Florida Department of Environmental Protection
Southwest District Office
13051 North Telecom Parkway
Temple Terrace, Florida 33637-0926

Rick Scott
Governor

Jennifer Carroll
Lt. Governor

Herschel T. Vinyard Jr.
Secretary

FINAL PERMIT

PERMITTEE

CF Industries, Inc.
P.O. Drawer L
Plant City, Florida 33564

Authorized Representative:
Mr. Herschel E. Morris, Vice-President Phosphate Operations & General Manager

Air Permit No. 0570005-047-AC
Permit Expires: 12/31/2012
Site Name : Plant City Phosphate Complex
Minor Air Construction Permit
Project Name: SAP Acid Coolers Maintenance and Replacement

This is the final air construction permit for CF Industries, Inc. to replace acid coolers in the facility's four sulfuric acid plants with spare coolers, as needed. The proposed work will be conducted at the Plant City Phosphate Complex (Standard Industrial Classification No. 2874). The facility is located in Hillsborough County at 10608 Paul Buchman Highway, Plant City, Florida. The UTM coordinates are Zone 17, 388.0 km East, and 3116.0 km North. As noted in the Final Determination provided with this final permit, no changes or only minor changes and clarifications were made to the draft permit.

This final permit is organized by the following sections:

Section 1. General Information

Section 2. Administrative Requirements and Facility-wide Specific Conditions

Section 3. Emissions Unit Specific Conditions

Section 4. Appendices

Due to the technical nature of the project, the permit contains numerous acronyms and abbreviations, which are defined in Appendix A of Section 4 of this permit.

This air pollution 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.). The permittee is authorized to conduct the proposed work in accordance with the conditions of this permit. This project is subject to the general preconstruction review requirements in Rule 62-212.300, F.A.C. and is not subject to the preconstruction review requirements for major stationary sources in Rule 62-212.400, F.A.C. for the Prevention of Significant Deterioration (PSD) of Air Quality.

Upon issuance of this final permit, any party to this order has the right to seek judicial review of it under Section 120.68 of the Florida Statutes by filing a notice of appeal under Rule 9.110 of the Florida Rules of Appellate Procedure with the clerk of the Department of Environmental

Protection in the Office of General Counsel (Mail Station #35, 3900 Commonwealth Boulevard, Tallahassee, Florida, 32399-3000) and by filing a copy of the notice of appeal accompanied by the applicable filing fees with the appropriate District Court of Appeal. The notice must be filed within 30 days after this order is filed with the clerk of the Department.

Executed in Hillsborough County, Florida

_____ _____

Robert C. Wong Effective Date
District Air Program Administrator
Southwest District

CERTIFICATE OF SERVICE

The undersigned duly designated deputy agency clerk hereby certifies that this Final Air Permit package (including the Final Determination, the Final Permit and the Appendices) was sent by electronic mail (or a link to these documents made available electronically on a publicly accessible server) with received receipt requested before the close of business on _____ to the persons listed below.

Mr. Herschel E. Morris, CF Industries, Inc. (hmorris@cfindustries.com)
Mr. Ronald L. Brunk, CF Industries, Inc. (rbrunk@cfindustries.com)
Mr. John B. Koogler, P.E., Koogler and Associates, Inc. (jkoogler@kooglerassociates.com)
Mr. Pradeep Raval, Koogler and Associates, Inc. (praval@kooglerassociates.com)
Ms. Diana Lee, EPC of Hillsborough County (Lee@epchc.org)

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.

_____ _____

(Clerk) (Date)

FACILITY AND PROJECT DESCRIPTION

Existing Facility

The existing facility consists of the following emissions units.

Facility ID No. 0570005	
ID No.	Emission Unit Description
001	Johnson Scotch Marine Type Boiler
002	"A" Sulfuric Acid Plant
003	"B" Sulfuric Acid Plant
004	"A" Phosphoric Acid Plant
007	"C" Sulfuric Acid Plant
008	"D" Sulfuric Acid Plant
009	"B" Phosphoric Acid Plant
010	"A" DAP/MAP Plant
011	"Z" DAP/MAP Plant
012	"X" DAP/MAP Plant
013	"Y" DAP/MAP Plant
014	"A & B" Storage Buildings
015, 018, 019, 020	"A & B" Storage, Sizing and Shipping
022, 023, 024, 033	Molten Sulfur Storage and Handling
032	Phosphoric Acid Cleanup Unit (PACU)
100	Phosphogypsum Stack
102	Emergency Diesel Engines (Existing stationary RICE)
099	Unregulated Facility Fugitive Emissions

Project Description and Affected Emission Units

This project authorizes the permittee to replace acid coolers in the facility's four sulfuric acid plants with spare acid coolers, as needed. This project is not expected to affect the performance of the sulfuric acid plants or result in increased emissions from these plants.

