



# Department of Environmental Protection

Lawton Chiles  
Governor

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

Virginia B. Wetherell  
Secretary

December 31, 1997

CERTIFIED MAIL - RETURN RECEIPT REQUESTED

Mr. E. M. Newberg  
Vice President and General Manager  
IMC-Agrico Company  
P.O. Box 2000  
Mulberry, Florida 33860

Re: DEP File No. 1050059-024-AC (PSD-FL-244)  
New Wales Multiphos Plant

Dear Mr. Newberg:

The Department has received the attached comments from the Fish and Wildlife Service by facsimile. These comments are based on their technical review of IMC-Agrico's application received on December 1, 1997 for new equipment to be installed in the Multiphos Plant. Please respond to their comments concerning the net emissions increases calculations and the Best Available Control Technology (BACT) analysis. This additional information is required to process the application.

The Department will resume processing this application after receipt of the requested information. If you have any questions on this matter, please call Cleve Holladay or John Reynolds at 850/488-1344.

Sincerely,

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

AAL/ch

Enclosures

cc: Bill Thomas, SWD  
Joe King, Polk Co.  
John Koogler, K&A  
Brian Beals, EPA  
John Bunyak, NPS

*"Protect, Conserve and Manage Florida's Environment and Natural Resources"*



**U.S. FISH & WILDLIFE SERVICE  
AIR QUALITY BRANCH**

P.O. BOX 25287, Denver, CO 80225-0287

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**FACSIMILE COVER SHEET**

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Date: 12/29

Telephone: (303) 969-2617

Fax: (303) 969-2822

To: Cleve Holladay

From: Ellen Porter

Subject: IMC - tech review document -  
incorporates Don's comments

Number of Pages: 4  
(Including this cover sheet)

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Office Location: 7333 West Jefferson Ave, Suite 450, Lakewood, CO 80235

**Technical Review of Prevention of Significant Deterioration Permit Application  
for a Rotary Kiln at IMC-Agrico Company's Multifos Plant  
Polk County, Florida**

by

**Air Quality Branch, Fish and Wildlife Service – Denver  
December 29, 1997**

IMC-Agrico Company is proposing to install an additional rotary kiln at its New Wales phosphate chemical fertilizer manufacturing facility near Mulberry, Florida (Polk County). The kiln will calcine phosphate rock, soda ash, and phosphoric acid at high temperatures to produce an animal feed supplement. There are two existing kilns at the facility and the addition of the new kiln will significantly increase the production of the Multifos Plant (from a 30 ton per hour (tph) raw material feed rate to 55 tph raw material feed rate). The plant is located 102 km southeast of Chassahowitzka Wilderness, a Class I air quality area administered by the U.S. Fish and Wildlife Service. The project will result in significant increases in emissions of fluoride (F), fine particulate matter (PM-10), and sulfur dioxide (SO<sub>2</sub>). Emissions (in tons per year – TPY) are summarized below.

POLLUTANT	EMISSIONS INCREASE (TPY)
SO <sub>2</sub>	185
PM-10	124
F	15.3

We do not expect this project to significantly affect air quality or air quality related values at Chassahowitzka Wilderness. However, we have the following questions and concerns regarding the project.

**Net Emissions Increases Calculations**

IMC has included in its calculations the increases in emissions that would occur from the existing dryer due to its increased utilization to feed the new kiln. However, IMC has not considered the effect of the proposed project upon other existing emission units at the IMC facility. For example, the new kiln would require the increased production of phosphoric acid, resulting in increased fluoride emissions. In addition, production of phosphoric acid typically requires sulfuric acid and phosphate rock. Therefore, the SO<sub>2</sub> and PM-10 emissions that result from production and use of these substances at IMC should be included. For example, the additional 83,220 tons per year (TPY) of phosphoric acid required for the new kiln would also require the production of almost 100,000 TPY of sulfuric acid. If SO<sub>2</sub> emissions are limited to 4.0 lb/ton (New Source Performance Standard), the resulting SO<sub>2</sub> emissions would approach 200 TPY.

