



**U.S. FISH & WILDLIFE SERVICE  
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**FACSIMILE COVER SHEET**

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

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(Including this cover sheet)

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**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.

<b>POLLUTANT</b>	<b>EMISSIONS INCREASE (TPY)</b>
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.

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