particles.
 - e. All owners and operators of molten sulfur storage and handling facilities shall maintain records of spills outside of containment areas and of collection and disposal of spilled sulfur. Such records shall be retained for a minimum of two years and shall be available for inspection by the Department upon request.
 - f. Owners and operators shall establish and implement procedures to minimize spills from any movable loading arm or pipe upon disconnection, reconnection or operation.

[Rules 62-296.340 (BART) and 62-296.411, F.A.C.]

2. Opacity Standard: As determined by EPA Method 9, visible emissions from any emission point in the molten sulfur facility shall not exceed 20% opacity (6-minute average). [Rules 62-296.340 (BART) and 62-296.411, F.A.C.]

SECTION 3. EMISSIONS UNIT SPECIFIC CONDITIONS

D. Molten Sulfur System for 'C' and 'D' Sulfuric Acid Plants

EMISSIONS PERFORMANCE TESTING

3. Compliance Tests: The permittee shall conduct visible emissions tests every 5 years (prior to operation permit renewal) in accordance with EPA Method 9 to demonstrate compliance with the opacity standard. This method is described in 40 CFR 60, Appendix A, which is adopted by reference in Rule 62-204.800, F.A.C. 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 shall 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. [Rules 62-204.800, 62-296.340(3)(b)2 and 62-297.310(7)(a)4, F.A.C.; and 40 CFR 60, Appendix A, Method 9]
4. Test Requirements: The permittee shall comply with the applicable "Common Testing Requirements" specified in Appendix C of this permit, which include test notifications, sampling facilities, test procedures, test frequencies, test records and test reports. [Rule 62-297.310(7)(a)9, F.A.C.]

SECTION 4. APPENDICES

CONTENTS

Appendix A. Citation Formats

Appendix B. General Conditions

Appendix C. Standard Testing Requirements

Appendix D. Best Operational Start-Up Practices for Sulfuric Acid Plants

SECTION 4. APPENDIX A
CITATION FORMATS

The following examples illustrate the format used in the permit to identify applicable permitting actions and regulations.

REFERENCES TO PREVIOUS PERMITTING ACTIONS

Old Permit Numbers

Example: Permit No. AC50-123456 or Air Permit No. AO50-123456

Where: “AC” identifies the permit as an Air Construction Permit
“AO” identifies the permit as an Air Operation Permit
“123456” identifies the specific permit project number

New Permit Numbers

Example: Permit Nos. 099-2222-001-AC, 099-2222-001-AO, or 099-2222-001-AV

Where: “099” represents the specific county ID number in which the project is located
“2222” represents the specific facility ID number
“001” identifies the specific permit project
“AC” identifies the permit as an air construction permit
“AO” identifies the permit as a minor source air operation permit
“AV” identifies the permit as a Title V Major Source Air Operation Permit

PSD Permit Numbers

Example: Permit No. PSD-FL-317

Where: “PSD” means issued pursuant to the Prevention of Significant Deterioration of Air Quality
“FL” means that the permit was issued by the State of Florida
“317” identifies the specific permit project

RULE CITATION FORMATS

Florida Administrative Code (F.A.C.)

Example: [Rule 62-213.205, F.A.C.]

Means: Title 62, Chapter 213, Rule 205 of the Florida Administrative Code

Code of Federal Regulations (CFR)

Example: [40 CFR 60.7]

Means: Title 40, Part 60, Section 7

SECTION 4. APPENDIX B

GENERAL CONDITIONS

The permittee shall comply with the following general conditions from Rule 62-4.160, F.A.C.

1. The terms, conditions, requirements, limitations, and restrictions set forth in this permit are "Permit Conditions" and are binding and enforceable pursuant to Sections 403.161, 403.727, or 403.859 through 403.861, Florida Statutes. The permittee is placed on notice that the Department will review this permit periodically and may initiate enforcement action for any violation of these conditions.
2. This permit is valid only for the specific processes and operations applied for and indicated in the approved drawings or exhibits. Any unauthorized deviation from the approved drawings, exhibits, specifications, or conditions of this permit may constitute grounds for revocation and enforcement action by the Department.
3. As provided in Subsections 403.087(6) and 403.722(5), Florida Statutes, the issuance of this permit does not convey and vested rights or any exclusive privileges. Neither does it authorize any injury to public or private property or any invasion of personal rights, nor any infringement of federal, state or local laws or regulations. This permit is not a waiver or approval of any other Department permit that may be required for other aspects of the total project which are not addressed in the permit.
4. This permit conveys no title to land or water, does not constitute State recognition or acknowledgment of title, and does not constitute authority for the use of submerged lands unless herein provided and the necessary title or leasehold interests have been obtained from the State. Only the Trustees of the Internal Improvement Trust Fund may express State opinion as to title.
5. This permit does not relieve the permittee from liability for harm or injury to human health or welfare, animal, or plant life, or property caused by the construction or operation of this permitted source, or from penalties therefore; nor does it allow the permittee to cause pollution in contravention of Florida Statutes and Department rules, unless specifically authorized by an order from the Department.
6. The permittee shall properly operate and maintain the facility and systems of treatment and control (and related appurtenances) that are installed or used by the permittee to achieve compliance with the conditions of this permit, as required by Department rules. This provision includes the operation of backup or auxiliary facilities or similar systems when necessary to achieve compliance with the conditions of the permit and when required by Department rules.
7. The permittee, by accepting this permit, specifically agrees to allow authorized Department personnel, upon presentation of credentials or other documents as may be required by law and at a reasonable time, access to the premises, where the permitted activity is located or conducted to:
 - a. Have access to and copy and records that must be kept under the conditions of the permit;
 - b. Inspect the facility, equipment, practices, or operations regulated or required under this permit, and,
 - c. Sample or monitor any substances or parameters at any location reasonably necessary to assure compliance with this permit or Department rules.