**Best Available Control Technology (BACT) Analysis**

IMC proposes to use a packed bed scrubber, using process water and alkaline slurry, to control

fluoride emissions from the kiln. Although this technology represents BACT for this type of process, no control efficiency is proposed. Instead, IMC proposes to meet the State's limit of 0.37 lb fluoride per ton of phosphoric acid input for existing sources. We suggest that FDEP include a limit requiring that the scrubber demonstrate 99.9% fluoride control efficiency. This level of control is reflective of that required by the permit issued by Florida to Farmland Hydro in 1992 for a phosphate fertilizer process, and would insure that the scrubber is operated to its capabilities.

#### Air Quality Analysis

The results of the air quality analysis indicate that the project will not contribute significantly to consumption of the Class I increments for SO<sub>2</sub> and PM-10. This analysis would, of course, be incorrect if FDEP determines that the net emissions increases should be adjusted (see above).

#### Air Quality Related Values (AQRV) Analysis

IMC analyzed potential impacts to vegetation, soils, and wildlife in Chassahowitzka Wilderness. We agree that the potential for impacts to these AQRVs is low because of the distance of the project and the types and amounts of emissions.

IMC conducted both a VISCREEN analysis, to assess potential visible plume impacts, and a regional haze analysis. Both analyses predicted that this project would have a low potential to affect visibility at Chassahowitzka. However, we would like to clarify several points regarding these analyses. Please note that we have also provided this clarification in recent letters to your department (re: Piney Point Phosphates and Farmland Hydro).

First, only sources located less than 50 km from a Class I area should perform a plume impact analysis (VISCREEN). Plumes do not remain coherent beyond 50 km. Sources 50 km or more from a Class I area should perform a regional haze analysis. The attached guidance document, "Interim Visibility Modeling Guidance for Sources Locating or Expanding Near Chassahowitzka Wilderness, Florida," discusses visibility analyses in more detail.

Please note in the attached visibility guidance document that all sources should compare their contribution to regional haze to the screening level of 0.5 deciview. If their predicted impacts are less than or equal to 0.5 deciview, the impact is considered insignificant and no further analysis is needed. If predicted impacts are greater than 0.5 deciview, the applicant should conduct a cumulative modeling analysis including proposed emissions and all other increment-consuming sources. If the cumulative analysis predicts impacts less than or equal to 1.0 deciview, the impact is considered insignificant and no further analysis is needed. If cumulative impacts are greater than 1.0 deciview, significant haze impacts are possible and FWS will make a case-by-case adverse impact determination regarding the proposed project, considering the frequency, magnitude, and duration of impacts. Because IMC's maximum predicted regional haze impact (0.2 deciview) was less than the screening level of 0.5 deciview, no further analysis is required.

In addition to the attached visibility guidance document, our office is compiling a more detailed and comprehensive document addressing visibility analyses that will be available in early 1998.

Contact: Ellen Porter, Air Quality Branch (303) 969-2617.



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AIR QUALITY BRANCH**

P.O. BOX 25287, Denver, CO 80225-0287

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**FACSIMILE COVER SHEET**

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Date: 12/29

Telephone: (303) 969-2617

Fax: (303) 969-2822

To: Cleve Holladay

From: Ellen Porter

Subject: IMC

Number of Pages: 2  
(Including this cover sheet)

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Office Location: 7333 West Jefferson Ave, Suite 450, Lakewood, CO 80235

**MEMORANDUM**

**To:** Ellen Porter  
**From:** Don Shepherd  
**Subject:** IMC-Agrico BACT Review  
**Date:** December 29, 1997

IMC-Agrico proposes to add a third kiln to its New Wales facility to calcine phosphate rock for the production of an animal feed supplement. Equipment to be added would also include a cooler and additional screens and mills for product sizing. IMC-Agrico's application is based on the premise that it triggers regulations for the Prevention of Significant Deterioration (PSD) of air quality for fluorides, particulate matter, and sulfur dioxide (SO<sub>2</sub>). Any pollutant subject to PSD must be controlled through the use of Best Available Control Technology (BACT).

