

STATE OF FLORIDA  
DEPARTMENT OF ENVIRONMENTAL PROTECTION  
NOTICE OF FINAL PERMIT

In the Matter of an  
Application for Permit


Mr. E. M. Newberg  
IMC-Agrico Company  
3095 Highway 640  
P.O. Box 2000  
Mulberry, Florida 33860

DEP File No. 1050059-024-AC  
Permit No. PSD-FL-244  
Polk County

Enclosed is the FINAL Permit Number PSD-FL-244 to install additional equipment to increase the processing capacity of the Multifos Plant from 30 to 55 tons per hour at IMC-Agrico Company's New Wales facility located at 3095 Highway 640, Mulberry, Polk County. This permit is issued pursuant to Chapter 403, Florida Statutes and in accordance with Rules 62-212.400 and 410., F.A.C., - Prevention of Significant Deterioration and Best Available Control Technology.

Any party to this order (permit) has the right to seek judicial review of the permit pursuant to Section 120.68, F.S., by the filing of a Notice of Appeal pursuant to Rule 9.110, Florida Rules of Appellate Procedure, with the Clerk of the Department in the Legal Office; and by filing a copy of the Notice of Appeal accompanied by the applicable filing fees with the appropriate District Court of Appeal. The Notice of Appeal must be filed within 30 (thirty) days from the date this Notice is filed with the Clerk of the Department.

Executed in Tallahassee, Florida.

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

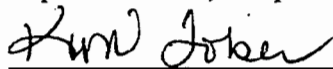
CERTIFICATE OF SERVICE

The undersigned duly designated deputy agency clerk hereby certifies that this NOTICE OF FINAL PERMIT (including the FINAL permit) was sent by certified mail (\*) and copies were mailed by U.S. Mail before the close of business on 9-11-98 to the person(s) listed:

Mr. E. M. Newberg, IMCA\*  
Mr. Brian Beals, EPA  
Mr. John Bunyak, NPS  
Mr. Bill Thomas, DEP

Clerk Stamp

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

  
(Clerk) 9-11-98  
(Date)

FINAL DETERMINATION  
IMC-AGRICO COMPANY  
MULTIFOS PLANT EXPANSION  
Permit No. 1050059-024-AC  
PSD-FL-244

An Intent to Issue Air Construction Permit to install additional equipment to increase the processing capacity of the applicant's Multifos Animal Feed Plant at its New Wales Phosphate Fertilizer facility in Mulberry, Polk County, Florida was distributed on July 24, 1998. The proposed permit provided for the installation of a third phosphate defluorination kiln and associated process equipment to increase the permitted processing capacity from 30 to 55 tons of material per hour. The Public Notice of Intent to Issue Air Construction Permit was published in the Lakeland Ledger on July 31, 1998. Copies of the draft construction permit and related documents were available for public inspection at the Department's offices in Tallahassee and Tampa and at the Polk County Public Works Department in Bartow. Comments were received from the applicant and the U.S. Fish & Wildlife Service (FWS), primarily concerning the issue of additional controls for the existing kilns.

Although the applicant differed with the Department's conclusions on the existing kilns, the FWS agreed that the plant should have undergone PSD and BACT applicability during prior permitting actions when the plant throughput was doubled from 15 to 30 tons per hour. Since the information needed to resolve several permitting issues did not surface until late in the permit processing schedule, the applicant agreed to an extension of the 90-day processing schedule so that details could be worked out for installing caustic scrubbing on the two existing kilns. Realizing that the implementation of a feasible retrofit modification of the two existing kiln scrubbers will require a reasonable period of time, the Department agreed that the applicant will have a period of one year to adjust and refine the scrubber retrofit system while maintaining a minimum flow of caustic solution to the scrubbers. This agreement resolves the issues concerning past permitting decisions on the multifos plant. Since the applicant has agreed to install BACT controls and a new stack for the third kiln, the continuous emissions monitoring and associated provisions of the preliminary proposed permit have been removed in the final permit.

**SENDER:**

- Complete items 1 and/or 2 for additional services.
- Complete items 3, 4a, and 4b.
- Print your name and address on the reverse of this form so that we can return this card to you.
- Attach this form to the front of the mailpiece, or on the back if space does not permit.
- Write "Return Receipt Requested" on the mailpiece below the article number.
- The Return Receipt will show to whom the article was delivered and the date delivered.

I also wish to receive the following services (for an extra fee):

- Addressee's Address
- Restricted Delivery

Consult postmaster for fee.

3. Article Addressed to:  
 E. M. Newberg  
 IMC-AgriCo  
 3095 Hwy 640  
 P O Box 2000  
 Mulberry, FL 33860

4a. Article Number  
 2 333 612 502

4b. Service Type

Registered  Certified  
 Express Mail  Insured  
 Return Receipt for Merchandise  COD

7. Date of Delivery  
 9-15-98

5. Received By: (Print Name)  
 33860  
 Signature (Addressee or Agent)  
 X

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

PS Form 3811, December 1994 102595-97-B-0179 Domestic Return Receipt

Is your RETURN ADDRESS completed on the reverse side?

Thank you for using Return Receipt Service.

7 333 612 502

US Postal Service  
**Receipt for Certified Mail**  
 No Insurance Coverage Provided.  
 Do not use for International Mail (See reverse)

Sent to	E M Newberg	
Street & Number	IMC-AGRI CO	
Post Office, State, & ZIP Code	Mulberry FL	
Postage	\$	
Certified Fee		
Special Delivery Fee		
Restricted Delivery Fee		
Return Receipt Showing to Whom & Date Delivered		
Return Receipt Showing to Whom, Date, & Addressee's Address		
TOTAL Postage & Fees	\$	
Postmark or Date	9-11-98	
	1050059-024-AC	
	PSP-F1-044	

PS Form 3800 April 1995



# Department of Environmental Protection

Lawton Chiles  
Governor

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

Virginia B. Wetherell  
Secretary

## PERMITTEE:

**IMC AGRICO COMPANY**  
3095 Highway 640  
Mulberry, Florida 33860

**File No.:** 1050059-024-AC  
**Permit No.:** PSD-FL-244  
**SIC No.:** 2874  
**Project:** Multifos Plant Expansion  
**Expires:** September 30, 2000

## PROJECT AND LOCATION:

Permit for the expansion/modification of the Multifos Plant by constructing a new 25 TPH kiln (Kiln C), pug mill, cooler, crusher, screens, mills and associated processing and air pollution control equipment at the IMC Agrico (New Wales) facility, 3095 Highway 640, Mulberry, Polk County, Florida. UTM Coordinates are Zone 17; 396.6 km E; 3078.9 km N.

## STATEMENT OF BASIS:

This 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.). The above named permittee is authorized to modify the facility in accordance with the conditions of this permit and as described in the application, approved drawings, plans, and other documents on file with the Department of Environmental Protection (Department).

Appendices and attachments made a part of this permit:

Appendix BD	Best Available Control Technology Determination
Appendix CSC	Emission Unit(s) Common Specific Conditions
Appendix GC	Construction Permit General Conditions

Howard L. Rhodes, Director  
Division of Air Resources  
Management

# AIR CONSTRUCTION PERMIT 1050059-024-AC

## SECTION I. FACILITY INFORMATION

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### FACILITY DESCRIPTION

The existing Multifos animal feed ingredient facility consists of a common mixed feed preparation section for feeding phosphate-containing material to two rotary defluorination kilns and associated processing and handling equipment. This permit is for an expansion project to increase the capacity of the existing 30 tons per hour plant to 55 tons per hour by installing a new kiln and higher capacity mixing equipment to prepare the feed material for all three kilns.

### REGULATORY CLASSIFICATION

The Multifos plant is classified as a "Major or Title V Source" per Rule 62-210.200, F.A.C., Definitions, because emissions of at least one regulated air pollutant exceed 100 tons per year (TPY).

Phosphate processing plants are listed as a Major Facility Category in Table 62-212.400-1, F.A.C., "Major Facility Categories." Therefore, stack and fugitive emissions of over 100 TPY of a regulated pollutant are sufficient to classify the installation as a "Major Facility" per the definitions in Rule 62-210.200, F.A.C., subject to the Significant Emission Rates given in Table 62-212.400-2, F.A.C. and the requirements of Rule 62-212.400, F.A.C., Prevention of Significant Deterioration (PSD) and Best Available Control Technology (BACT).

### PERMIT SCHEDULE:

- 07/31/98 . Notice of Intent published in the Lakeland Ledger
- 07/23/98 Distributed Intent to Issue Permit
- 05/21/98 Application deemed complete
- 12/01/97 Received Application

### RELEVANT DOCUMENTS:

The documents listed below are the basis of the permit. They are specifically related to this permitting action but do not supersede the conditions given in the permit. These documents are on file with the Department.