This project also authorizes the following construction modifications for the "B" Sulfuric Acid Plant's SO_2 Stripper:

(1) The installation of a larger carryover return from the SO_2 Stripper to reduce the operating pressure.

(2) An increase in the SO_2 Stripper blower capacity to maintain adequate gas flow.

(3) The replacement of the SO_2 Stripper mist eliminator, other than like-kind, to maintain proper mist control.

(4) The installation of a larger diameter SO_2 stripper tower, if needed, to reduce operating pressure.

This project will modify the following emissions units.

Facility ID No. 0570005	
ID No.	Emission Unit Description
002	"A" Sulfuric Acid Plant
003	"B" Sulfuric Acid Plant
007	"C" Sulfuric Acid Plant
008	"D" Sulfuric Acid Plant

NOTE: *Please reference the Permit No., Facility ID, and Emission Unit ID in all correspondence, test report submittals, applications, etc.*

FACILITY REGULATORY CLASSIFICATION

- The facility is a major source of hazardous air pollutants (HAPs).
- The facility has no units subject to the acid rain provisions of the Clean Air Act (CAA).
- 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 in accordance with Rule 62-212.400(PSD), F.A.C.

PERMIT HISTORY/AFFECTED PERMITS

Modifies Permit No. 0570005-041-AV

SECTION 2. ADMINISTRATIVE REQUIREMENTS AND FACILITY-WIDE SPECIFIC CONDITIONS (FINAL)

1. Permitting Authority: The permitting authority for this project is the Florida Department of Environmental Protection (Department), Southwest District's Air Resource Management Section. The Southwest District's mailing address and phone number is:

   Florida Department of Environmental Protection
   Southwest District Office
   Air Resource Management Section
   13051 North Telecom Parkway
   Temple Terrace, Florida 33637-0926
   Telephone: 813-632-7600

   All documents related to applications for permits shall be submitted to the above address.

2. Compliance Authority: All documents related to compliance activities such as reports, tests, and notifications shall be submitted to the Environmental Protection Commission of Hillsborough County (EPC). The mailing address and phone number of the EPC is:

   Environmental Protection Commission of Hillsborough County
   Air Management Division
   3629 Queen Palm Drive
   Tampa, Florida 33619
   Telephone: 813-627-2600

3. Appendices: The following Appendices are attached as part of this permit:
   a. Appendix A. Citation Formats and Glossary of Common Terms;
   b. Appendix B. General Conditions;
   c. Appendix C. Common Conditions; and
   d. Appendix D. Common Testing Requirements.

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 all applicable provisions of: Chapter 403, F.S.; and Chapters 62-4, 62-204, 62-210, 62-212, 62-213, 62-296 and 62-297, F.A.C. Issuance of this permit does not relieve the permittee from compliance with any applicable federal, state, or local permitting or regulations.

5. New or Additional Conditions: For good cause shown and after notice and an administrative hearing, if requested, the Department may require the permittee to conform to new or additional conditions. The Department shall allow the permittee a reasonable time to conform to the new or additional conditions, and on application of the permittee, the Department may grant additional time.
   [Rule 62-4.080, F.A.C.]

6. Modifications: Unless otherwise exempt by rule, the permittee shall not initiate any construction, reconstruction, or modification at the facility and shall not install/modify any pollution control device at the facility without obtaining prior authorization from the Department. Modification is defined as: Any physical change or changes in the method of operations or addition to a facility that would result in an increase in the actual emissions of any air pollutant subject to air regulations, including any not previously emitted, from any emission unit or facility.

[Rules 62-210.200 - Definition of "Modification" and 62-210.300(1)(a), F.A.C.]

7. Source Obligation:

   a. At such time that a particular source or modification becomes a major stationary source or major modification (as these terms were defined at the time the source obtained the enforceable limitation) solely by virtue of a relaxation in any enforceable limitation which was established after August 7, 1980, on the capacity of the source or modification otherwise to emit a pollutant, such as a restriction on hours of operation, then the requirements of subsections 62-212.400(4) through (12), F.A.C., shall apply to the source or modification as though construction had not yet commenced on the source or modification.

   b. At such time that a particular source or modification becomes a major stationary source or major modification (as these terms were defined at the time the source obtained the enforceable limitation) solely by exceeding its projected actual emissions, then the requirements of subsections 62-212.400(4) through (12), F.A.C., shall apply to the source or modification as though construction had not yet commenced on the source or modification.

[Rule 62-212.400(12), F.A.C.]