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

8. If, for any reason, the permittee does not comply with or will be unable to comply with any condition or limitation specified in this permit, the permittee shall immediately provide the Department with the following information:
 - a. A description of and cause of non-compliance; and
 - b. The period of noncompliance, including dates and times; or, if not corrected, the anticipated time the non-compliance is expected to continue, and steps being taken to reduce, eliminate, and prevent recurrence of the non-compliance.

SECTION 4. APPENDIX B
GENERAL CONDITIONS

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

9. In accepting this permit, the permittee understands and agrees that all records, notes, monitoring data and other information relating to the construction or operation of this permitted source which are submitted to the Department may be used by the Department as evidence in any enforcement case involving the permitted source arising under the Florida Statutes or Department rules, except where such use is prescribed by Sections 403.73 and 403.111, Florida Statutes. Such evidence shall only be used to the extent it is consistent with the Florida Rules of Civil Procedure and appropriate evidentiary rules.
10. The permittee agrees to comply with changes in Department rules and Florida Statutes after a reasonable time for compliance, provided, however, the permittee does not waive any other rights granted by Florida Statutes or Department rules.
11. This permit is transferable only upon Department approval in accordance with Florida Administrative Code Rules 62-4.120 and 62-730.300, F.A.C., as applicable. The permittee shall be liable for any non-compliance of the permitted activity until the transfer is approved by the Department.
12. This permit or a copy thereof shall be kept at the work site of the permitted activity.
13. This permit also constitutes:
 - a. Determination of Best Available Control Technology (Not Applicable);
 - b. Determination of Prevention of Significant Deterioration (Not Applicable); and
 - c. Compliance with New Source Performance Standards (Not Applicable).
14. The permittee shall comply with the following:
 - a. Upon request, the permittee shall furnish all records and plans required under Department rules. During enforcement actions, the retention period for all records will be extended automatically unless otherwise stipulated by the Department.
 - b. The permittee shall hold at the facility or other location designated by this permit records of all monitoring information (including all calibration and maintenance records and all original strip chart recordings for continuous monitoring instrumentation) required by the permit, copies of all reports required by this permit, and records of all data used to complete the application or this permit. These materials shall be retained at least three years from the date of the sample, measurement, report, or application unless otherwise specified by Department rule.
 - c. Records of monitoring information shall include:
 - 1) The date, exact place, and time of sampling or measurements;
 - 2) The person responsible for performing the sampling or measurements;
 - 3) The dates analyses were performed;
 - 4) The person responsible for performing the analyses;
 - 5) The analytical techniques or methods used; and
 - 6) The results of such analyses.
15. When requested by the Department, the permittee shall within a reasonable time furnish any information required by law which is needed to determine compliance with the permit. If the permittee becomes aware that relevant facts were not submitted or were incorrect in the permit application or in any report to the Department, such facts or information shall be corrected promptly.

SECTION 4. APPENDIX C
STANDARD TESTING REQUIREMENTS

Unless otherwise specified by permit, all emissions units that require testing are subject to the following conditions as applicable.