- Application received December 1, 1997
- Department's letters dated December 16 and 31, 1997
- Comments from the National Park Service dated August 25, 1998
- Applicant's completeness responses dated March 5, April 15, April 23, and May 21, 1998
- Department's Intent to Issue dated July 23, 1998 and associated documents
- Applicant's letters dated August 11, August 13 and September 3, 1998
- Department's Final Determination accompanying permit

# AIR CONSTRUCTION PERMIT 1050059-024-AC

## SECTION II. EMISSION UNIT(S) GENERAL REQUIREMENTS

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### GENERAL AND ADMINISTRATIVE REQUIREMENTS

1. Regulating Agencies: All documents related to applications for permits to operate, reports, tests, minor modifications and notifications shall be submitted to the Department's Southwest District Office, 3804 Coconut Palm Drive, Tampa, Florida 33619-8218. All applications for permits to construct or modify an emissions unit(s) *subject to the Prevention of Significant Deterioration or Nonattainment (NA) review requirements* should be submitted to the Bureau of Air Regulation (BAR), Florida Department of Environmental Protection (FDEP), 2600 Blair Stone Road (MS 5505), Tallahassee, Florida 32399-2400 (phone number 850/488-0114).
2. General Conditions: The owner and operator is subject to and shall operate under the attached General Permit Conditions G.1 through G.15 listed in *Appendix GC* of this permit. General Permit Conditions are binding and enforceable pursuant to Chapter 403 of the Florida Statutes. [Rule 62-4.160, F.A.C.]
3. Emission Unit(s) Common Specific Conditions: The owner and operator is subject to and shall operate under the attached Emission Unit(s) Common Specific Conditions listed in *Appendix CSC* of this permit. The Emission Unit(s) Common Specific Conditions are binding and enforceable pursuant to Chapters 62-204 through 62-297 of the Florida Administrative Code.
4. Terminology: The terms used in this permit have specific meanings as defined in the corresponding chapters of the Florida Administrative Code.
5. Forms and Application Procedures: The permittee shall use the applicable forms listed in Rule 62-210.900, F.A.C. and follow the application procedures in Chapter 62-4, F.A.C. [Rule 62-210.900, F.A.C.]
6. Expiration: This air construction permit shall expire on September 30, 2000 [Rule 62-210.300(1), F.A.C.]. The permittee may, for good cause, request that this construction permit be extended. Such a request shall be submitted to the Bureau of Air Regulation prior to 60 days before the expiration of the permit. However, the permittee shall promptly notify the Department's Southwest District Office of any delays in completion of the project which would affect the startup day by more than 90 days. [Rule 62-4.090, F.A.C.]
7. Application for Title V Permit: An application for a Title V operating permit, pursuant to Chapter 62-213, F.A.C., must be submitted to the Department's Southwest District Office. [Chapter 62-213, F.A.C.]

# AIR CONSTRUCTION PERMIT 1050059-024-AC

## SECTION III. EMISSION UNIT(S) SPECIFIC CONDITIONS

### SPECIFIC CONDITIONS - MULTIFOS PRODUCTION PLANT:

The following Specific Conditions apply to the following emission units:

EMISSIONS UNIT NO.	EMISSIONS UNITS DESCRIPTION
030	Multifos Soda Ash Hopper Car Unloading System
031	Multifos Soda Ash Conveying System Baghouse
032	Multifos Kiln A Cooler Baghouse
033	Multifos Kiln B Cooler Baghouse
034	Multifos Plant Milling & Sizing West Baghouse
035	Multifos Plant Milling & Sizing East Baghouse
036	Multifos Production Plant
	Multifos Kiln C Cooler Baghouse
	Multifos Kiln C Milling & Sizing Baghouse
038	Multifos Milling & Sizing System Surge Bin Baghouse

- The above emissions units shall comply with all applicable provisions of Chapter 62-296, Stationary Sources - Emission Standards, Florida Administrative Code (F.A.C.).
- Emissions from the above emissions units shall not exceed the following limits (PM includes PM<sub>10</sub>): [Rules 62-204.800(7)(b)10; 62-210.200; 62-212.400, F.A.C.]

POLLUTANT	EMISSION LIMIT	LIMIT BASIS
F (Kiln A/B Stack)	4.2 lb/hr	Current limit for scrubbers
F (" C Stack)	0.36 lb/hr	0.038 lb F/ton P <sub>2</sub> O <sub>5</sub> input to kiln (BACT)
PM (" A/B Stk)	29.8 lb/hr	Current limit for scrubbers
PM (" C Stack)	14.3 lb/hr	1.50 lb/ton P <sub>2</sub> O <sub>5</sub> input to kilns (BACT)
SO <sub>2</sub> (" A/B Stack)	Min. caustic flow in lieu of limit	15 gph 50% NaOH (Resolution of past permitting)
SO <sub>2</sub> (" C Stack)	8.7 lb/hr	98% Efficient Scrubber based on 4/9/98 test
NO <sub>x</sub> (" A/B Stack)	Max. fuel usage in lieu of limit	56 MM BTU/hr maximum for each kiln
NO <sub>x</sub> (" C Stack)	To be determined following testing	Test will determine need for limit
Metals (" C Stack)	To be determined following testing	Test will determine need for limit
VE (" A/B Stack)	< 20% opacity	Current limit for scrubbers
VE (" C Stack)	15% opacity	BACT limit for scrubbers
VE ("A/B baghses.)	< 20% opacity	Current permit limit
VE ("C baghouses)	5% opacity	BACT limit for baghouses

- The input rate of the mixed feed preparation section of the Multifos plant (includes all equipment for processing and storing mixed feed) shall not exceed 100 tons per hour of raw materials. [Rule 62-210.200, F.A.C. (Definitions - Potential Emissions)]
- The input rate of the kilns, screens, mills and product section of the Multifos plant (includes all equipment for feeding materials to the kilns, all thermal processing equipment, coolers, crushers, screens, mills and associated materials storage and handling equipment) shall not exceed the values listed below.

# AIR CONSTRUCTION PERMIT 1050059-024-AC

## SECTION III. EMISSION UNIT(S) SPECIFIC CONDITIONS

UNIT	MAXIMUM HOURLY INPUT RATE*
Kiln A	15 tons/hr (5.7 tons P <sub>2</sub> O <sub>5</sub> /hr)
Kiln B	15 tons/hr (5.7 tons P <sub>2</sub> O <sub>5</sub> /hr)
Kiln C	25 tons/hr (9.5 tons P <sub>2</sub> O <sub>5</sub> /hr)
Product Handling Operations	75 tons/hr

- The above emission units shall be allowed to operate continuously (8760 hours/year). The total annual production rate of Kilns A & B combined shall not exceed 140,000 tons of multifos. The total annual input rate to Kiln C shall not exceed 219,000 tons of mixed feed. [Rule 62-210.200, F.A.C. (Definitions - Potential Emissions)]
- To control emissions from Kiln C, the permittee shall install and operate a pond water/caustic scrubbing system designed for 99.9+% removal of fluorides and 98.0+% removal of SO<sub>2</sub>. To prevent recovered SO<sub>2</sub> from being stripped out of acidic pond water that may be recirculated to other scrubbers, no effluent from caustic scrubbing shall be discharged to the existing process water pond system or any other acidic waste water that can be recirculated to any scrubber. Prior to startup of Kiln C, the permittee shall obtain approval from the Bureau of Air Regulation in Tallahassee regarding the disposition of caustic scrubber effluent. A new stack shall be installed for the exhaust from Kiln C. A NO<sub>x</sub> emission limit shall be established for Kiln C following the initial performance test. Kiln C shall be fired with natural gas unless it is not available, in which case only new No. 2 fuel oil having a maximum sulfur content of 0.5% (wt.) may be fired for up to 1,225 hours per year. The maximum fuel firing rate of Kiln C shall be 56 MMBTU/hr. [Rules 62-4.070 and 62-212.400, F.A.C.]
- To resolve the issue of past permitting decisions on Kilns A & B, the permittee agrees to scrub each kiln's exhaust gases with a minimum of 100 gpm of recirculated sodium sulfite solution injected onto the packing or demisting sections of the existing Kiln A & B scrubbers. The scrubbing solution shall consist of spent caustic solution from the Kiln C scrubbing system, when operating, and a minimum of 15 gallons per hour of 50% caustic solution (total for both kilns) with the 50% caustic makeup flow measured and recorded by an inline totalizing flowmeter with certified accuracy of ± 5%. To prevent recovered SO<sub>2</sub> from being stripped out of acidic pond water that may be recirculated to other scrubbers, no effluent from caustic scrubbing shall be discharged to the existing process water pond system or any other acidic waste water that can be recirculated to any scrubber. Prior to startup of caustic scrubbing, the permittee shall obtain approval from the Bureau of Air Regulation in Tallahassee regarding the disposition of caustic scrubber effluent. To limit NO<sub>x</sub> emissions, fuel input to Kilns A and B shall be limited to 56 MMBTU/hr for each kiln. An initial EPA Method 8 performance test for SO<sub>2</sub> and a Method 7E test for NO<sub>x</sub> emissions from the Kiln A/B stack shall be required to establish emissions offsets for future contemporaneous production increases that may be applied for by the permittee as a result of installing and operating the caustic scrubbing system. The permittee shall also conduct a one-time test for total fluoride emissions in the mixed feed storage building while the input rate to the mixed feed preparation section is at least 90 tons per hour. Results of these tests shall be sent to the Bureau of Air Regulation in Tallahassee for placement in the permittee's file. The test results shall be used for future reference only and shall not be used for current compliance or enforcement purposes. The Bureau of Air Regulation in Tallahassee shall be consulted regarding future applications for physical modification of or a change in the method of operation of any of the three kilns or associated equipment. [Rules 62-4.070 and 62-212.400, F.A.C.]



# AIR CONSTRUCTION PERMIT 1050059-024-AC

## SECTION III. EMISSION UNIT(S) SPECIFIC CONDITIONS

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8. Fuels burned in the phosphate rock dryer shall be either natural gas or new No. 6 or a better grade of fuel oil, except that annual fuel oil usage shall not exceed 50% of natural gas usage on an equivalent heat content basis unless gas curtailment forces greater usage of oil. The same fuel restrictions shall apply to Kilns A & B except that on-specification used oil containing no hazardous wastes (and generated on-site only) may be burned in quantities up to 10% of the total annual fuel consumption on an equivalent heat content basis. [Rule 62-210.200, F.A.C.]
9. As provided in the current operation permit (AO53-206083B) for disposal purposes, petroleum contaminated soils from the cleanup of on-site spills of petroleum products may be added to the kiln feed at a maximum rate of 220 ft<sup>3</sup> per week for all three kilns combined. Each kiln receiving petroleum contaminated soil shall be operating normally at a minimum feed rate of 8 tons per hour when the soil is fed to the kiln. [Rule 62-210.200, F.A.C.]
10. Compliance with the emission limits for F, PM/PM<sub>10</sub>, SO<sub>2</sub>, NO<sub>x</sub> and VE shall be determined using the following reference methods as described in 40 CFR 60, Appendix A (1996, version), adopted by reference in Chapter 62-204, F.A.C.