8. Actual Emissions Reporting: This permit is based on an analysis that compared baseline actual emissions with projected actual emissions and avoided the requirements of subsection 62-212.400(4) through (12), F.A.C. for several pollutants. Therefore, pursuant to Rule 62-212.300(1)(e), F.A.C., the permittee is subject to the following monitoring, reporting and recordkeeping provisions.

   a. The permittee shall monitor the emissions of any PSD pollutant that the Department identifies could increase as a result of the construction or modification and that is emitted by any emissions unit that could be affected; and, using the most reliable information available, calculate and maintain a record of the annual emissions, in tons per year on a calendar year basis, for a period of 5 years following resumption of regular operations after the change. Emissions shall be computed in accordance with the provisions in Rule 62-210.370, F.A.C., which are provided in Appendix C of this permit.

   b. The permittee shall report to the Department within 60 days after the end of each calendar year during the 5-year period setting out the unit's annual emissions during the calendar year that preceded submission of the report. The report shall contain the following:

      1) The name, address and telephone number of the owner or operator of the major stationary source;

      2) The annual emissions as calculated pursuant to the provisions of 62-210.370, F.A.C., which are provided in Appendix C of this permit;

      3) If the emissions differ from the preconstruction projection, an explanation as to why there is a difference; and

      4) Any other information that the owner or operator wishes to include in the report.

   c. The information required to be documented and maintained pursuant to subparagraphs 62-212.300(1)(e)1 and 2, F.A.C., shall be submitted to the Department, which shall make it available for review to the general public.

For this project, the Department requires the annual reporting of actual Sulfuric Acid Mist (Acid Mist) and Sulfur Dioxide (SO_2) emissions for the following units: E.U. Nos. 002, 003, 007 and 008.

[Permit Application dated 10/17/2011; Rules 62-212.300(1)(e) and 62-210.370, F.A.C.]

9. Annual Operating Report: On or before **April 1** of each year, the permittee shall submit a completed DEP Form 62-210.900(5), "Annual Operating Report for Air Pollutant Emitting Facility" (AOR) for the preceding calendar year. The report may be submitted electronically in accordance with the instructions received with the AOR package sent by the Department, or a hardcopy may be sent to the Compliance Authority.
[Rule 62-210.370(3), F.A.C.]

10. Application for Title V Air Operation Permit: This construction permit is being processed concurrently with a Title V revision application (0570005-048-AV), which incorporates the changes made in this construction permit.

A. EU Nos. 002, 003, 007 AND 008 - "A", "B", "C" and "D" Sulfuric Acid Plants

This section of the permit addresses the following emissions units.

ID No.	Emission Unit Description
002	"A" Sulfuric Acid Plant
003	"B" Sulfuric Acid Plant
007	"C" Sulfuric Acid Plant
008	"D" Sulfuric Acid Plant

This subsection applies to the four sulfuric acid plants (SAP), as described below:

Sulfuric Acid Plants "A" and "B"

The "A" Sulfuric Acid Plant has a maximum permitted production rate of 1,300 tons per day of 100% sulfuric acid. The "B" Sulfuric Acid Plant has a maximum permitted production rate of 1,600 tons per day of 100% sulfuric acid. In the process, molten sulfur is combusted (oxidized) with dry air in the sulfur furnace. The resulting sulfur dioxide gas is catalytically converted (further oxidized) to sulfur trioxide in a converter tower. Specifically, the converter tower is a 4-bed tower in the "A" Sulfuric Acid Plant and a 5-bed tower in the "B" Sulfuric Acid Plant. Sulfur trioxide is then absorbed in an approximately 98% H_2SO_4 stream to form a more concentrated acid in a single stage absorption tower (final stage of production). In the "A" Sulfuric Acid Plant, the heat generated by the chemical reactions in the sulfur furnace and the 4-bed converter tower is recovered to operate two boilers and an economizer. In the "B" Sulfuric Acid Plant, the heat generated by the chemical reactions in the sulfur furnace and the 5-bed converter tower is recovered to operate two boilers, two economizers and two superheaters. (The boilers, economizers and superheaters are not sources of air pollution.)

Sulfur dioxide and sulfuric acid mist (acid mist) emissions at each plant are controlled by a two-stage SO_2 scrubber (with ammonia as the scrubbing liquid) and a high-efficiency mist eliminator and exhausted through an approximately 110-foot stack.

A Sulfuric Acid Mist Emissions Prevention Plan (Plan) for the "A" Sulfuric Acid Plant is included as "Appendix SAM" as required in paragraph 6 of the Consent Order (EPC Case #: 00-0126CCG005) between the Environmental Protection Commission of Hillsborough County (EPC) and CF Industries, Inc. (Respondent).

The following acid cooler replacements are authorized for Sulfuric Acid Plants "A" and "B":

(1) SAP A - Dryer CIL Acid Cooler
(2) SAP B - Dryer CIL Acid Cooler
(3) SAP A - Sulfuric Acid Product Cooler
(4) SAP B - Sulfuric Acid Product Cooler
(5) SAP A - Absorber CIL Cooler
(6) SAP B - Absorber CIL Cooler

The primary purpose of each acid cooler is to maintain acid temperatures below levels that cause excessive corrosion to the process equipment. Due to corrosion and deterioration, periodic repair and replacement of these acid coolers will be necessary and is authorized by this permit. Additionally,

the temperature of the acid in the process will only affect the equilibrium vapor pressure of SO_3 of the gas in contact with the acid and therefore, only sulfuric acid mist (SAM) emissions could be affected.