1. Required Number of Test Runs: For mass emission limitations, a compliance test shall consist of three complete and separate determinations of the total air pollutant emission rate through the test section of the stack or duct and three complete and separate determinations of any applicable process variables corresponding to the three distinct time periods during which the stack emission rate was measured; provided, however, that three complete and separate determinations shall not be required if the process variables are not subject to variation during a compliance test, or if three determinations are not necessary in order to calculate the unit's emission rate. The three required test runs shall be completed within one consecutive five-day period. In the event that a sample is lost or one of the three runs must be discontinued because of circumstances beyond the control of the owner or operator, and a valid third run cannot be obtained within the five-day period allowed for the test, the Secretary or his or her designee may accept the results of two complete runs as proof of compliance, provided that the arithmetic mean of the two complete runs is at least 20% below the allowable emission limiting standard. [Rule 62-297.310(1), F.A.C.]
2. Operating Rate During Testing: Unless otherwise stated in the applicable emission limiting standard rule, testing of emissions shall be conducted with the emissions unit operating 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 maximum permitted capacity; in this case, subsequent emissions unit operation is limited to 110 percent of the test rate 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.
 - a. *Combustion Turbines*. (Reserved)
 - b. *All Other Sources*. Permitted capacity is defined as 90 to 100 percent of the maximum operation rate allowed by the permit.
[Rule 62-297.310(2), F.A.C.]
3. Calculation of Emission Rate: For each emissions performance test, the indicated emission rate or concentration shall be the arithmetic average of the emission rate or concentration determined by each of the three separate test runs unless otherwise specified in a particular test method or applicable rule. [Rule 62-297.310(3), F.A.C.]
4. Applicable Test Procedures:
 - a. *Required Sampling Time*.
 - 1) Unless otherwise specified in the applicable rule, the required sampling time for each test run shall be no less than one hour and no greater than four hours, and the sampling time at each sampling point shall be of equal intervals of at least two minutes.
 - 2) *Opacity Compliance Tests*. When either EPA Method 9 or DEP Method 9 is specified as the applicable opacity test method, the required minimum period of observation for a compliance test shall be sixty (60) minutes for emissions units which emit or have the potential to emit 100 tons per year or more of particulate matter, and thirty (30) minutes for emissions units which have potential emissions less than 100 tons per year of particulate matter and are not subject to a multiple-valued opacity standard. The opacity test observation period shall include the period during which the highest opacity emissions can reasonably be expected to occur. Exceptions to these requirements are as follows:
 - a) For batch, cyclical processes, or other operations which are normally completed within less than the minimum observation period and do not recur within that time, the period of observation

SECTION 4. APPENDIX C
STANDARD TESTING REQUIREMENTS

shall be equal to the duration of the batch cycle or operation completion time.

- b) The observation period for special opacity tests that are conducted to provide data to establish a surrogate standard pursuant to Rule 62-297.310(5)(k), F.A.C., Waiver of Compliance Test Requirements, shall be established as necessary to properly establish the relationship between a proposed surrogate standard and an existing mass emission limiting standard.
 - c) The minimum observation period for opacity tests conducted by employees or agents of the Department to verify the day-to-day continuing compliance of a unit or activity with an applicable opacity standard shall be twelve minutes.
- b. *Minimum Sample Volume.* Unless otherwise specified in the applicable rule, the minimum sample volume per run shall be 25 dry standard cubic feet.
- c. *Required Flow Rate Range.* For EPA Method 5 particulate sampling, acid mist/sulfur dioxide, and fluoride sampling which uses Greenburg Smith type impingers, the sampling nozzle and sampling time shall be selected such that the average sampling rate will be between 0.5 and 1.0 actual cubic feet per minute, and the required minimum sampling volume will be obtained.
- d. *Calibration of Sampling Equipment.* Calibration of the sampling train equipment shall be conducted in accordance with the schedule shown in Table 297.310-1.
- e. *Allowed Modification to EPA Method 5.* When EPA Method 5 is required, the following modification is allowed: the heated filter may be separated from the impingers by a flexible tube.

TABLE 297.310-1 CALIBRATION SCHEDULE			
Item	Minimum Frequency	Reference Instrument	Tolerance
Liquid in glass thermometer	Annually	ASTM Hg in glass ref. thermometer or equivalent or thermometric points	± 2%
Bimetallic thermometer	Quarterly	Calib. liq. in glass	5° F
Thermocouple	Annually	ASTM Hg in glass ref. thermometer, NBS calibrated reference and potentiometer	5° F
Barometer	Monthly	Hg barometer or NOAA station	± 1% scale
Pitot Tube	When required or when damaged	By construction or measurements in wind tunnel D greater than 16" and standard pitot tube	See EPA Method 2, Fig. 2-2 & 2-3
Probe Nozzles	Before each test or when nicked, dented, or corroded	Micrometer	± 0.001" mean of at least three readings; maximum deviation between readings, 0.004"
Dry Gas Meter and Orifice Meter	1. Full Scale: When received, when 5% change observed, annually	Spirometer or calibrated wet test or dry gas test meter	2%
	2. One Point: Semiannually		
	3. Check after each test series	Comparison check	5%

[Rule 62-297.310(4), F.A.C.]

SECTION 4. APPENDIX C
STANDARD TESTING REQUIREMENTS

5. Determination of Process Variables:

- a. *Required Equipment.* The owner or operator of an emissions unit for which compliance tests are required shall install, operate, and maintain equipment or instruments necessary to determine process variables, such as process weight input or heat input, when such data are needed in conjunction with emissions data to determine the compliance of the emissions unit with applicable emission limiting standards.
- b. *Accuracy of Equipment.* Equipment or instruments used to directly or indirectly determine process variables, including devices such as belt scales, weight hoppers, flow meters, and tank scales, shall be calibrated and adjusted to indicate the true value of the parameter being measured with sufficient accuracy to allow the applicable process variable to be determined within 10% of its true value.

[Rule 62-297.310(5), F.A.C.]

6. Required Stack Sampling Facilities: Sampling facilities include sampling ports, work platforms, access to work platforms, electrical power, and sampling equipment support. All stack sampling facilities must meet any Occupational Safety and Health Administration (OSHA) Safety and Health Standards described in 29 CFR Part 1910, Subparts D and E.