**Method 13A/B** Determination of Total Fluoride Emissions from Stationary Sources

**Method 5** Determination of Particulate Emissions from Stationary Sources

**Method 7E** Determination of Nitrogen Oxides from Stationary Sources.

**Method 8** Determination of Sulfuric Acid Mist and Sulfur Dioxide Emissions from Stationary Sources.

**Method 9** Visual Determination of the Opacity of Emissions from Stationary Sources.

In addition to the test methods specified above, as part of the performance testing requirements, a special test for metals (Cr, Hg, Ni, Cd) emissions shall be conducted for Kiln C according to the following reference method as described in 40 CFR 60, Appendix A cited above.

**Method 29** Determination of Metals Emissions from Stationary Sources

The permittee shall provide reasonable assurance of compliance by maintaining a continuous written record (log) of the operating parameters for all scrubbers in the Multifos plant. At a minimum, the following information shall be manually recorded during each hour of operation: scrubber liquid flow rates, scrubber gas pressure drop, fan motor amperage, name of person recording the information. The log shall be maintained as required by Specific Condition No. 10 below.

The above emissions units shall comply with all applicable requirements of Rule 62-297.310, F.A.C. General Test Requirements and 40 CFR 60.8 Performance Tests. [Rule 62-4.070, F.A.C.]

11. Testing of emissions shall be conducted with the emissions units operating at permitted capacity, which is defined as 90-100% of the maximum operating rate allowed by the permit. This also applies to the mixed feed preparation section. If it is impracticable to test at permitted capacity, then the unit may be tested at less than 90% of the maximum operating rate allowed by the permit; in this case, subsequent source operation is limited to 110% of the test load until a new test is conducted. Once the unit is so limited, then operation at higher capacities is allowed for no more than fifteen consecutive days for the purpose of

# AIR CONSTRUCTION PERMIT 1050059-024-AC

## SECTION III. EMISSION UNIT(S) SPECIFIC CONDITIONS

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additional compliance testing to regain the permitted capacity in the permit. [Rules 62-204.800, 62-297.310, 62-297.400, 62-297.401, F.A.C., and 40 CFR 60 Appendix A and 40 CFR 60.8, Subpart A].

12. This facility shall maintain a central file containing all measurements, records, and other data that are required to be collected pursuant to this permit. For all air pollution control equipment affected by this permit, the permittee shall keep a daily operation and maintenance log to include, at a minimum, calibration logs for all instruments, maintenance/repair logs for any work performed on equipment or instruments, all measurements, records, and any other data required to be maintained by the permittee shall be retained for at least five (5) years following the data on which such measurements, records, or data are recorded. These data shall be made available to Department staff upon request. [Rule 62-4.070(3), F.A.C.]
13. Plant and emission control equipment operating parameters determined during compliance testing and/or inspection that will establish the proper operation of each emissions unit shall be included in the Title V permit. [Rule 62-297.310, F.A.C. and 62-4.070(3), F.A.C.]
14. The permittee shall install, calibrate, maintain, and operate monitoring devices to determine the mass flow to the mixed feed pug mill and to each of the three kilns. The monitoring devices shall have an accuracy of  $\pm 5\%$  over their operating ranges. The permittee shall maintain a daily record of equivalent  $P_2O_5$  feed by first determining the total mass rate in tons/hour of phosphorus-bearing feed using a flow monitoring device meeting the requirements of 40 CFR 60.223(a) and then by proceeding according to 40 CFR 60.224(b)(3). [Rule 62-296.800, F.A.C.; 40 CFR 60.223(b)]
15. The permittee shall not cause, suffer, allow, or permit the discharge of air pollutants which cause or contribute to an objectionable odor. [Rule 62-296.320, F.A.C.]
16. The permittee shall not allow any air pollution control device to be circumvented or allow the emission of air pollutants while the applicable air pollution control device is operating improperly. [Rule 62-210.650, F.A.C.]
17. The subject emissions units shall be subject to the following:
  - Excess emissions resulting from startup, shutdown or malfunction of any source shall be permitted providing (1) best operational practices to minimize emissions are adhered to and (2) the duration of excess emissions shall be minimized but in no case exceed two hours in any 24 hour period unless specifically authorized by the Department for longer duration. [Rule 62-210.700, F.A.C.]
  - Excess emissions which are caused entirely or in part by poor maintenance, poor operation, or any other equipment or process failure which may reasonably be prevented during startup, shutdown, or malfunction shall be prohibited. [Rule 62-210.700, F.A.C.]
  - Considering operational variations in types of industrial equipment operations affected by this rule, the Department may adjust maximum and minimum factors to provide reasonable and practical regulatory controls consistent with the public interest. [Rule 62-210.700, F.A.C.]
  - In case of excess emissions resulting from malfunctions, each source shall notify the Department or the appropriate Local Program in accordance with Rule 62-4.130, F.A.C. A full written report on the malfunctions shall be submitted in a quarterly report, if requested by the Department. [Rule 62-210.700, F.A.C.]

## AIR CONSTRUCTION PERMIT 1050059-024-AC

### SECTION III. EMISSION UNIT(S) SPECIFIC CONDITIONS

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18. The permittee shall submit an Annual Operating Report using DEP Form 62-210.900(4) to the Department's Southwest District office by March 1 of the following year for the previous year's operation. [Rule 62-210.370, F.A.C.]

**APPENDIX BD - REVISED**  
**BEST AVAILABLE CONTROL TECHNOLOGY DETERMINATION (BACT)**

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**IMC-Agrico Company (New Wales)**  
**Multifos Plant Expansion**  
**PSD-FL-244 / 1050059-024-AC**  
**Mulberry, Polk County**

The IMC-Agrico Company has applied to expand production capacity of its "Multifos" animal feed ingredient facility at the New Wales complex in Polk County by enlarging the capacity of the feed preparation section and installing a third rotary kiln (Kiln C) adjacent to the two existing Kilns A & B. Processing capability will be increased by 83% from 30 tons of material per hour to 55 tons per hour with the new kiln producing 45% of the total output. As originally proposed by the applicant, the plant expansion would have resulted in a significant increase in emissions of particulate matter (PM/PM<sub>10</sub>), fluorides (F) and sulfur dioxide (SO<sub>2</sub>). After submitting the application, the applicant proposed a cap on the feed input rate (originally 9.5 tons P<sub>2</sub>O<sub>5</sub> per hour and later reduced to 6.5 tons P<sub>2</sub>O<sub>5</sub> per hour which is equivalent to 17.1 tons of feed per hour) along with the installation of a scrubber for the new kiln to allow it to escape PSD review for SO<sub>2</sub>. A similar restriction on fuel oil consumption was later proposed to avoid PSD review for oxides of nitrogen (NO<sub>x</sub>).

The Department's preliminary analysis showed that, based on the average actual multifos processing rate of 137,141 tons per year for 1996/97 (vs. 262,800 tons allowed) and the estimated fuel usage rates, the actual emissions of NO<sub>x</sub> from the existing rock dryer and kilns are above the PSD significance threshold of 40 tons per year. Since the applicant's proposed feed rate cap did not allow the applicant to avoid PSD review, the originally requested feed rates were used in the preliminary determination and proposed permit issued on July 24, 1998. NO<sub>x</sub> test data for the existing kilns was subsequently provided by the applicant and showed that the plant expansion is subject to PSD review.

The Department's preliminary analysis determined that the expansion would subject the two existing kilns as well as the new kiln to PSD review since physical and operational changes upstream of the kilns that are integral to the planned increase in capacity would increase the plant-wide potential to emit. The new kiln and larger pug mill were initially considered as debottlenecking modifications allowing an increased potential to emit for the entire plant (including the two existing kilns). Operation of the existing kilns at their current allowable capacity of 262,800 tons of product per year (99,864 tons P<sub>2</sub>O<sub>5</sub>) vs. their past average actual capacity of 137,141 tons of product per year (52,114 tons P<sub>2</sub>O<sub>5</sub>) would have resulted in an increase of 1,091 tons of SO<sub>2</sub> per year based on an emission factor of 45.7 lb SO<sub>2</sub>/ton P<sub>2</sub>O<sub>5</sub> determined from a test conducted in April of 1998. To avoid the debottlenecking classification and its associated PSD review and BACT requirement, the applicant subsequently agreed to limit the permitted processing rates for Kilns A & B to the actual rates for 1997 (maximum of 140,000 tons per year), thereby providing reasonable assurance that actual emissions will not increase above current levels. Further, the applicant and the Department agreed to resolve the issue of whether BACT should have been applied to Kilns A & B in prior

**APPENDIX BD**  
**BEST AVAILABLE CONTROL TECHNOLOGY DETERMINATION (BACT)**

permitting actions by installing a caustic scrubbing system using the last packed section of the existing scrubbers.

Kiln C is therefore subject to Prevention of Significant Deterioration (PSD) review for F (as HF), PM/PM<sub>10</sub>, SO<sub>2</sub> and NO<sub>x</sub> in accordance with Rule 62-212.400, Florida Administrative Code (F.A.C.). A Best Available Control Technology (BACT) determination is part of the review required by Rules 62-212.400 and 62-296, F.A.C. A BACT determination for metals will be required if indicated by the performance test data. If required, the BACT determination for lead and/or mercury will be completed by the Department within 45 days following receipt of the test data.