Replacement of acid coolers (1) through (4) will not affect emissions and therefore are not subject to the monitoring, reporting and recordkeeping requirements of Rule 62-212.300(1)(e), F.A.C. In each plant, these acid coolers handle sulfuric acid streams that do not interact directly with the SO_2 converter, absorber tower and SO_2 scrubber.

Replacement of acid coolers (5) and (6) could affect emissions and therefore are subject to the monitoring, reporting and recordkeeping requirements of Rule 62-212.300(1)(e), F.A.C. In each plant, these acid coolers handle sulfuric acid streams that interact directly with the SO_2 converter, absorber tower and SO_2 scrubber. SAM and SO_2 emissions are present/generated/or controlled in the SO_2 converter, absorber tower and SO_2 scrubber.

The following SO_2 stripper construction modifications are authorized for Sulfuric Acid Plant "B ":

(1) The installation of a larger carryover return from the SO_2 Stripper to reduce operating pressure. The carryover return will be increased from approximately 30 to 36 inches in diameter.
(2) An increase in SO_2 Stripper blower capacity, to maintain adequate gas flow. The blower currently operates at approximately 6 psig and 1900 scfm. The proposed range will be approximately 9 psig and 2400 scfm.
(3) The replacement of the SO_2 Stripper mist eliminator, other than like-kind, to maintain proper mist control.
(4) The installation of a larger diameter SO_2 stripper tower, if needed, to reduce operating pressure. The SO_2 stripper tower will be increased from approximately 30 to 36 inches in diameter.

Sulfuric Acid Plants "C" and "D"

Each plant is a Monsanto Design, double absorption sulfuric acid plant, with a maximum design production rate of 2,962 tons per day of 100% sulfuric acid and permitted production rate of 2,600 tons per day of 100% sulfuric acid. At the plant, dry air and molten sulfur are ignited in a sulfur burner. The combustion gases, primarily sulfur dioxide (SO_2), are passed through a 3-stage catalytic converter where SO_2 is converted to sulfur trioxide (SO_3). The gases, now primarily SO_3, enter the interpass tower where the SO_3 is absorbed into a sulfuric acid solution. The remaining gases (a mixture of SO_2, SO_3 and other products) exit the interpass tower through a high-efficiency mist eliminator. The gas then enters the 4th stage of the catalytic converter where additional SO_2 is converted to SO_3. This gas enters the final tower where SO_3 is again absorbed into a sulfuric acid solution. The remaining gases exit through a high-efficiency mist eliminator to the atmosphere with the limits established by the Best Available Control Technology (BACT). The plant also incorporates a Waste Heat Boiler System for generating steam from the energy produced by the combustion of molten sulfur in air.

The permittee has completed the following modifications to the sulfuric acid plants "C" and "D" which were authorized in Construction Permit 0570005-026-AC/PSD-FL-339B: installed low pressure drop packing in final, drying and interpass absorption towers; modified the de-aerator feed tank pumps; modified the acid cooling system; upgraded the main blower turbine (increase horsepower); installed a new cooling tower cell; and increased sulfur throughput. Work is in progress for the following two items for each of "C" and "D" sulfuric acid plants and expected to be completed in 2013: (a) Install new boiler feed water pumps and motors; and, (b) Structural

improvements to several pieces of equipment to safely operate at the new blower discharge pressures.

The following acid cooler replacements are authorized for Sulfuric Acid Plants "C" and "D":

(1) SAP C - Dryer Acid Cooler
(2) SAP D - Dryer Acid Cooler
(3) SAP D – Product Acid Cooler
(4) SAP C – Product Acid Cooler
(5) SAP C – Trim Acid Cooler
(6) SAP D – Trim Acid Cooler
(7) SAP C - Interpass Acid Cooler
(8) SAP D - Interpass Acid Cooler
(9) SAP C - Final Acid Cooler
(10) SAP D - Final Acid Cooler

The primary purpose of each acid cooler is to maintain acid temperatures below levels that cause excessive corrosion to the process equipment. Due to corrosion and deterioration, periodic repair and replacement of these acid coolers will be necessary and is authorized by this permit. Additionally, the temperature of the acid in the process will only affect the equilibrium vapor pressure of SO_3 of the gas in contact with the acid and therefore, only sulfuric acid mist (SAM) emissions could be affected.