- a. *Permanent Test Facilities.* The owner or operator of an emissions unit for which a compliance test, other than a visible emissions test, is required on at least an annual basis, shall install and maintain permanent stack sampling facilities.
- b. *Temporary Test Facilities.* The owner or operator of an emissions unit that is not required to conduct a compliance test on at least an annual basis may use permanent or temporary stack sampling facilities. If the owner chooses to use temporary sampling facilities on an emissions unit, and the Department elects to test the unit, such temporary facilities shall be installed on the emissions unit within 5 days of a request by the Department and remain on the emissions unit until the test is completed.
- c. *Sampling Ports.*
 - 1) All sampling ports shall have a minimum inside diameter of 3 inches.
 - 2) The ports shall be capable of being sealed when not in use.
 - 3) The sampling ports shall be located in the stack at least 2 stack diameters or equivalent diameters downstream and at least 0.5 stack diameter or equivalent diameter upstream from any fan, bend, constriction or other flow disturbance.
 - 4) For emissions units for which a complete application to construct has been filed prior to December 1, 1980, at least two sampling ports, 90 degrees apart, shall be installed at each sampling location on all circular stacks that have an outside diameter of 15 feet or less. For stacks with a larger diameter, four sampling ports, each 90 degrees apart, shall be installed. For emissions units for which a complete application to construct is filed on or after December 1, 1980, at least two sampling ports, 90 degrees apart, shall be installed at each sampling location on all circular stacks that have an outside diameter of 10 feet or less. For stacks with larger diameters, four sampling ports, each 90 degrees apart, shall be installed. On horizontal circular ducts, the ports shall be located so that the probe can enter the stack vertically, horizontally or at a 45 degree angle.
 - 5) On rectangular ducts, the cross sectional area shall be divided into the number of equal areas in accordance with EPA Method 1. Sampling ports shall be provided which allow access to each sampling point. The ports shall be located so that the probe can be inserted perpendicular to the gas flow.

SECTION 4. APPENDIX C
STANDARD TESTING REQUIREMENTS

d. *Work Platforms.*

- 1) Minimum size of the working platform shall be 24 square feet in area. Platforms shall be at least 3 feet wide.
- 2) On circular stacks with 2 sampling ports, the platform shall extend at least 110 degrees around the stack.
- 3) On circular stacks with more than two sampling ports, the work platform shall extend 360 degrees around the stack.
- 4) All platforms shall be equipped with an adequate safety rail (ropes are not acceptable), toeboard, and hinged floor-opening cover if ladder access is used to reach the platform. The safety rail directly in line with the sampling ports shall be removable so that no obstruction exists in an area 14 inches below each sample port and 6 inches on either side of the sampling port.

e. *Access to Work Platform.*

- 1) Ladders to the work platform exceeding 15 feet in length shall have safety cages or fall arresters with a minimum of 3 compatible safety belts available for use by sampling personnel.
- 2) Walkways over free-fall areas shall be equipped with safety rails and toeboards.

f. *Electrical Power.*

- 1) A minimum of two 120-volt AC, 20-amp outlets shall be provided at the sampling platform within 20 feet of each sampling port.
- 2) If extension cords are used to provide the electrical power, they shall be kept on the plant's property and be available immediately upon request by sampling personnel.

g. *Sampling Equipment Support.*

- 1) A three-quarter inch eyebolt and an angle bracket shall be attached directly above each port on vertical stacks and above each row of sampling ports on the sides of horizontal ducts.
 - a) The bracket shall be a standard 3 inch × 3 inch × one-quarter inch equal-legs bracket which is 1 and one-half inches wide. A hole that is one-half inch in diameter shall be drilled through the exact center of the horizontal portion of the bracket. The horizontal portion of the bracket shall be located 14 inches above the centerline of the sampling port.
 - b) A three-eighth inch bolt which protrudes 2 inches from the stack may be substituted for the required bracket. The bolt shall be located 15 and one-half inches above the centerline of the sampling port.
 - c) The three-quarter inch eyebolt shall be capable of supporting a 500 pound working load. For stacks that are less than 12 feet in diameter, the eyebolt shall be located 48 inches above the horizontal portion of the angle bracket. For stacks that are greater than or equal to 12 feet in diameter, the eyebolt shall be located 60 inches above the horizontal portion of the angle bracket. If the eyebolt is more than 120 inches above the platform, a length of chain shall be attached to it to bring the free end of the chain to within safe reach from the platform.
- 2) A complete monorail or dualrail arrangement may be substituted for the eyebolt and bracket.
- 3) When the sample ports are located in the top of a horizontal duct, a frame shall be provided above the port to allow the sample probe to be secured during the test.