One overarching issue that must be addressed is the effect of the proposed project upon other existing emission units at this source. Although IMC-Agrico has quantified the increases in emissions that occur at the existing dryer due to its utilization to feed the new kiln, it should also include the increase in emissions that would occur at the phosphoric and sulfuric acid plants that also supply materials to the new kiln. Because the new kiln will require the production of additional phosphoric acid to supply its input, the resulting increase in fluorides must be considered. Furthermore, because production of more phosphoric acid typically requires the use of more sulfuric acid and phosphate rock, the SO<sub>2</sub> and PM emissions that result from production and use of these substances at this source must be included. For example, the additional 83,220 tons per year (TPY) of phosphoric acid required for the new kiln will also require the production of almost 100,000 TPY of sulfuric acid. If SO<sub>2</sub> emissions are limited to 4.0 lb/ton (New Source Performance Standard), the resulting SO<sub>2</sub> emissions could approach 200 TPY.

Although the control technology proposed, a packed bed scrubber using process water and alkaline slurry, represents BACT for this type of process, no control efficiency is proposed. Instead of simply defaulting to the state's limit of 0.37 lb fluoride per ton of phosphoric acid input for existing sources, a limit requiring that the scrubber demonstrate 99.9% fluoride control efficiency should be included. This level of control is reflective of that required by the permit issued by Florida to Farmland Hydro in 1992 for a phosphate fertilizer process, and would insure that the scrubber is operated to its capabilities.



**U.S. FISH & WILDLIFE SERVICE  
AIR QUALITY BRANCH**

P.O. BOX 25287, Denver, CO 80225-0287

**FACSIMILE COVER SHEET**

Date: 12/11

Telephone: (303) 969-2617

Fax: (303) 969-2822

To: Cleve Holladay

From: Ellen Porter

Subject: Interim Visib. Guidance - Visib gurus (Notar, Vimont, etc.) are developing more detailed paper to be released in late Jan. - Feb.

Number of Pages:

(Including this cover sheet)

2

Office Location: 7333 West Jefferson Ave, Suite 450, Lakewood, CO 80235



John -  
would you review  
this?  
gee

**Interim Visibility Modeling Guidance  
For Sources Locating or Expanding Near  
Chassahowitzka Wilderness, Florida  
December 1997**

This Interim Visibility Modeling Guidance Document has been developed for use by PSD permit applicants seeking to locate or expand near Chassahowitzka Wilderness, a Class I area administered by the U.S. Fish and Wildlife Service (FWS). A more detailed, comprehensive guidance document will be available in early 1998.

Applicants should assume a background visual range of 65 km for Chassahowitzka Wilderness.

Sources less than 50 km from a Class I area:

II II Sources less than 50 km from a Class I area should perform an analysis to assess the potential for visible plumes from their emissions at the Class I area. The recommended models are VISCREEN (Levels 1 and 2) as the screening model and PLUVUE as the more refined model. If the screening or refined modeling predicts an impact less than a delta E of 2.0 and a contrast of 0.05, no plume impact is expected and no further analysis is required. If the modeling predicts an impact equal to or greater than the 2.0 or 0.05 values, the potential for plume impacts is significant and the FLM will determine on a case-by-case basis whether or not those impacts would be adverse, considering predicted frequency, magnitude, duration, and other factors.

Sources greater than or equal to 50 km from a Class I area:

Sources greater than or equal to 50 km from a Class I area should perform an analysis to assess the potential for a significant increase in uniform (i.e., regional) haze in the Class I area due to the source's emissions. The source may choose to use a screening model (e.g., ISC) or a more refined model (e.g., Mesopuff or Calpuff). If the predicted impact is less than or equal to 0.5 deciview, the impact is considered insignificant and no further analysis is needed. If the predicted impact is greater than 0.5 deciview, the applicant should conduct a cumulative modeling analysis including THE NEW SOURCE proposed emissions and all other increment-consuming emissions. If the cumulative analysis predicts an impact less than or equal to 1.0 deciview, the impact is considered insignificant and no further analysis is needed. If the cumulative impact is greater than 1.0 deciview, a significant increase in haze is possible and FWS will make a case-by-case adverse impact determination regarding the proposed project, considering the predicted frequency, magnitude, and duration of impacts.

Contact: Bud Rolofson, FWS Air Quality Branch (303) 969-2804

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- Complete items 3, 4a, and 4b.
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3. Article Addressed to:  
 Mr. E. M. Newberg, VP & GM  
 IMC-Agico  
 P O Box 2000  
 Mulberry, IA 33860

4a. Article Number  
 P 265 659 275

4b. Service Type  
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7. Date of Delivery  
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X *Eric Howard*

PS Form 3811, December 1994

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PS Form 3800, April 1995