Replacement of acid coolers (1) through (6) will not affect emissions and therefore are not subject to the monitoring, reporting and recordkeeping requirements of Rule 62-212.300(1)(e), F.A.C. In each plant, these acid coolers handle sulfuric acid streams that do not interact directly with the SO_2 converter or absorber tower.

Replacement of acid coolers (7) through (10) could affect emissions and therefore are subject to the monitoring, reporting and recordkeeping requirements of Rule 62-212.300(1)(e), F.A.C. In each plant, these acid coolers handle sulfuric acid streams that interact directly with the SO_2 converter, absorber tower and SO_2 scrubber. SAM and SO_2 emissions are present/generated/or controlled in the SO_2 converter or absorber tower.

{Permitting Note: Based on a response included by the permittee in a Request for Additional Information Response letter dated January 23, 2012 and a follow up letter dated January 31,2012, the primary purpose the acid coolers is to maintain acid temperatures below levels that cause excessive corrosion to the process equipment. Consequently, the size of replacement acid coolers can vary somewhat and still maintain acid temperatures below the required threshold. Additionally, the temperature of the acid in the process will only affect the equilibrium vapor pressure of SO_3 of the gas in contact with the acid and therefore, only sulfuric acid mist (SAM) emissions could be affected.}

{Permitting notes: These emissions units are regulated under Rule 296.402., F.A.C., Emission Standards for Sulfuric Acid Plants; Rule 62-212.300, F.A.C., General Preconstruction Review Requirements; and Rule 62-212.400, F.A.C., Prevention of Significant Deterioration (PSD). Sulfuric Acid Plants "C" and "D," and the sulfuric acid mist emissions from Sulfuric Acid Plant "B" are subject to NSPS standards 40 CFR 60 Subpart A and Subpart H. Sulfuric Acid Plant "A" is classified as existing facilities under NSPS rules. Sulfuric Acid Plant "B" (for emissions other than sulfuric acid mist) is also classified as existing facilities under NSPS rules.}

A. EU Nos. 002, 003, 007 AND 008 - "A", "B", "C" and "D" Sulfuric Acid Plants

AUTHORIZED WORK

A.1. Acid Cooler Replacement. This permittee is authorized to replace the following acid coolers on a temporary or on a long term/permanent basis:

E.U. No.	Plant Name	Acid Cooler Descriptions
002	"A" SAP	- Dryer CIL Acid Cooler - Sulfuric Acid Product Cooler
003	"B" SAP	- Dryer CIL Acid Cooler - Sulfuric Acid Product Cooler
007	"C" SAP	- Dryer Acid Cooler - Product Acid Cooler - Trim Acid Cooler
008	"D" SAP	- Dryer Acid Cooler - Product Acid Cooler - Trim Acid Cooler

{Permitting Note: Replacement of the acid coolers listed above will not affect emissions. In each plant, these acid coolers handle sulfuric acid streams that do not interact directly with the SO_2 converter, absorber tower and SO_2 scrubber. Sulfuric Acid Mist (SAM) and SO_2 emissions are present/ generated/or controlled in the SO_2 converter, absorber tower and SO_2 scrubber}
[Permit Application dated 10/17/2011]

A.2. Acid Cooler Replacement (with 5 year monitoring). This permittee is authorized to replace the following acid coolers on a temporary basis or on a long term/permanent basis. The 5 year monitoring, reporting and recordkeeping requirements of Rule 62-212.300(1)(e), F.A.C. will become applicable with each cooler replacement:

E.U. No.	Plant Name	Acid Cooler Descriptions
002	"A" SAP	- Absorber CIL Cooler
003	"B" SAP	- Absorber CIL Cooler
007	"C" SAP	- Interpass Acid Cooler - Final Acid Cooler
008	"D" SAP	- Interpass Acid Cooler - Final Acid Cooler

{Permitting Note: Replacement of the acid coolers listed above could affect emissions. In each plant, these acid coolers handle sulfuric acid streams that interact directly with the SO_2 converter, absorber tower and SO_2 scrubber. Sulfuric Acid Mist (SAM) and SO_2 emissions are present/generated/or controlled in the SO_2 converter, absorber tower and SO_2 scrubber}
[Permit Application dated 10/17/2011]

A.3. The following construction modifications of the SO_2 Stripper in Sulfuric Acid Plant "B "are authorized:

a. The installation of a larger carryover return from the SO_2 Stripper. The carryover return will be increased from 30 to 36 inches in diameter.

b. An increase in the SO_2 Stripper blower capacity from approximately 6 psig and 1900 scfm to approximately 9 psig and 2400 scfm.

c. The replacement of the SO_2 Stripper mist eliminator.

d. The installation of a larger diameter SO_2 stripper tower. If needed, the stripper tower will be increased from 30 to 36 inches in diameter.