**PROCESS EMISSIONS**

The Multifos Plant calcines a mixture of phosphoric acid, soda ash and phosphate rock at about 2700-2800° F to produce a defluorinated animal feed supplement. Known pollutant emissions from the process are indicated below in tons per year. (No information is available on metal emissions such as chromium, mercury, lead, and nickel that are present in the rock):

Pollutant	PSD Level <sup>1</sup>	Actual Emissions <sup>2</sup>	Current Allowables	New Emissions	Net Change	Subject to PSD Review?
F	3	13.0	14.8	1.8+10.5 <sup>3</sup>	12.3 <sup>3</sup>	Yes
PM	25/15 <sup>5</sup>	57.6	130.7	73.1+84.7 <sup>3</sup>	157.8 <sup>3</sup>	Yes
NO <sub>x</sub>	40	40+	N/A	39 <sup>3</sup> /100 <sup>4</sup>	60.0 <sup>4</sup>	Yes
SO <sub>2</sub>	40	1,191	N/A	39 <sup>3</sup> /2,993 <sup>4</sup>	1,802 <sup>4</sup>	Yes
CO	100	8.9	N/A	6.5 <sup>3</sup>	6.5 <sup>3</sup>	No
VOC	40	1.5	N/A	1.0 <sup>3</sup>	1.0 <sup>3</sup>	No
Metals	-	-	N/A	-	-	T.B.D. <sup>6</sup>
VE	N/A	17%	20%	20% <sup>3</sup>	N/A	N/A

<sup>1</sup> Tons per year (Rule 212.400, F.A.C.).

<sup>2</sup> Calculated by DEP based on two-year average using 1998 and 1997 compliance data for F and PM/PM<sub>10</sub>; 1997/1996 average actual tonnage times 1998 test result for SO<sub>2</sub>; emission factor times 1997/1996 average actual tonnage for NO<sub>x</sub>, CO and VOC emissions.

<sup>3</sup> Proposed by applicant as additional allowable emissions (adjusted by annual emission cap).

<sup>4</sup> Potential new uncontrolled emissions (includes operating existing kilns at permitted rate).

<sup>5</sup> PM/PM<sub>10</sub>.

<sup>6</sup> To be determined after performance testing due to lack of data.

**DATE OF RECEIPT OF COMPLETE BACT APPLICATION:**

May 21, 1998

**APPENDIX BD**  
**BEST AVAILABLE CONTROL TECHNOLOGY DETERMINATION (BACT)**

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**BACT DETERMINATION PROCEDURE:**

In accordance with Chapter 62-212, F.A.C., this BACT determination is based on the maximum degree of reduction of each pollutant emitted which the Department of Environmental Protection (Department), on a case by case basis, taking into account energy, environmental and economic impacts, and other costs, determines is achievable through application of production processes and available methods, systems, and techniques. In addition, the regulations state that, in making the BACT determination, the Department shall give consideration to:

- Any Environmental Protection Agency determination of BACT pursuant to Section 169, and any emission limitation contained in 40 CFR Part 60 - Standards of Performance for New Stationary Sources or 40 CFR Part 61 - National Emission Standards for Hazardous Air Pollutants.
- All scientific, engineering, and technical material and other information available to the Department.
- The emission limiting standards or BACT determination of any other state.
- The social and economic impact of the application of such technology.

The EPA currently stresses that BACT should be determined using the "top-down" approach. The first step in this approach is to determine, for the emission unit in question, the most stringent control available for a similar or identical emission unit or emission unit category. If it is shown that this level of control is technically or economically unfeasible for the emission unit in question, then the next most stringent level of control is determined and similarly evaluated. This process continues until the BACT level under consideration cannot be eliminated by any substantial or unique technical, environmental, or economic objections.

The air pollutant emissions from this facility can be grouped into categories based upon the control equipment and techniques that are available to control emissions from these emission units. Using this approach, the emissions can be classified as indicated below:

- ***Fluorides*** (primarily HF). Controlled generally by scrubbing with pond water.
- ***Particulate Matter*** (PM, PM<sub>10</sub>). Controlled generally by wet scrubbing or filtration.

**APPENDIX BD**  
**BEST AVAILABLE CONTROL TECHNOLOGY DETERMINATION (BACT)**

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- **Combustion Products** (SO<sub>2</sub>, NO<sub>x</sub>). NO<sub>x</sub> controlled generally by good combustion of clean fuels. SO<sub>2</sub> controlled generally by scrubbing when quantities are substantial.
- **Products of Incomplete Combustion** (CO, VOC). Controlled generally by proper combustion.
- **Metals** (Cr, Hg, Pb, Ni, Cd). Controlled generally by scrubbing, filtration or other processes.

Grouping the pollutants in this manner facilitates the BACT analysis because it enables the pollutant control equipment and the corresponding energy, economic, and environmental impacts to be examined on a common basis. Although all of the pollutants addressed in the BACT analysis may be subject to a specific emission limiting standard as a result of PSD review, the control of "non-regulated" air pollutants is considered in imposing a more stringent BACT limit on a "regulated" pollutant (i.e., PM, SO<sub>2</sub>, H<sub>2</sub>SO<sub>4</sub>, fluorides, etc.), if a reduction in "non-regulated" air pollutants can be directly attributed to the control device selected as BACT for the abatement of the "regulated" pollutants.

**BACT AND NON-BACT KILN EMISSION LIMITS PROPOSED BY APPLICANT:**

POLLUTANT	EMISSION LIMIT	LIMIT BASIS	CONTROL TECHNOLOGY
F	3.50 lb/hr (kiln)	0.37 lb/ton P <sub>2</sub> O <sub>5</sub> input	Packed scrubber w/ untreated pond water
PM	20.00 lb/hr (kiln)	2.10 lb/ton P <sub>2</sub> O <sub>5</sub> input	Packed scrubber w/ pond water
PM	6.30 lb/hr (cooler)	0.02 gr/scf	Fabric Filter
PM	1.90 lb/hr (screens/mills)	0.02 gr/scf	Fabric Filter
SO <sub>2</sub>	8.90 lb/hr (kiln)	Escape PSD	Limit on production rate
NO <sub>x</sub>	32.50 lb/hr (kiln)	Escape PSD	Limit on fuel oil usage
VE	Exemption Requested	-	Same as PM

**BACT POLLUTANT ANALYSIS**

**GASEOUS FLUORIDES (HF)**

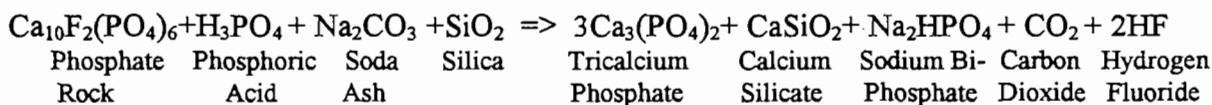
The demand for defluorinated phosphates as an animal feed supplement, primarily for cattle, poultry, and hogs, began as a result of the World War II shortage of bonemeal. It was found that the calcium and phosphorus needed in the animal diet could be obtained by treating phosphate rock, which typically contains 34-35% P<sub>2</sub>O<sub>5</sub>, to remove the 3.0 - 4.0% fluorine constituent. An early process involved calcining a mixture of phosphate rock and silica from the rock beneficiation process to remove the fluorine. Other defluorinated feed-grade phosphate products were later produced by defluorinating the phosphoric acid before reacting it with limestone or ammonia. Another process involved reacting phosphate rock with sulfuric acid to form "normal" or "single"

**APPENDIX BD**  
**BEST AVAILABLE CONTROL TECHNOLOGY DETERMINATION (BACT)**

---

superphosphate which was heated sufficiently to volatilize the fluorine while the mono and dicalcium phosphate compounds were being converted to tricalcium phosphate. As process refinements evolved, soda ash (sodium carbonate) was mixed with wet process phosphoric acid and phosphate rock in a pug mill to produce a triple superphosphate (3 moles of soluble phosphate formed per mole of insoluble phosphate).

Since the applicant provided little process information initially and the literature contains only very sketchy details, the Department's preliminary analysis assumed the following reaction:



With respect to gaseous fluoride emissions, the pug mill acid/rock mixing and storage steps appeared to resemble the triple superphosphate fertilizer process with its difficult air pollution problems. In Run-of-Pile Triple Superphosphate (ROP-TSP) plants, the reactions proceed while the material is transported on a slow-moving enclosed conveyor called a "den". As the material moves along on the way to the curing building, rapid evolution of fluoride-containing gases occurs, requiring scrubbing to remove fluorides. Triple superphosphate plants typically must control fluorides from the curing/storage building as well as the mixing area. For this reason, the Department initially required a fluoride scrubber for the storage building. Subsequently, the applicant provided data and documentation indicating that, due to multifos's differing reaction stoichiometry, curing of the mixed feed does not occur as in the ROP-TSP process and therefore fluoride emissions from the storage building are not significant. Consequently, the scrubber requirement for the storage building has been removed, however, the Department will require a one-time emission test of the storage building emissions to verify this conclusion.

The majority of the fluoride from the multifos process is emitted as hydrogen fluoride (HF) as the mixed feed is heated to 2,700-2,800°F in the kilns. Thus, the major sources of fluoride emissions are the pug mill and kilns. Additional fluoride emissions are generated in the cooler, however, these are typically low and do not require separate fluoride scrubbing.

**PARTICULATE MATTER (PM/PM<sub>10</sub>) AND VISIBLE EMISSIONS (VE)**

The sources of PM and VE are the rock dryer and associated conveying equipment, the kilns, coolers, crushers, screens and mills. These emissions are controlled by cyclones, baghouses and scrubbers. The applicant has proposed that baghouses be installed for controlling PM/PM<sub>10</sub> emissions from the cooler, crusher, screens and mills and that the existing control equipment for the kilns be considered as BACT.