SECTION 4. APPENDIX C
STANDARD TESTING REQUIREMENTS

7. Frequency of Compliance Tests: The following provisions apply only to those emissions units that are subject to an emissions limiting standard for which compliance testing is required.
- a. General Compliance Testing.
- 1) The owner or operator of a new or modified emissions unit that is subject to an emission limiting standard shall conduct a compliance test that demonstrates compliance with the applicable emission limiting standard prior to obtaining an operation permit for such emissions unit.
 - 2) For excess emission limitations for particulate matter specified in Rule 62-210.700, F.A.C., a compliance test shall be conducted annually while the emissions unit is operating under soot blowing conditions in each federal fiscal year during which soot blowing is part of normal emissions unit operation, except that such test shall not be required in any federal fiscal year in which a fossil fuel steam generator does not burn liquid and/or solid fuel for more than 400 hours other than during startup.
 - 3) The owner or operator of an emissions unit that is subject to any emission limiting standard shall conduct a compliance test that demonstrates compliance with the applicable emission limiting standard prior to obtaining a renewed operation permit. Emissions units that are required to conduct an annual compliance test may submit the most recent annual compliance test to satisfy the requirements of this provision. In renewing an air operation permit pursuant to sub-subparagraph 62-210.300(2)(a)3.b., c., or d., F.A.C., the Department shall not require submission of emission compliance test results for any emissions unit that, during the year prior to renewal:
 - a) Did not operate; or
 - b) In the case of a fuel burning emissions unit, burned liquid and/or solid fuel for a total of no more than 400 hours,
 - 4) During each federal fiscal year (October 1 – September 30), unless otherwise specified by rule, order, or permit, the owner or operator of each emissions unit shall have a formal compliance test conducted for:
 - a) Visible emissions, if there is an applicable standard;
 - b) Each of the following pollutants, if there is an applicable standard, and if the emissions unit emits or has the potential to emit: 5 tons per year or more of lead or lead compounds measured as elemental lead; 30 tons per year or more of acrylonitrile; or 100 tons per year or more of any other regulated air pollutant; and
 - c) Each NESHAP pollutant, if there is an applicable emission standard.
 - 5) An annual compliance test for particulate matter emissions shall not be required for any fuel burning emissions unit that, in a federal fiscal year, does not burn liquid and/or solid fuel, other than during startup, for a total of more than 400 hours.
 - 6) For fossil fuel steam generators on a semi-annual particulate matter emission compliance testing schedule, a compliance test shall not be required for any six-month period in which liquid and/or solid fuel is not burned for more than 200 hours other than during startup.
 - 7) For emissions units electing to conduct particulate matter emission compliance testing quarterly pursuant to paragraph 62-296.405(2)(a), F.A.C., a compliance test shall not be required for any quarter in which liquid and/or solid fuel is not burned for more than 100 hours other than during startup.
 - 8) Any combustion turbine that does not operate for more than 400 hours per year shall conduct a

SECTION 4. APPENDIX C
STANDARD TESTING REQUIREMENTS

visible emissions compliance test once per each five-year period, coinciding with the term of its air operation permit.

- 9) The owner or operator shall notify the Department, at least 15 days prior to the date on which each formal compliance test is to begin, of the date, time, and place of each such test, and the test contact person who will be responsible for coordinating and having such test conducted for the owner or operator.
 - 10) An annual compliance test conducted for visible emissions shall not be required for units exempted from air permitting pursuant to subsection 62-210.300(3), F.A.C.; units determined to be insignificant pursuant to subparagraph 62-213.300(2)(a)1., F.A.C., or paragraph 62-213.430(6)(b), F.A.C.; or units permitted under the General Permit provisions in paragraph 62-210.300(4)(a) or Rule 62-213.300, F.A.C., unless the general permit specifically requires such testing.
- b. 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 shall 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.

8. Test Reports:

- a. The owner or operator of an emissions unit for which a compliance test is required shall file a report with the Department on the results of each such test.
- b. The required test report shall be filed with the Department as soon as practical but no later than 45 days after the last sampling run of each test is completed.
- c. The test report shall provide sufficient detail on the emissions unit tested and the test procedures used to allow the Department to determine if the test was properly conducted and the test results properly computed. As a minimum, the test report, other than for an EPA or DEP Method 9 test, shall provide the following information:
 - 1) The type, location, and designation of the emissions unit tested.
 - 2) The facility at which the emissions unit is located.
 - 3) The owner or operator of the emissions unit.
 - 4) The normal type and amount of fuels used and materials processed, and the types and amounts of fuels used and material processed during each test run.
 - 5) The means, raw data and computations used to determine the amount of fuels used and materials processed, if necessary to determine compliance with an applicable emission limiting standard.
 - 6) The type of air pollution control devices installed on the emissions unit, their general condition, their normal operating parameters (pressure drops, total operating current and GPM scrubber water), and their operating parameters during each test run.
 - 7) A sketch of the duct within 8 stack diameters upstream and 2 stack diameters downstream of the sampling ports, including the distance to any upstream and downstream bends or other flow disturbances.
 - 8) The date, starting time and duration of each sampling run.