[Permit Application dated 10/17/2011 and Applicant letter dated 1/25/2012]

PERFORMANCE RESTRICTIONS

A.4. Federal Regulatory Requirements: Sulfuric Acid Plants "B", "C" and "D" (E.U. Nos. 003, 007 & 008) are subject to the applicable requirements contained in 40 CFR 60 Subpart A - General Provisions and 40 CFR 60 Subpart H – Standards of Performance for Sulfuric Acid Plants.

{Permitting Note: Sulfuric Acid Plant "B" is subject to 40 CFR 60, Subpart H for sulfuric acid mist only. Please see "Appendix NSPS - 40 CFR 60 Subpart H".}

[Rule 62-204.800(8), F.A.C. and 40 CFR 60, Subparts A and H]

A.5. Permitted Capacity: The maximum allowable production rates are as follows:

E.U. No.	Plant Name	Maximum Production Rate
002	"A" SAP	1,300 tpd of 100% H_2SO_4
003	"B" SAP	1,600 tpd of 100% H_2SO_4
007	"C" SAP	2,600 tpd of 100% H_2SO_4
008	"D" SAP	2,600 tpd of 100% H_2SO_4

[Construction Permit 0570005-034-AC; Rules 62-296.340(5)(c) (escape BART), 62-4.160(2) and 62-210.200 (Definitions – Potential to Emit (PTE)), F.A.C.]

A.6. Hours of Operation: The hours of operation are not limited (8760 hours per year).
[Rules 62-4.070(3) and 62-210.200(PTE), F.A.C.]

EMISSIONS STANDARDS

A.7. Visible Emissions Standard: Visible emissions shall not exceed 10% opacity (except during start-up, shutdown, or malfunction, pursuant to Rule 62-210.700, F.A.C.).
[E.U. No. 002: Rule 62-296.402(1)(b)1, F.A.C.]
[E.U. No. 003, 007 & 008: Rules 62-296.402(1)(b)1. and 62-204.800(8)(b)11., F.A.C.; 40 CFR 60.83(a)(2)]

A.8. SO_2 Emissions Standard: The maximum allowable emission rates for SO2 are as follows:

Sulfur Dioxide (SO_2)			
E.U. No.	**Plant Name**	**Rolling/ block average based on CEMS data***	**Consecutive 12-month rolling total based on CEMS data***
002	"A" SAP	**3-hour rolling average:** 5.6 lbs/ton of 100% H_2SO_4 Produced ; {Equivalent to 303.3 lb/hr at 1,300 tpd of 100% H_2SO_4 } **24-hour (daily) block average:** 75.8 lb/hr; {Equivalent to 1.4 lbs/ton of 100% H_2SO_4 Produced at 1,300 tpd}	332 tons/yr
003	"B" SAP	**3-hour rolling average:** 3.5 lbs/ton of 100% H_2SO_4 Produced; {Equivalent to 233.3 lb/hr at 1,600 tpd of 100% H_2SO_4 } **24-hour (daily) block average:** 93.3 lb/hr; {Equivalent to 1.4 lbs/ton of 100% H_2SO_4 Produced at 1,600 tpd}	409 tons/yr
007	"C" SAP	**3-hour rolling average:** 3.25 lbs/ton of 100% H_2SO_4 Produced; {Equivalent to 352 lb/hr at 2,600 tpd of 100% H_2SO_4 } **24-hour (daily) block average:** 303.3 lb/hr; {Equivalent to 2.8 lbs/ton of 100% H_2SO_4 Produced at 2,600 tpd}	1,329 tons/yr
008	"D" SAP	**3-hour rolling average:** 3.25 lbs/ton of 100% H_2SO_4 Produced; { Equivalent to 352 lb/hr at 2,600 tpd of 100% H_2SO_4 } **24-hour (daily) block average:** 303.3 lb/hr; {Equivalent to 2.8 lbs/ton of 100% H_2SO_4 Produced at 2,600 tpd}	1,329 tons/yr

[Construction Permits 0570005-020-AC, 0570005-021-AC/PSD-FL, 0570005-026-AC/PSD-FL-339B and 0570005-034-AC; Rules 62-296.402, 62-4.340(5)(c) (escape BART), 62-4.070(1)&(2) and 62-213.440(1), F.A.C.; 40 CFR 60, Subpart H]

{Permitting notes:

(1) *24-hour (daily) block CEMS average limits were established based on the emissions rate averaging period of 24-hour (daily) used in dispersion modeling. Annual stack testing for SO2 emissions is not required for compliance demonstration.*

(2) *The sulfur dioxide emissions standards of Rules 62-296.402, F.A.C. and 40 CFR 60, Subpart H are applicable; however, these standards have been superseded by more stringent requirements established in construction permits. The 3-hour standard for E.U. No. 002 was established in Construction Permits 0570005-020-AC and 0570005-021-AC/PSD-FL, the 3-hour standard for E.U. No. 003 was established in Construction Permit 0570005-021-AC/PSD-FL, and the 3-hour standards for E.U. No. 007 & 008 were established in Construction Permit 0570005-026-AC/PSD-FL 339B.*