**APPENDIX BD**  
**BEST AVAILABLE CONTROL TECHNOLOGY DETERMINATION (BACT)**

---

**SULFUR DIOXIDE (SO<sub>2</sub>)**

Emissions of SO<sub>2</sub> result from the sulfur content of the phosphate rock as it is heated and oxidized in the kiln. The amount resulting from sulfur in the fuel is relatively low. The applicant has proposed the installation of a 97% efficient caustic scrubber as BACT.

**NITROGEN OXIDES (NO<sub>x</sub>)**

NO<sub>x</sub> emissions occur as a result of the oxidation of nitrogen in the air and fuel during the fuel combustion process for the rock drying section and the kilns. Add-on equipment for NO<sub>x</sub> control would not be feasible or cost-effective for this process. Options for control must focus on the kiln and burner design to prevent excessive NO<sub>x</sub> formation rather than removal.

**METALS**

The extent of metals emissions from this process is not known. Metals (Cr, Hg, Pb, Ni, Cd) emissions will be determined by additional stack tests performed during the performance testing phase. If the need for additional control is indicated by the test results, a proper determination will be completed within 45 days of receipt of the test results.

**BACT DETERMINATION BY THE DEPARTMENT:**

**FLUORIDES**

Reliable uncontrolled/controlled emission factors for fluorides from kiln-type feed grade defluorinated phosphate processes are not widely available in the literature. A permit issued by the State of Virginia in 1985 for a similar facility operated by PCS Phosphates, Inc. (formerly Texasgulf Chemicals Company), in Saltville, Virginia, used an uncontrolled emission factor of 50 lb HF per ton feed and a controlled emission factor of 0.02 lb HF per ton feed. The controlled emission factor of 0.02 was lowered in 1993 to 0.012 lb/ton feed (0.038 lb/ton P<sub>2</sub>O<sub>5</sub>) following several years of test results showing that lower fluoride emissions were being achieved. The PCS plant uses two scrubbers in series with scrubber water pH controlled near 7.0 and a minimum pressure drop of 21.3 inches water gauge across the second scrubber. A double-alkali treatment system for SO<sub>2</sub> control maintains the neutrality of the scrubber water which results in a very high degree of fluoride removal (99.9+%) from the kiln gas stream.

The applicant has proposed that a crossflow scrubber identical to the two existing crossflow kiln scrubbers using untreated pond water be accepted as BACT for the new kiln. The crossflow scrubber itself is acceptable as BACT, but the pH of the applicant's pond water is far below acceptable levels for achieving fluoride removal efficiencies that are representative of best available control technology. Using the PCS test data and their uncontrolled emission factor of about 50 lb

**APPENDIX BD**  
**BEST AVAILABLE CONTROL TECHNOLOGY DETERMINATION (BACT)**

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HF per ton feed along with an estimated equilibrium concentration based on published data, the mass transfer performance of the PCS system is approximated by the following:

Data

Test Date	March 7, 1997
Kiln Feed Rate	15.5 tons/hr
Kiln Stack Gas Flow Rate	24,338 scfm
Kiln Stack Gas Temperature	167°F
Fluoride Stack Emission Rate	0.068 lb/hr
Fluoride Stack Concentration	0.939 ppmvd
Scrubber Water pH	7.0
Scrubber Pressure Drop	23 in. H <sub>2</sub> O
Estimated F Concentration in H <sub>2</sub> O	15-20 mg/L
Estimated Equilibrium (Gas Phase)*	0.08 mg. HF/m <sup>3</sup>

\* Source: Phosphates and Phosphoric Acid, by Pierre Becker, Marcel Dekker, Inc. 1989, p. 403

Analysis

50 lb HF/ton X 15.5 tons/hr = 775 lb HF/hr to scrubber  
775 lb/hr X 454 g/lb X 1000/60 = 5.9 (10<sup>6</sup>) mg HF/min to scrubber  
24,338 scf/min X 0.0283 = 688.8 m<sup>3</sup>/min  
Scrubber Inlet Concentration = 5.9(10<sup>6</sup>) / 688.8 = 8,565 mg HF/m<sup>3</sup>  
0.068 lb HF/hr X 454 g/lb X 1000/60 = 514.5 mg HF/min from scrubber  
Scrubber Outlet Concentration = 514.5/688.8 = 0.75 mg HF/m<sup>3</sup>  
Mass Transfer Units = ln[(8,565 - 0.08)/(0.75 - 0.08)] = 9.5

The mass transfer capability of the scrubbing system proposed by the applicant using untreated pond water can be approximated from compliance test data over the last few years. Fluoride test results for the applicant's two kilns (exhausting through a common stack) have varied from 1.8 (1995) to 3.2 lb/hr (1997) at material feed rates of about 22 - 25 tons/hr containing around 37% (wt.) P<sub>2</sub>O<sub>5</sub>. For this approximation, an average emission rate of 2.8 lb/hr will be used. Stack gas flow rates average around 53,000 scfm. The pH of the untreated pond water used for scrubbing is believed to vary from about 1.0 to 1.5, containing up to 11,500 mg F/L. For cold weather pond water temperatures, the equilibrium gas phase concentration would be near 1.0 mg/m<sup>3</sup> for this highly acidic pond water. Applying the same uncontrolled emission factor as above, the cold-weather mass transfer capability of the applicant's scrubbing system is roughly:

50 lb HF/ton X 23 tons/hr = 1,150 lb HF/hr to scrubber  
1,150 lb/hr X 454 g/lb X 1,000/60 = 8.7(10<sup>6</sup>) mg HF/min to scrubber  
53,000 scf/min X 0.0283 = 1,500 m<sup>3</sup>/min

**APPENDIX BD**  
**BEST AVAILABLE CONTROL TECHNOLOGY DETERMINATION (BACT)**

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$$\begin{aligned}\text{Scrubber Inlet Concentration} &= 8.7(10^6)/1,500 = 5,800 \text{ mg HF/m}^3 \\ 2.8 \text{ lb HF/hr} \times 454 \text{ g/lb} \times 1,000/60 &= 21,186 \text{ mg HF/min from scrubber} \\ \text{Scrubber Outlet Concentration} &= 21,186/1,500 = 14.1 \text{ mg HF/m}^3 \\ \text{Mass Transfer Units} &= \ln[(5,800 - 1.0)/(14.1 - 1.0)] = 6.1\end{aligned}$$

This comparison shows that the applicant's pond water acidity is far too high to yield emissions representative of BACT for any high-fluoride emitting process. Without neutralization of the recycled pond water, it is not possible to achieve the 8+ mass transfer units (99.9+% efficiency) that is considered to be BACT for high-fluoride emitters. Chilling of the acidic scrubbing water to near freezing would lower the equilibrium fluoride concentration to around 0.2 vs. 1.0 mg/m<sup>3</sup>, but this alone would not bring the scrubber performance into the BACT range as shown below:

$$\begin{aligned}\text{Estimated Scrubber Emissions} &= 1.8 \text{ lb HF/hr} = 9.1 \text{ mg HF/m}^3 \\ \text{Mass Transfer Units} &= \ln[(5,800 - 0.2)/(9.1 - 0.2)] = 6.5\end{aligned}$$

To achieve BACT-level mass transfer units, neutralization with adequate mixing and settling facilities will be required to reduce the fluoride content of the acidic pond water sufficiently to obtain an equilibrium concentration of 0.10 mg/m<sup>3</sup> or less and an emission level representative of BACT for high-fluoride emitting processes:

$$\begin{aligned}\text{Estimated Scrubber Emissions} &= 0.4 \text{ lb HF/hr} = 2.0 \text{ mg HF/m}^3 \\ \text{Mass Transfer Units} &= \ln[(5,800 - 0.1)/(2.0 - 0.1)] = 8.0+\end{aligned}$$

Use of once-through fresh water would achieve the highest level of fluoride removal but this option is not practical for operations where water conservation is required and plant water balance problems would result.

As indicated above, the applicant's proposed kiln fluoride emission limit of 0.37 lb F per ton P<sub>2</sub>O<sub>5</sub> input is clearly not representative of BACT. Although this limit is listed as a "new plant" standard in Rule 62-296.403(1)(h), F.A.C., it was originally written into the rule over thirty years ago and thus reflects the early technology of scrubbing with unneutralized pond water. Since that time, use of neutralized water for scrubbing has been shown to achieve far greater reductions in fluoride emissions.

Fluoride emissions from the surface of the pond are classified as "fugitive emissions" and are included in the source's "potential to emit" by virtue of phosphoric acid plants being among the 28 PSD source categories subject to the 100 tons per year threshold for major sources. At a pH of 1.0, pond water can contain up to 12,000 mg F/L which can result in greater fluoride emissions from the pond surface than from a facility's scrubber stacks. Some phosphate plants routinely treat pond water to a pH of 3.0 - 3.5. At this pH the pond water will contain less than 200 mg/L fluoride and can be used as makeup for a dedicated scrubber pond.

**APPENDIX BD**  
**BEST AVAILABLE CONTROL TECHNOLOGY DETERMINATION (BACT)**

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A scrubber pond can be constructed by diking-off a ten-acre section of the existing pond to be used for scrubber water only. With neutralization of the kiln scrubber water in a dedicated scrubber pond, the calcium compounds (mainly dicalcium phosphate) will precipitate out along with additional calcium fluoride. Upon settling at a PH in the range of 5.8 to 7.0, the fluoride content of the clear neutralized water will be as low as 15-20 mg/L, equal to the quality of the scrubber water at PCS Phosphates' Virginia plant.