SECTION 4. APPENDIX C
STANDARD TESTING REQUIREMENTS

- 9) The test procedures used, including any alternative procedures authorized pursuant to Rule 62-297.620, F.A.C. Where optional procedures are authorized in this chapter, indicate which option was used.
- 10) The number of points sampled and configuration and location of the sampling plane.
- 11) For each sampling point for each run, the dry gas meter reading, velocity head, pressure drop across the stack, temperatures, average meter temperatures and sample time per point.
- 12) The type, manufacturer and configuration of the sampling equipment used.
- 13) Data related to the required calibration of the test equipment.
- 14) Data on the identification, processing and weights of all filters used.
- 15) Data on the types and amounts of any chemical solutions used.
- 16) Data on the amount of pollutant collected from each sampling probe, the filters, and the impingers, are reported separately for the compliance test.
- 17) The names of individuals who furnished the process variable data, conducted the test, analyzed the samples and prepared the report.
- 18) All measured and calculated data required to be determined by each applicable test procedure for each run.
- 19) The detailed calculations for one run that relate the collected data to the calculated emission rate.
- 20) The applicable emission standard and the resulting maximum allowable emission rate for the emissions unit plus the test result in the same form and unit of measure.
- 21) A certification that, to the knowledge of the owner or his authorized agent, all data submitted are true and correct. When a compliance test is conducted for the Department or its agent, the person who conducts the test shall provide the certification with respect to the test procedures used. The owner or his authorized agent shall certify that all data required and provided to the person conducting the test are true and correct to his knowledge.

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

9. Stack: The terms stack and duct are used interchangeably in this rule.

[Rule 62-297.310(9), F.A.C.]

SECTION 4. APPENDIX D

BEST OPERATIONAL START-UP PRACTICES FOR SULFURIC ACID PLANTS

1. Only one sulfuric acid plant at a facility should be started up and burning sulfur at a time. There are times when it will be acceptable for more than one sulfuric acid plant to be in the start-up mode at the same time, provided the following condition is met. It is not acceptable to initiate sulfur burning at one sulfuric acid plant when another plant at the same facility is emitting SO₂ at a rate in excess of the emission limits imposed by the permit or rule, as determined by the CEMs emission rates for the immediately preceding 20 minutes.
2. A plant start-up must be at the lowest practicable operating rate, not to exceed 70 percent of the designated operating rate, until the SO₂ monitor indicates compliance. Because production rate is difficult to measure during start-up, if a more appropriate indicator (such as blower pressure, furnace temperature, gas strength, blower speed, number of sulfur guns operating, etc.) can be documented, tested and validated, the Department will accept this in lieu of directly documenting of the suitable list of surrogate parameters to demonstrate and document the reduced operating rate on a plant-by-plant basis. Documentation that the plant is conducting start-up at the reduced rate is the responsibility of the owner or operator.
3. Sulfuric acid plants are authorized to emit excess emissions from start-up for a period of three consecutive hours provided best operational practices, in accordance with this agreement, to minimize emissions are followed. No plant shall be operated (with sulfur as fuel) out of compliance for more than three consecutive hours. Thereafter, the plant shall be shut down (cease burning sulfur) if, as indicated by the continuous emission monitoring system, the plant is not in compliance within three hours of startup. Restart may occur as soon as practicable following any needed repairs or adjustments, provided the corrective action is taken and properly documented.
4. Cold Start-Up Procedures.
 - a. Converter.
 - (1) The inlet and outlet temperature at the first two masses of catalyst shall be sufficiently high to provide immediate ignition when SO₂ enters the masses. In no event shall the inlet temperature to the first mass be less than 800°F or the outlet temperature to the first two masses be less than 700°F. These temperatures are the desired temperatures at the time the use of auxiliary fuel is terminated.
 - (2) The gas stream entering the converter shall contain SO₂ at a level less than normal and sufficiently low to promote catalytic conversion to SO₃.
 - b. Absorbing Towers.

The concentration, temperature and flow of circulating acid shall be as near to normal conditions as reasonably can be achieved. In no event shall the concentration be less than 96 percent H₂SO₄.
5. Warm Restart.
 - a. Converter

The inlet and outlet temperatures of the first two catalyst masses should be sufficiently high to ensure conversion. One of the following three conditions must be met:

 - (1) The first two catalyst masses inlet and outlet temperatures must be at a minimum of 700°F; or
 - (2) Two of the four inlet and outlet temperatures must be greater than or equal to 800°F; or

SECTION 4. APPENDIX D

BEST OPERATIONAL START-UP PRACTICES FOR SULFURIC ACID PLANTS

- (3) The inlet temperature of the first catalyst must be greater than or equal to 600°F and the outlet temperature greater than or equal to 800°F. Also, the inlet and outlet temperatures of the second catalyst must be greater than or equal to 700°F.

Failure to meet one of the above conditions requires use of cold start-up procedures.

To allow for technologies improvements or individual plant conditions, alternative conditions will be considered by the Department in appropriate cases.

b. Absorbing Towers.

The concentration, temperature and flow of circulating acid shall be as near to normal conditions as reasonably can be achieved. In no event shall the concentration be less than 96 percent H₂SO₄.