(3) *E.U. No. 002 has two SO2 24-hour averages. A 24-hour average of 75.8 lb/hr established was in Permit 0570005-034-AC and a 24-hour average of 250 lb/hr established in 0570005-021-AC/PSD-FL. The more stringent 24-hour average of 75.8 lb/hr is listed as the SO2 standard in the table above.}*

A.9. SAM Emissions Standard: The maximum allowable emission rates for SAM are as follows:

Sulfuric Acid Mist (SAM)			
E.U. No.	**Plant Name**	**Allowable Emissions Rate**	**Annual Allowable Emissions Rate**
002	"A" SAP	0.3 lb/ton of 100% H_2SO_4 Produced; {1.43 lbs/hr (each hour)}	6.3 tons/yr
003	"B" SAP	0.075 lb/ton of 100% H_2SO_4 Produced; {1.8 lbs/hr (each hour)}	7.9 tons/yr
007	"C" SAP	0.093 lb/ton of 100% H_2SO_4 Produced; {10.1 lbs/hr}	44.2 tons/yr
008	"D" SAP	0.093 lb/ton of 100% H_2SO_4 Produced; {10.1 lbs/hr}	44.2 tons/yr

[Construction Permits 0570005-020-AC, 0570005-026-AC/PSD-FL-339B and 0570005-034-AC; Rules 62-296.402, 62-4.340(5)(c) (escape BART), 62-4.070(1)&(2) and 62-213.440(1), F.A.C.; 40 CFR 60, Subpart H]

{Permitting notes: The SAM emissions standards of Rules 62-296.402, F.A.C. and 40 CFR 60, Subpart H are applicable; however, these standards have been superseded by more stringent requirements established in construction permits. The emissions standard for E.U. No. 002 was established in

Construction Permits 0570005-020-AC and 0570005-034-AC. The emissions standard for E.U. No. 003 was established in Construction Permit 0570005-034-AC. Two emissions standards for E.U. No. 007 & 008 were established in Construction Permits 0570005-026-AC/PSD-FL 339B (11.4 lbs/hr) and 0570005-034-AC(10.1 lbs/hr) and the more stringent emissions standard (10.1 lb/hr) is listed as the SAM emissions standard in the table above. }

A.10. NOx Emissions Standard: The maximum allowable emission rates for NOx are as follows:

Nitrogen Oxides (NOx)			
E.U. No.	**Plant Name**	**Allowable Emissions Rate**	**Annual Allowable Emissions Rate**
002	"A" SAP	0.12 lb/ton of 100% H_2SO_4 Produced; {6.5 lb/hr}	28.5 tons/year
003	"B" SAP	0.12 lb/ton of 100% H_2SO_4 Produced; {8.0 lb/hr}	35.0 tons/year
007	"C" SAP	0.11 lb/ton of 100% H_2SO_4 Produced; {11.9 lb/hr}	52.1 tons/year
008	"D" SAP	0.11 lb/ton of 100% H_2SO_4 Produced; {11.9 lb/hr}	52.1 tons/year

[Construction Permit 0570005-021-AC/PSD-FL-355, 0570005-026-AC/PSD-FL-339B and 0570005-034-AC; Rules 62-4.340(5)(c) (escape BART), 62-4.070(1)&(2) and 62-213.440(1), F.A.C.]

{Permitting notes: The NOx emissions standard for E.U. No. 002 was established in Construction Permit 0570005-034-AC. The emissions standard for E.U. No. 003 was established in Construction Permits 0570005-021-AC/PSD-FL-355 and 0570005-034-AC. Two standards for E.U. No. 007 & 008 were established in Construction Permits 0570005-026-AC/PSD-FL 339B (13.6 lb/hr) and 0570005-034-AC(11.9 lbs/hr) and the more stringent NOx emissions standard (11.9 lb/hr) is listed as the NOx emissions standard in the table above. }

A.11. This permit acknowledges that leaks of sulfur dioxide and sulfur trioxide or other fugitive process emissions that do not pass through a stack may occur as part of routine operations. Best operation practices to minimize these emissions shall be adhered to and shall include regular inspections and the prompt repair or correction of any leaks or other fugitive emissions.
[Construction Permits AC29-200648, AC29-186931/PSD-FL-155; 0570005-026-AC/PSD-FL-339B, 0570005-020-AC and 0570005-021-AC/PSD-FL-355]

A.12. The 4th converter pass of the "C" and "D" sulfuric acid plants contains approximately 165,000 liters cesium promoted vanadium catalyst. A change to non-cesium promoted catalyst or switch to another SO_2 control strategy shall not occur without the Department's review and

approval and shall require submittal of a permit modification request to revise the Best Available Control Technology Determination.
[Construction Permits 0570005-019-AC/PSD-FL-339, 0570005-026-AC/PSD-FL 339B]

TESTING REQUIREMENTS

A.13. Initial Compliance Tests: After completion of the construction modifications specified in Specific Condition No. A.2., the Sulfuric Acid Plant "B" shall be tested to demonstrate compliance with the emissions standards for Sulfuric Acid Mist (Acid Mist), Nitrogen Oxide (NOx) and visible emissions (VE). The initial tests shall be conducted no later than 90 days after initial operation of the unit following the completion of the "B" Sulfuric Acid Plant's SO_2 Stripper construction modifications.
[Rules 62-4.070(3) and 62-297.310(7)(a)1, F.A.C.]