Another justification for the separate scrubber pond is to prevent the introduction of sulfite and sulfate ions from the caustic scrubbers into the lower pH pond water recirculating system which would result in recovered SO<sub>2</sub> being stripped out in other facility emission units that use the lower pH pond water. Temperature control for the diked-off scrubber pond section should be possible with evaporative cooling and minimal spraying since hot process water discharges will not be flowing into the isolated scrubber section. Costs for the scrubber pond neutralization are estimated below based on using waste gypsum for dike construction (no added liner) and discharging effluent from the caustic scrubber into the scrubber pond:

Diking of Scrubber Pond (400 hrs. @ \$300/hr)	\$ 120,000
Additional Equipment & Piping	350,000
Associated Costs	<u>30,000</u>
Total Installed Cost (T.I.C.)	\$ 500,000
Lime Treatment (@ \$5.00/1000 gal.)	\$ 35,000
Operation & Maintenance (@ 8.4% of T.I.C.)	42,000
Depreciation & Financial Charges (@ 16.9% of T.I.C.)	<u>84,500</u>
Annual Cost	\$ 161,500

Treatment of the scrubber water will increase the driving force for absorption by an additional 3.0 to 3.5 mass transfer units which should result in an additional 2.5 lb/hr of fluoride removed for the two existing kiln scrubbers, 2.4 lb/hr for the new kiln scrubber, and 2.1 lb/hr for the feed storage building scrubber. The total fluoride reduction for the multifos plant is considered in the economic analysis since the project covers modifications affecting the existing kilns (for example, the new feed pug mill serves all three kilns). The estimated fluoride emission reduction from the surface of the pond due to neutralization is 8.4 tons/yr {10 acres x 4.6 lb F/acre-day (from Becker, 1989) x 365/2000}. This results in the following incremental cost effectiveness:

$$\begin{aligned} \text{F Removed} &= (7.0)(8760)/2000 + 8.4 = 39.1 \text{ tons/yr} \\ \text{Cost Effectiveness} &= \$161,500/39.1 = \$4,130/\text{ton} \end{aligned}$$

The low magnitude of HF emissions relative to their high potential environmental impact, due to their status as a HAP, justifies the consideration of higher fluoride cost effectiveness figures compared to the high tonnage pollutants such as SO<sub>2</sub> and NO<sub>x</sub>. A typical cost effectiveness figure

**APPENDIX BD**  
**BEST AVAILABLE CONTROL TECHNOLOGY DETERMINATION (BACT)**

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for Selective Catalytic Reduction (SCR) for NO<sub>x</sub> control for combustion turbines is currently around \$4,000/ton NO<sub>x</sub> removed. Information obtained from the State of Virginia indicates that a double-alkali absorber/regeneration process equivalent to the PCS facility, installed in a Florida phosphate plant, would have a cost effectiveness of about \$8,000 per ton of HF removed based on allocation of costs according to the relative quantities of HF and SO<sub>2</sub> in the gas stream.

Rather than constructing a separate pond or diked section as discussed above, the applicant subsequently proposed that the combination of its proposed pond water fluoride scrubber and the 98.0+ % efficient caustic scrubber will collectively remove sufficient fluorides to achieve the BACT limit initially proposed by the Department. Based on the scrubber manufacturer's performance guarantee subsequently received, the Department accepts the applicant's proposed system as BACT.

**PARTICULATE MATTER (PM/PM<sub>10</sub>) AND VISIBLE EMISSIONS (VE)**

The top-down approach for control of PM/PM<sub>10</sub> and VE identified the following BACT options:

1. High-energy (>30 in.w.c.) venturi scrubber or ionizing wet scrubber.
2. Medium-energy (15-30 in.w.c.) venturi scrubber.
3. Two packed scrubbers in series.

By imparting an electrical charge to particles in the gas stream, ionizing wet scrubbers are able to achieve removal efficiencies approaching that of higher energy venturi scrubbers without incurring the higher operating cost. Data obtained from a major supplier of packed scrubbers indicate efficiencies of greater than 97% for PM control in an ammoniation/granulation fertilizer plant. However, high energy venturis are the most effective for PM control. Since particulate removal is by inertial impaction, the removal efficiency of venturis is a direct function of the impaction energy imparted to the particle in the venturi throat and the particle size distribution of the dust in the gas stream. The problem is that impaction energy costs begin to rise exponentially, as efficiencies higher than 98-99% are approached, such that the cost effectiveness of high energy impaction devices usually becomes prohibitive beyond that point. The cost effectiveness of high energy scrubbing would likely be above \$40,000 per incremental ton of PM/PM<sub>10</sub> removed if the facility already has a scrubber of moderate efficiency, say 85-90%. On a non-incremental basis, however, assuming replacement of the existing scrubber with a high energy one, the cost effectiveness would drop to around \$8,000 per ton for PM removal in the 98-99% efficiency range.

Since the primary function of the crossflow scrubber is fluoride removal, PM/PM<sub>10</sub> control is secondary from a design standpoint. By employing a control device that removes the pollutant of most concern extremely well (F at 99+% efficiency) while at the same time removing another important pollutant respectably well (PM/PM<sub>10</sub> at 85-90%), the phosphate industry has typically

**APPENDIX BD**  
**BEST AVAILABLE CONTROL TECHNOLOGY DETERMINATION (BACT)**

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been able to avoid having to install separate high energy, ultra high efficiency devices for BACT PM/PM<sub>10</sub> removal that might have been required if PM/PM<sub>10</sub> had been the only major pollutant involved.

Characteristic of the existing multifos scrubbing system is that the first stage of PM/PM<sub>10</sub> scrubbing occurs in the plenum spray section as the kiln gases are cooled prior to entering the crossflow scrubber. Additional PM/PM<sub>10</sub> removal occurs at the inlet of the crossflow scrubber as a result of the large bank of spray nozzles designed to prevent dust from plugging the inlet of the packed section. Although hard data on particulate removal efficiencies of crossflow scrubbers are difficult to obtain, there are literature references citing PM removal efficiencies for a single crossflow scrubber of 95% for particles 3 microns and larger and as high as 20% removal of submicron particulate. Overall PM/PM<sub>10</sub> removal efficiencies have been estimated at about 85% for applications similar to this one. By employing two 85% PM-efficient packed scrubbers in series as proposed herein, the theoretical overall PM removal efficiency will be improved to above 95% which is equivalent or perhaps slightly better than that achievable by Option 2. VE at this level should be 10% or less, justifying a VE limit of 15% which is typical for recent BACT determinations.

**SULFUR DIOXIDE (SO<sub>2</sub>)**

The top-down approach for SO<sub>2</sub> control identified the following BACT options:

1. Regenerable amine-based wet scrubbing.
2. Double-alkali wet scrubbing process.
3. Packed scrubber using caustic solution.

Regenerable amine based scrubbing recovers SO<sub>2</sub> at efficiencies above 99% and produces a salable or recyclable SO<sub>2</sub> product which makes it a suitable choice for certain applications where SO<sub>2</sub> concentrations are very high (above 8,000 ppm). A typical process is the dimethyl aniline (DMA) system which absorbs SO<sub>2</sub> into the DMA solution in a first stage absorption tower, then scrubs it with sodium carbonate solution in a second stage before third stage cleanup with dilute sulfuric acid to remove the last trace of DMA. DMA in the scrubbing solution is removed in a gravity separator and returned to the primary absorption tower. Water from the separator is used to make steam for regeneration of the primary absorber solution by driving off SO<sub>2</sub> which can be recovered or recycled depending on the situation. Final flue gas concentration is as low as 10 ppm SO<sub>2</sub>.

Amine scrubbing is commonly applied in the smelting industry where high concentrations of SO<sub>2</sub> make it technologically and economically feasible. Advantages are the very high SO<sub>2</sub> recovery and the absence of a solid waste stream. However, for SO<sub>2</sub> concentrations in the range of 700 - 1,000 ppm, as with the multifos plant, the economics of installing a process involving complex absorption,

**APPENDIX BD**  
**BEST AVAILABLE CONTROL TECHNOLOGY DETERMINATION (BACT)**

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stripping separation and recovery equipment are not cost effective. Cost estimates of \$10,000 per ton of SO<sub>2</sub> effectively rule out this option.

The system installed at the PCS Phosphates plant in Saltville, Virginia, uses a double alkali technology designed for dual removal of SO<sub>2</sub> and fluoride through reaction of soda ash or caustic soda and sodium sulfite to form sodium fluoride and sodium bisulfite. The system uses two scrubbers in series. The first is a horizontal spray baffled scrubber which removes the bulk of the pollutants, followed by a multi-port variable throat venturi operated at a pressure drop of 21-22 in.w.c. Sodium salts formed in the recovery are regenerated by treatment with lime which allows the impurities to precipitate out as calcium fluoride, calcium sulfite and calcium sulfate. A solid waste material is obtained following clarification and filtration steps. Radiant heat from the kiln is used to dry the waste before sending it to a landfill. SO<sub>2</sub> recovery is typically above 98% with this technology. Cost effectiveness for SO<sub>2</sub> control with double alkali technology is reported to be anywhere from \$4,000 per ton to \$8,000 per ton of SO<sub>2</sub> removed depending on stack gas concentration and regeneration system economics.

Caustic scrubbing has been widely applied for SO<sub>2</sub> recovery in several industries including pulp and paper manufacturing. Although very effective for removing SO<sub>2</sub> from a gas stream, caustic scrubbers generate a substantial amount of calcium sulfite waste which must be dealt with at additional cost. The waste issue can be the most important factor in selecting the best control option for a situation where the space and the means for treatment and/or disposal are not readily available. This problem does not appear to be the determining factor for a phosphate plant that already has the means to handle solid and liquid wastes.

Caustic scrubbing typically involves a countercurrent packed tower with sodium hydroxide solution (usually 50% NaOH) fed to the top of the tower. Some processes use a two-stage configuration, with strong caustic being fed to the first stage and weak caustic to the second as a polishing step. The weak solution is then used as makeup for the first stage of the scrubber. Heat of solution from the caustic makeup is removed in a heat exchanger to keep the temperature of the scrubber solutions from rising. A purge stream containing about 10% (wt.) sodium bisulfite is pumped from the first stage of the packed tower to a treatment tank where it reacts with a mixture of lime and calcium chloride before flowing to the clarifier. The calcium sulfite sludge settles out in the clarifier and can be dewatered or filtered prior to disposal. The clarifier overflow is discharged to the facility's water treatment system.