Harvey, Mary

From: Harvey, Mary
Sent: Thursday, November 29, 2007 4:15 PM
To: 'Thomas W. Fuchs, Mosaic Fertilizer, LLC'; 'Dave Turley, Mosaic Fertilizer, LLC'; 'Dave Buff, P.E., Golder Associates, Inc.'; Zhang-Torres; 'Katy Forney, EPA Region 4'; 'Jim Little, EPA Region 4'; 'Dee Morse, NPS'
Cc: Arif, Syed; Adams, Patty; Gibson, Victoria
Subject: MOSAIC FERTILIZER - NEW WALES PLANT - FACILITY id #1050059-055-AC-DRAFT
Attachments: 1050059.055.AC.D_pdf.zip

Tracking:	Recipient	Read
✓	Thomas W. Fuchs, Mosaic Fertilizer, LLC'	
✓	'Dave Turley, Mosaic Fertilizer, LLC'	
✓	'Dave Buff, P.E., Golder Associates, Inc.'	
✓	Zhang-Torres	Read: 11/30/2007 8:36 AM
✓	'Katy Forney, EPA Region 4'	
✓	'Jim Little, EPA Region 4'	
✓	'Dee Morse, NPS'	
✓	Arif, Syed	Read: 11/30/2007 8:01 AM
✓	Adams, Patty	Read: 11/29/2007 5:27 PM
	Gibson, Victoria	

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DEP, Bureau of Air Regulation

11/30/2007

Harvey, Mary

From: Dee_Morse@nps.gov
Sent: Thursday, November 29, 2007 4:44 PM
To: Harvey, Mary
Subject: MOSAIC FERTILIZER - NEW WALES PLANT - FACILITY id #1050059-055-AC-DRAFT

Return Receipt

Your document: MOSAIC FERTILIZER - NEW WALES PLANT - FACILITY id #1050059-055-AC-DRAFT

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From: Buff, Dave [DBuff@GOLDER.com]
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Harvey, Mary

From: Adams, Patty
To: Harvey, Mary
Sent: Thursday, November 29, 2007 5:27 PM
Subject: Read: MOSAIC FERTILIZER - NEW WALES PLANT - FACILITY id #1050059-055-AC-DRAFT

Your message

To: 'Thomas W. Fuchs, Mosaic Fertilizer, LLC'; 'Dave Turley, Mosaic Fertilizer, LLC'; 'Dave Buff, P.E., Golder Associates, Inc.'; Zhang-Torres; 'Katy Forney, EPA Region 4'; 'Jim Little, EPA Region 4'; 'Dee Morse, NPS'
Cc: Arif, Syed; Adams, Patty; Gibson, Victoria
Subject: MOSAIC FERTILIZER - NEW WALES PLANT - FACILITY id #1050059-055-AC-DRAFT
Sent: 11/29/2007 4:15 PM

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Harvey, Mary

From: Adams, Patty
To: Harvey, Mary
Sent: Thursday, November 29, 2007 5:28 PM
Subject: Read: FW: MOSAIC FERTILIZER - NEW WALES PLANT - FACILITY id #1050059-055-AC-DRAFT

Your message

To: 'Katy Forney, EPA Region 4'; 'little.james@epamail.epa.gov'
Cc: Adams, Patty
Subject: FW: MOSAIC FERTILIZER - NEW WALES PLANT - FACILITY id #1050059-055-AC-DRAFT
Sent: 11/29/2007 4:17 PM

was read on 11/29/2007 5:28 PM.

Harvey, Mary

From: Fuchs, Tom W - New Wales [Tom.Fuchs@mosaicco.com]
Sent: Friday, November 30, 2007 6:44 AM
To: undisclosed-recipients
Subject: Read: MOSAIC FERTILIZER - NEW WALES PLANT - FACILITY id #1050059-055-AC-DRAFT

Attachments: ATT556330.txt



ATT556330.txt
(303 B)

Your message

To: Fuchs, Tom W - New Wales; Turley, Charles D - New Wales; Dave Buff, P.E., Golder Associates, Inc.; Zhang-Torres; Katy Forney, EPA Region 4; Jim Little, EPA Region 4; Dee Morse, NPS
Cc: Arif, Syed; Adams, Patty; Gibson, Victoria
Subject: MOSAIC FERTILIZER - NEW WALES PLANT - FACILITY id #1050059-055-AC-DRAFT
Sent: Thu, 29 Nov 2007 16:15:08 -0500

was read on Fri, 30 Nov 2007 06:43:43 -0500

Harvey, Mary

From: Fuchs, Tom W - New Wales [Tom.Fuchs@mosaicco.com]
Sent: Friday, November 30, 2007 6:44 AM
To: Harvey, Mary
Subject: RE: MOSAIC FERTILIZER - NEW WALES PLANT - FACILITY id #1050059-055-AC-DRAFT

From: Harvey, Mary [mailto:Mary.Harvey@dep.state.fl.us]
Sent: Thursday, November 29, 2007 4:15 PM
To: Fuchs, Tom W - New Wales; Turley, Charles D - New Wales; Dave Buff, P.E., Golder Associates, Inc.; Zhang-Torres; Katy Forney, EPA Region 4; Jim Little, EPA Region 4; Dee Morse, NPS
Cc: Arif, Syed; Adams, Patty; Gibson, Victoria
Subject: MOSAIC FERTILIZER - NEW WALES PLANT - FACILITY id #1050059-055-AC-DRAFT

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The document(s) may require immediate action within a specified time frame. Please open and review the document(s) as soon as possible.