A.14. Acid Cooler Replacement Compliance Tests: Each time one of the acid coolers listed in Specific Condition No. A.2. is replaced; the affected sulfuric acid plants (i.e., SAPs "A", "B", "C", or "D") shall be tested to demonstrate compliance with the emissions standards for Sulfuric Acid Mist (Acid Mist) and visible emissions (VE). The tests shall be conducted no later than 90 days after initial operation of the unit following the replacement of acid cooler.
[Rules 62-4.070(3) and 62-297.310(7)(a)1, F.A.C.]

A.15. Annual Compliance Tests: During each federal fiscal year (October 1st to September 30th), the sulfuric acid plants (SAPs "A", "B", "C", and "D") shall be tested to demonstrate compliance with the emissions standards for Sulfuric Acid Mist (Acid Mist), Nitrogen Oxide (NOx) and Visible emissions (VE). Testing procedures shall be consistent with the requirements of Chapter 62-297, F.A.C.
[Rules 62-296.402 and 62-297.310(8)(b), F.A.C.]

A.16. Test Requirements: Tests shall be conducted in accordance with the applicable requirements specified in Appendix D (Common Testing Requirements) of this permit.
[Rule 62-297.310, F.A.C.]

A.17. Test Method(s): Required tests shall be performed in accordance with the following reference method(s).

Method(s)	Description of Method and Comments
1-4	Traverse Points, Velocity and Flow Rate, Gas Analysis, and Moisture Content,
7E	Determination of Nitrogen Oxide Emissions from Stationary Sources
8	Determination of Sulfuric Acid Mist and Sulfur Dioxide Emissions from Stationary Sources
9	Visual Determination of the Opacity of Emissions from Stationary Sources

The above method(s) are described in Appendix A of 40 CFR 60 and are adopted by reference in Rule 62-204.800, F.A.C. No other method(s) may be used unless prior written approval is received from the Department.

[Rules 62-296.402(3), 62-297.310(4)(a)2. and 62-297.401, F.A.C., Construction Permit 0570005-026-AC/PSD-FL 339B]

NOTIFICATION REQUIREMENTS

A.18. Test Notification: The permittee shall notify the Compliance Authority in writing at least 15 days prior to any required tests. The notification must include the following information: the date, time, and location of each test; the name and telephone number of the facility's contact person who will be responsible for coordinating the test; and the name, company, and the telephone number of the person conducting the test.

{*Permitting Note: The notification should also include the relevant emission unit ID No(s)., test method(s) to be used, and pollutants to be tested.*}

[Rules 62-4.070(3) and 62-297.310(7)(a)9., F.A.C.]

A.19. Notification of Operation Commencement:

a. The permittee shall notify the Compliance Authority in writing of the date of commencing operation of Sulfuric Acid Plant "B" following the completion of the "B" Sulfuric Acid Plant's SO_2 Stripper construction modifications listed in Specific Condition No. A.3.; no later than fifteen (15) days after that date.
b. The permittee shall notify the Compliance Authority in writing of the date of commencing operation of Sulfuric Acid Plant "A", "B", "C" or "D" following the replacement of any acid coolers listed in Specific Condition No. A.2. no later than fifteen (15) days after that date. The notification shall include a copy of the "Acid Cooler Replacement Records" specified in Specific Condition A.20.

Commencing operation means setting into operation of any emissions unit for any purpose.
[Rule 62-4.070 and 62-210.200, F.A.C., (Definition of Commence Operation)]

{Permitting Note: Except for the changes specified in the conditions above, the emissions units covered in this section remain subject to the all other valid conditions contained in the current Title V permit.}

RECORDS AND REPORTS

A.20. Acid Cooler Replacement Records: The permittee shall maintain records listing the all acid cooler replacement for the acid coolers listed in Specific Condition No. A.2. The records should include the emissions unit number, the name of the acid cooler to be replaced, the date the replacement occurs, and general specifications for the old acid cooler and for the replacement acid cooler (i.e., heat transfer area, number of tubes/tube length, and shell diameter). The records shall be kept in a readily accessible location.
[Rule 62-4.070, F.A.C.]