For the multifos plant, cost estimates show that caustic scrubbing provides the most cost-effective option. The approximate cost of installing three identical 98 percent efficient caustic scrubbers and associated equipment for the multifos plant is listed below:

## APPENDIX BD

### BEST AVAILABLE CONTROL TECHNOLOGY DETERMINATION (BACT)

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Caustic SO <sub>2</sub> Scrubbers (30 ft. x 7 ft dia. FRP)	\$ 980,000
Replacement Fans	275,000
New 100 ft Stack for Kiln C	100,000
Ducts	150,000
Pumps, Tanks, Piping	240,000
Instruments, Electrical	130,000
Freight & Taxes	113,000
Subtotal Equipment	\$1,988,000
Site preparation	20,000
Engineering	40,000
Contingency	300,000
Total Installed Cost	\$ 2,348,000
Operation & Maintenance (Annual Costs)	\$ 300,000
Chemicals & Handling	1,100,000
Depreciation	397,000
Other Indirect Costs	100,000
Total Annual Cost	\$ 1,897,000

Cost effectiveness =  $\$1,897,000 / 2,993 = \$634/\text{ton SO}_2 \text{ Removed}$

#### NITROGEN OXIDES (NO<sub>x</sub>)

The formation of NO<sub>x</sub> occurs in the kiln and dryer as a result of the oxidation of nitrogen in the atmosphere and, to a lesser extent, the nitrogen in the fuel. The so-called "thermal NO<sub>x</sub>" forms as a result of the high combustion zone temperature (2,700-2,800°F). Factors affecting the amount of NO<sub>x</sub> formed include residence time in the combustion zone, the oxygen level in the kiln, whether the kiln is designed to use secondary combustion air, and the heat release characteristics of the burner. Perhaps most important among these factors is the combustion temperature and the amount of excess air used by the burner. Higher excess air generally results in higher NO<sub>x</sub> emissions. Adjustment of excess air to the burner is more difficult as the grade of fuel used drops, natural gas being the easiest flame to stabilize at low excess air. As there are no technologically feasible cost-effective downstream add-on control devices for NO<sub>x</sub> emissions from this process, the BACT determination must focus on the options available for the design of the kiln and burner, such as indirect firing or low excess air burners. The applicant should be certain that the design of the new kiln is based on the lowest achievable NO<sub>x</sub> emissions. Since no NO<sub>x</sub> test data are available for the applicant's kilns, the BACT determination for NO<sub>x</sub> will be completed following the receipt of the performance test data.



**APPENDIX BD**  
**BEST AVAILABLE CONTROL TECHNOLOGY DETERMINATION (BACT)**

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The following emission limits are established employing the top-down BACT approach:

POLLUTANT	EMISSION LIMIT	LIMIT BASIS
F (Kiln A/B Stack)	4.2 lb/hr	Current limit for scrubbers
F (" C Stack)	0.36 lb/hr	0.038 lb F/ton P <sub>2</sub> O <sub>5</sub> input to kiln (BACT)
PM (" A/B Stk)	29.8 lb/hr	Current limit for scrubbers
PM (" C Stack)	14.3 lb/hr	1.50 lb/ton P <sub>2</sub> O <sub>5</sub> input to kilns (BACT)
SO <sub>2</sub> (" A/B Stack)	Min. caustic flow in lieu of limit	15 gph 50% NaOH (Resolution of past permitting)
SO <sub>2</sub> (" C Stack)	8.7 lb/hr	98% Efficient Scrubber based on 4/9/98 test
NO <sub>x</sub> (" A/B Stack)	Max. fuel usage in lieu of limit	56 MM BTU/hr maximum for each kiln
NO <sub>x</sub> (" C Stack)	To be determined following testing	Test will determine need for limit
Metals (" C Stack)	To be determined following testing	Test will determine need for limit
VE (" A/B Stack)	< 20% opacity	Current limit for scrubbers
VE (" C Stack)	15% opacity	BACT limit for scrubbers
VE ("A/B baghses.)	< 20% opacity	Current permit limit
VE ("C baghouses)	5% opacity	BACT limit for baghouses

These limits are sufficiently stringent to ensure that the expansion project, after BACT has been applied, will not be subject to the National Emission Standards for Hazardous Air Pollutants for Source Categories, 40 CFR Part 63, requiring a case-by-case Maximum Achievable Control Technology (MACT) determination as described at 40 CFR 63.40-44.

**COMPLIANCE**

Compliance with the fluoride limit shall be in accordance with the EPA Reference Method 13A or 13B as contained in 40 CFR 60, Appendix A.

Compliance with the PM/PM<sub>10</sub> limit shall be in accordance with the EPA Reference Method 5 as contained in 40 CFR 60, Appendix A.

Compliance with the SO<sub>2</sub> limit shall be in accordance with the EPA Reference Method 8 as contained in 40 CFR 60, Appendix A.

Compliance with the NO<sub>x</sub> limit shall be in accordance with the EPA Reference Method 7E as outlined in 40 CFR 60, Appendix A.

Compliance with the visible emission limit shall be in accordance with the EPA Reference Method 9 as contained in 40 CFR 60, Appendix A.

**APPENDIX BD**  
**BEST AVAILABLE CONTROL TECHNOLOGY DETERMINATION (BACT)**

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**DETAILS OF THE ANALYSIS MAY BE OBTAINED BY CONTACTING:**

John Reynolds, Permit Engineer  
Department of Environmental Protection  
Bureau of Air Regulation - MS 5505  
2600 Blair Stone Road  
Tallahassee, Florida 32399-2400

Recommended By:



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

9/10/98

Date:

Approved By:



Howard L. Rhodes, Director  
Division of Air Resources Management

9/10/98

Date:

**APPENDIX CSC**  
EMISSION UNIT(S) COMMON SPECIFIC CONDITIONS

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**SUBSECTION 1.0 CONSTRUCTION REQUIREMENTS**

- 1.1 Applicable Regulations: Unless otherwise indicated in this permit, the construction and operation of the subject emission unit(s) 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 Florida Administrative Code Chapters 62-4, 62-103, 62-204, 62-210, 62-212, 62-213, 62-296, 62-297; and the applicable requirements of the Code of Federal Regulations Section 40, Part 60, adopted by reference in the Florida Administrative Code regulation [Rule 62-204.800 F.A.C.]. Issuance of this permit does not relieve the facility owner or operator from compliance with any applicable federal, state, or local permitting requirements or regulations. [Rule 62-210.300, F.A.C.]

**SUBSECTION 2.0 EMISSION LIMITING STANDARDS**

- 2.1 General Particulate Emission Limiting Standards. General Visible Emissions Standard: Except for emissions units that are subject to a particulate matter or opacity limit set forth or established by rule and reflected by conditions in this permit, no person shall cause, let, permit, suffer, or allow to be discharged into the atmosphere the emissions of air pollutants from any activity, the density of which is equal to or greater than that designated as Number 1 on the Ringelmann Chart (20% opacity). [Rule 62-296-320(4)(b)1, F.A.C.]
- 2.2 Unconfined Emissions of Particulate Matter [Rule 62-296.320(4)(c), F.A.C.]
- (a) The owner or operators shall not cause, let, permit, suffer or allow the emissions of unconfined particulate matter from any source whatsoever, including, but not limited to, vehicular movement, transportation of materials, construction, alteration, demolition or wrecking, or industrially related activities such as loading, unloading, storing or handling, without taking reasonable precautions to prevent such emission.
- (b) Any permit issued to a facility with emissions of unconfined particulate matter shall specify the reasonable precautions to be taken by that facility to control the emissions of unconfined particulate matter.
- (c) Reasonable precautions include the following:
- Paving and maintenance of roads, parking areas and yards.
  - Application of water or chemicals to control emissions from such activities as demolition of buildings, grading roads, construction, and land clearing.
  - Application of asphalt, water, oil, chemicals or other dust suppressants to unpaved roads, yards, open stock piles and similar activities.
  - Removal of particulate matter from roads and other paved areas under the control of the owner or operator of the facility to prevent reentrainment, and from buildings or work areas to prevent particulate from becoming airborne.

**APPENDIX CSC**  
EMISSION UNIT(S) COMMON SPECIFIC CONDITIONS

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- Landscaping or planting of vegetation.
- Use of hoods, fans, filters, and similar equipment to contain, capture and/or vent particulate matter.
- Confining abrasive blasting where possible.
- Enclosure or covering of conveyor systems.

*NOTE: Facilities that cause frequent, valid complaints may be required by the Permitting Authority to take these or other reasonable precautions. In determining what constitutes reasonable precautions for a particular source, the Department shall consider the cost of the control technique or work practice, the environmental impacts of the technique or practice, and the degree of reduction of emissions expected from a particular technique or practice.*

2.3 General Pollutant Emission Limiting Standards: [Rule 62-296.320, F.A.C.]

- (a) The owner or operator shall not store, pump, handle, process, load, unload or use in any process or installation, volatile organic compounds or organic solvents without applying known and existing vapor emission control devices or systems.
- (b) No person shall cause, suffer, allow or permit the discharge of air pollutants which cause or contribute to an objectionable odor.

*NOTE: An objectionable odor is defined as any odor present in the outdoor atmosphere which by itself or in combination with other odors, is or may be harmful or injurious to human health or welfare, which unreasonably interferes with the comfortable use and enjoyment of life or property, or which creates a nuisance. [F.A.C. 62-210.200(198)]*

**SUBSECTION 3.0 OPERATION AND MAINTENANCE**

3.1 Changes/Modifications: The owner or operator shall submit to the Permitting Authority(s), for review any changes in, or modifications to: the method of operation; process or pollution control equipment; increase in hours of operation; equipment capacities; or any change which would result in an increase in potential/actual emissions. Depending on the size and scope of the modification, it may be necessary to submit an application for, and obtain, an air construction permit prior to making the desired change. *Routine maintenance of equipment will not constitute a modification of this permit.* [Rule 62-4.030, 62-210.300 and 62-4.070(3), F.A.C.]