The document is in Adobe Portable Document Format (pdf). Adobe Acrobat Reader can be downloaded for free at the following internet site:
<http://www.adobe.com/products/acrobat/readstep.html>.

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DEP, Bureau of Air Regulation

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11/30/2007

Harvey, Mary

From: Turley, Charles D - New Wales [David.Turley@mosaicco.com]
Sent: Friday, November 30, 2007 8:57 AM
To: undisclosed-recipients
Subject: Read: MOSAIC FERTILIZER - NEW WALES PLANT - FACILITY id #1050059-055-AC-DRAFT

Attachments: ATT563932.txt



ATT563932.txt
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Your message

To: Fuchs, Tom W - New Wales; Turley, Charles D - New Wales; Dave Buff, P.E., Golder Associates, Inc.; Zhang-Torres; Katy Forney, EPA Region 4; Jim Little, EPA Region 4; Dee Morse, NPS
Cc: Arif, Syed; Adams, Patty; Gibson, Victoria
Subject: MOSAIC FERTILIZER - NEW WALES PLANT - FACILITY id #1050059-055-AC-DRAFT
Sent: Thu, 29 Nov 2007 16:15:08 -0500

was read on Thu, 29 Nov 2007 16:27:41 -0500

Harvey, Mary

From: Zhang-Torres
To: Harvey, Mary
Sent: Friday, November 30, 2007 8:37 AM
Subject: Read: MOSAIC FERTILIZER - NEW WALES PLANT - FACILITY id #1050059-055-AC-DRAFT

Your message

To: 'Thomas W. Fuchs, Mosaic Fertilizer, LLC'; 'Dave Turley, Mosaic Fertilizer, LLC'; 'Dave Buff, P.E., Golder Associates, Inc.'; Zhang-Torres; 'Katy Forney, EPA Region 4'; 'Jim Little, EPA Region 4'; 'Dee Morse, NPS'
Cc: Arif, Syed; Adams, Patty; Gibson, Victoria
Subject: MOSAIC FERTILIZER - NEW WALES PLANT - FACILITY id #1050059-055-AC-DRAFT
Sent: 11/29/2007 4:15 PM

was read on 11/30/2007 8:36 AM.

Harvey, Mary

From: Arif, Syed
To: Harvey, Mary
Sent: Friday, November 30, 2007 8:01 AM
Subject: Read: MOSAIC FERTILIZER - NEW WALES PLANT - FACILITY id #1050059-055-AC-DRAFT

Your message

To: 'Thomas W. Fuchs, Mosaic Fertilizer, LLC'; 'Dave Turley, Mosaic Fertilizer, LLC'; 'Dave Buff, P.E., Golder Associates, Inc.'; Zhang-Torres; 'Katy Forney, EPA Region 4'; 'Jim Little, EPA Region 4'; 'Dee Morse, NPS'
Cc: Arif, Syed; Adams, Patty; Gibson, Victoria
Subject: MOSAIC FERTILIZER - NEW WALES PLANT - FACILITY id #1050059-055-AC-DRAFT
Sent: 11/29/2007 4:15 PM

was read on 11/30/2007 8:01 AM.

Harvey, Mary

From: Forney.Kathleen@epamail.epa.gov
Sent: Thursday, December 06, 2007 5:27 PM
To: Harvey, Mary
Subject: Re: FW: MOSAIC FERTILIZER - NEW WALES PLANT - FACILITY id #1050059-055-AC-DRAFT

thanks

Katy R. Forney
Air Permits Section
EPA - Region 4
61 Forsyth St., SW
Atlanta, GA 30024

Phone: 404-562-9130
Fax: 404-562-9019

"Harvey, Mary"
<Mary.Harvey@dep
.state.fl.us>

11/29/2007 04:17
PM

To
Kathleen Forney/R4/USEPA/US@EPA,
James Little/R4/USEPA/US@EPA

cc

"Adams, Patty"
<Patty.Adams@dep.state.fl.us>
Subject

FW: MOSAIC FERTILIZER - NEW WALES
PLANT - FACILITY id
#1050059-055-AC-DRAFT

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From: Harvey, Mary

Sent: Thursday, November 29, 2007 4:15 PM

To: 'Thomas W. Fuchs, Mosaic Fertilizer, LLC'; 'Dave Turley, Mosaic Fertilizer, LLC'; 'Dave Buff, P.E., Golder Associates, Inc.'; Zhang-Torres; 'Katy Forney, EPA Region 4'; 'Jim Little, EPA Region 4'; 'Dee Morse, NPS'

Cc: Arif, Syed; Adams, Patty; Gibson, Victoria

Subject: MOSAIC FERTILIZER - NEW WALES PLANT - FACILITY id #1050059-055-AC-DRAFT