3.2 Plant Operation - Problems: If temporarily unable to comply with any of the conditions of the permit due to breakdown of equipment or destruction by fire, wind or other cause, the owner or operator shall notify the Permitting Authority as soon as possible, but at least within (1) working day, excluding weekends and holidays. The notification shall include: pertinent information as to the cause of the problem; the steps being taken to correct the problem and prevent future recurrence; and where applicable, the owner's intent toward reconstruction of destroyed facilities. Such notification does not release the permittee from any

**APPENDIX CSC**  
EMISSION UNIT(S) COMMON SPECIFIC CONDITIONS

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liability for failure to comply with the conditions of this permit and the regulations. [Rule 62-4.130, F.A.C.]

3.3 Circumvention: The owner or operator shall not circumvent the air pollution control equipment or allow the emission of air pollutants without this equipment operating properly. [Rules 62-210.650, F.A.C.]

3.4 Excess Emissions Requirements [Rule 62-210.700, F.A.C.]

(a) Excess emissions resulting from start-up, shutdown or malfunction of these emissions units shall be permitted providing (1) best operational practices to minimize emissions are adhered to and (2) the duration of excess emissions shall be minimized, but in no case exceed two hours in any 24 hour period unless specifically authorized by the Permitting Authority office for longer duration. [Rule 62-210.700(1), F.A.C.]

(b) Excess emissions that are caused entirely or in part by poor maintenance, poor operation, or any other equipment or process failure that may reasonably be prevented during start-up, shutdown, or malfunction shall be prohibited. [Rule 62-210.700(4), F.A.C.]

(c) In case of excess emissions resulting from malfunctions, the owner or operator shall notify Permitting Authority within one (1) working day of: the nature, extent, and duration of the excess emissions; the cause of the problem; and the corrective actions being taken to prevent recurrence. [Rule 62-210.700(6), F.A.C.]

3.5 Operating Procedures: Operating procedures shall include good operating practices and proper training of all operators and supervisors. The good operating practices shall meet the guidelines and procedures as established by the equipment manufacturers. All operators (including supervisors) of air pollution control devices shall be properly trained in plant specific equipment. [Rule 62-4.070(3), F.A.C.]

#### SUBSECTION 4.0 MONITORING OF OPERATIONS

4.1 Determination of Process Variables

(a) The permittee shall operate and maintain equipment and/or instruments necessary to determine process variables, such as process weight input or heat input, when such data is needed in conjunction with emissions data to determine the compliance of the emissions unit with applicable emission limiting standards.

(b) Equipment and/or instruments used to directly or indirectly determine such process variables, including devices such as belt scales, weigh 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.]

## APPENDIX CSC

### EMISSION UNIT(S) COMMON SPECIFIC CONDITIONS

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#### SUBSECTION 5.0 TEST REQUIREMENTS

- 5.1 Test Performance Within 60 days after achieving the maximum production rate at which these emission units will be operated, but not later than 180 days after initial startup and annually thereafter, the owner or operator of this facility shall conduct performance test(s) pursuant to 40 CFR 60.8, Subpart A, General Provisions and 40 CFR 60, Appendix A. No other test method shall be used unless approval from the Department has been received in writing. Unless otherwise stated in the applicable emission limiting standard rule, testing of emissions shall be conducted with the emission unit(s) operating at permitted capacity pursuant to Rule 62-297.310(2), F.A.C. [Rules 62-204.800, 62-297.310, 62-297.400, 62-297.401, F.A.C.]
- 5.2 Test Procedures shall meet all applicable requirements of the Florida Administrative Code Chapter 62-297. [Rule 62-297.310, F.A.C.]
- 5.3 Test Notification: The owner or operator shall notify the Permitting Authority in writing at least *(30) days* (initial) and *15 days* (annual) prior to each scheduled compliance test to allow witnessing. The notification shall include the compliance test date, place of such test, the expected test time, the facility contact person for the test, and the person or company conducting the test. The (30) or (15) day notification requirement may be waived at the discretion of the Department. Likewise, if circumstances prevent testing during the test window specified for the emission unit, the owner or operator may request an alternate test date before the expiration of this window. [Rule 62-297.310 and 40 CFR 60.8, F.A.C.]
- 5.4 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 Rule 62-204, 62-210, 62-212, 62-296 and 62-297, F.A.C. or in a permit issued pursuant to those rules is being violated, it may require the owner or operator of the facility to conduct compliance tests which identify the nature and quantity of pollutant emissions from the emissions units and to provide a report on the results of said tests to the Permitting Authority. [Rule 62-297.310(7)(b), F.A.C.]
- 5.5 Stack Testing Facilities: The owner or operator shall install stack testing facilities in accordance with Rule 62-297.310(6), F.A.C..
- 5.6 Exceptions and Approval of Alternate Procedures and Requirements: An Alternate Sampling Procedure (ASP) may be requested from the Bureau of Air Monitoring and Mobile Sources of the Florida Department of Environmental Protection in accordance with the procedures specified in Rule 62-297.620, F.A.C.
- 5.7 Operating Rate During Testing: Unless otherwise stated in the applicable emission limiting standard rule, testing of emissions shall be conducted with the emissions unit operation at permitted capacity. Permitted capacity is defined as 90 to 100 percent of the maximum operation rate allowed by the permit. If it is impracticable to test at permitted capacity, an emissions unit may be tested at less than the minimum permitted capacity; in this case, subsequent emissions unit operation is limited to 110 percent of the test load until a new

**APPENDIX CSC**  
EMISSION UNIT(S) COMMON SPECIFIC CONDITIONS

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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. [Rule 62-297.310(2) and (3), F.A.C.]

**SUBSECTION 6.0 REPORTS AND RECORDS**

- 6.1 Duration: All reports and records required by this permit shall be kept for at least (5) years from the date the information was recorded. [Rule 62-4.160(14)(b), F.A.C.]
- 6.2 Emission Compliance Stack Test Reports:
- (a) A *test report* indicating the results of the required compliance tests shall be filed with the Permitting Authority as soon as practical, but no later than 45 days after the last sampling run is completed. [Rule 62-297.310(8), F.A.C.]
  - (b) The *test report* shall provide sufficient detail on the tested emission unit and the procedures used to allow the Department to determine if the test was properly conducted and if the test results were properly computed. At a minimum, the test report shall provide the applicable information listed in **Rule 62-297.310(8), F.A.C.**
- 6.3 Excess Emissions Report: If excess emissions occur, the owner or operator shall notify the Permitting Authority within (1) working day of: the nature, extent, and duration of the excess emissions; the cause of the excess emissions; and the actions taken to correct the problem. In addition, the Department may request a written summary report of the incident. Pursuant to the New Source Performance Standards, excess emissions shall also be reported in accordance with 40 CFR 60.7, Subpart A. [Rules 62-4.130 and 62-210.700(6), F.A.C.]
- 6.4 Annual Operating Report for Air Pollutant Emitting Facility: Before March 1st of each year, the owner or operator shall submit to the Permitting Authority this required report [DEP Form No. 62-210.900(5)], which summarizes operations for the previous calendar year. [Rule 62-210.370(3), F.A.C.]

**SUBSECTION 7.0 OTHER REQUIREMENTS**

- 7.1 Waste Disposal: The owner or operator shall treat, store, and dispose of all liquid, solid, and hazardous wastes in accordance with all applicable Federal, State, and Local regulations. This air pollution permit does not preclude the permittee from securing any other types of required permits, licenses, or certifications.

**APPENDIX GC**  
**GENERAL PERMIT CONDITIONS [F.A.C. 62-4.160]**

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- G.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.
- G.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 or exhibits, specifications, or conditions of this permit may constitute grounds for revocation and enforcement action by the Department.
- G.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.
- G.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.
- G.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.
- G.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.
- G.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.
- G.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.



**APPENDIX GC**  
**GENERAL PERMIT CONDITIONS [F.A.C. 62-4.160]**

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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.

- G.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.
- G.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.
- G.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.
- G.12 This permit or a copy thereof shall be kept at the work site of the permitted activity.
- G.13 This permit also constitutes:
- (a) Determination of Best Available Control Technology (X);
  - (b) Determination of Prevention of Significant Deterioration (X); and
  - (c) Compliance with New Source Performance Standards ( )
- G.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.
- G.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.

Florida Department of  
Environmental Protection

Memorandum

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TO: Howard L. Rhodes

THROUGH: Clair Fancy  
Al Linero *CLF 9/10*

FROM: John Reynolds *JR*

DATE: September 10, 1998

SUBJECT: Approval of Construction Permit No. 1050059-024-AC (PSD-FL-244)  
IMC-Agrico Company

Attached is a construction permit that will allow the IMC-Agrico Company to increase the processing capacity of the Multifos Plant at its New Wales phosphate complex in Mulberry from 30 to 55 tons per hour by installing a third phosphate defluorination kiln. BACT emission controls required by this permit for the new kiln will be representative of the very best equipment available.

This permit involved a significant effort by BAR staff and the company to reach agreement on installing additional emission controls on the two existing kilns which had doubled in capacity over the last seventeen years without undergoing PSD and BACT review. The agreement reached on the existing kilns has been incorporated into the permit and serves to mitigate past permitting decisions at the district level. The IMC-Agrico Company is to be commended for its willingness to take corrective action in a situation that could have been contested, perhaps successfully. Hopefully, this excellent outcome for the environment may be looked upon as an example for other permittees to follow. It truly represents a win-win situation for the company and the Department.

I recommend your approval and signature.

JR/kt