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KA 124-01-03

January 25, 2002

Mr. Syed Arif, P.E.
Florida Department of
Environmental Protection
Twin Towers Office Building
2600 Blair Stone Road
Tallahassee, FL 32399-2400

Subject: IMC Phosphates MP, Inc. (New Wales)
Additional Information - Sulfuric Acid Production Increase
DEP File No. 1050059-036-AC, PSD-FL-325

Dear Mr. Arif:

This is in response to FDEP's letter dated December 26, 2001, requesting additional information on the above referenced project.

The scope of the application is herein revised, based on discussions with IMC, FDEP and EPA staff. The proposed project now includes Sulfuric Acid Plant Nos. 1, 2 and 3. Sulfuric Acid Plant Nos. 4 and 5 are hereby withdrawn from the proposed project.

The issues raised in your letter are addressed in line with the change in scope of the application. The issues are addressed in the order they were raised in your letter.

1. The revised annual impact modeling using actual sulfur dioxide emissions data, will be submitted under separate cover, as discussed with Mr. Cleve Holladay.

2. The growth-related ambient air impacts will be submitted along with information on Item 1.

3. The US Fish and Wildlife Service issues will be addressed along with information on Item 1.

4. The historical information on sulfur dioxide emission rates in lb/ton acid, and sulfuric acid production rates, is presented in Attachment 1, in the requested format. Please note that the turnaround cycles are apparent from the production charts.

5. As turnaround activities were discussed in great detail during the January 16, 2002 meeting between IMC, K&A, FDEP and EPA staff, the issue is discussed in general terms herein.

There have been no modifications done to any of the subject plants during turnarounds. A typical turnaround on a sulfuric acid plant consists of the following maintenance activities:

- Conduct a detailed maintenance inspection after the plant is shutdown.
- Screen and replenish catalyst beds, as necessary.
- Repair and/or replace corroded/deteriorated pipes, valves, pumps, ducting, tanks, etc.
- Repair and/or replace corroded/deteriorated heat exchange components.
- For moving components, apply oil and grease, etc., as necessary.

Specific maintenance activity during a turnaround can vary depending on the physical condition and maintenance requirements of a given plant. It should be noted that while most maintenance items can be anticipated, some items may only become apparent after a detailed maintenance inspection which is conducted after a plant is shutdown for maintenance.

It is our understanding that detailed information on this issue is no longer required for the technical review based on the change in the scope of the proposed project, as discussed with FDEP and EPA staff, and addressed in Item 16.

6. The available information on the requested acid mist emissions is presented in the report submitted in support of the PSD application in Table 3-1 and Appendix A.

7. The additional sulfuric acid produced as a result of the proposed project will offset current purchases. Consequently, it will not affect the independently operating production units downstream. An accounting summary of past and proposed sulfuric acid utilization for the facility, is presented in Attachment 2.

8. The actual production rate identified on Table 3-1 in the application should have been under the reference of "allowable". The historical actual production rates are presented in Attachment 1, in the format requested by FDEP.

9. The proposed production rate, of each sulfuric acid plant addressed in this application, is 3400 tpd. This rate will be achieved after completion of construction, which includes modification of the converter of each plant.

10. The apparent discrepancy is likely due to a typographical error. For the purposes of this technical evaluation, corrected information is presented in Attachment 1. Revised PSD applicability calculations are presented in Attachment 4. Copies of AORs are not enclosed in order to avoid redundancy of data already provided herein, especially in light of the specific sulfur dioxide emissions presentation format requested by FDEP in Attachment 1.

11. The entire interpass tower will be pre-fabricated during the months leading up to the turnaround. During the actual turnaround, which will be no longer than a typical turnaround, the tower will simply be replaced. The replacement tower will be similar in size. The foregoing response is unlikely to affect the technical review of the proposed project given the

change in the scope of the application based on the outcome of the January 16 meeting. It is our understanding that FDEP considers the proposed interpass tower replacement as a modification. While not necessarily agreeing with the Department's opinion on this matter, IMC does not intend to challenge FDEP's position. IMC will diligently pursue completing the technical review of the proposed project in order to obtain the necessary construction permit in a timely manner.

12. The discussion in the permit application regarding historical concentration levels of sulfur dioxide in the gas stream were meant to reflect changes in the overall industry over the years. As discussed in the meeting with FDEP and EPA staff, IMC operates its plants in the sulfur dioxide concentration range of 11.5-12 percent based on available records since the time of the previous PSD project.

13. The catalyst changes were included as part of the previous PSD project for the sulfuric acid plants. The effect of only the catalyst change on the plant production is difficult to assess as several items were involved in that project. In any case, it is our understanding that this issue will not affect the technical review of this project given the change in the scope of the proposed project.

14. The cost analysis for ammonia scrubbing is presented in Attachment 3. Based on the projected costs and the potential environmental and worker safety liabilities associated with ammonia scrubbing, it is rejected as BACT.

15. The dates of commencement of construction for the proposed maintenance activities associated with the plants included in this application are presented under separate cover.

16. Based on the outcome of the January 16 meeting with FDEP and EPA staff, the scope of the proposed project has been revised. Consequently, it is our understanding that a response to this issue, to help distinguish between routine and non-routine maintenance, is no longer required for the technical evaluation of the proposed project.

    The scope of the application is revised as follows:

    - The proposed project now includes Sulfuric Acid Plant Nos. 1, 2 and 3. Sulfuric Acid Plant Nos. 4 and 5 are hereby withdrawn from the proposed project. It is our understanding that FDEP and EPA staff are in agreement with this approach given the independent nature of the plants and the unique maintenance schedules identified under separate cover.

    - The technical determination for the revised scope of the proposed project has been simplified as IMC will voluntarily accept the imposition of BACT-based emission limits upon modification of a given plant at the first scheduled turnaround identified under separate cover.

- IMC is aware of, and will comply with, the state and federal rule provisions associated with BACT review for phased construction projects.

- It is our understanding from discussions with FDEP staff that the entire application need not be revised and re-submitted as the above changes result in simply removing sections of the application addressing Sulfuric Acid Plant Nos. 4 and 5.

- The revised net emissions increases for the proposed project are presented in Attachment 4.

If you have any questions, please call Pradeep Raval or me.

Very truly yours,

KOOGLER & ASSOCIATES

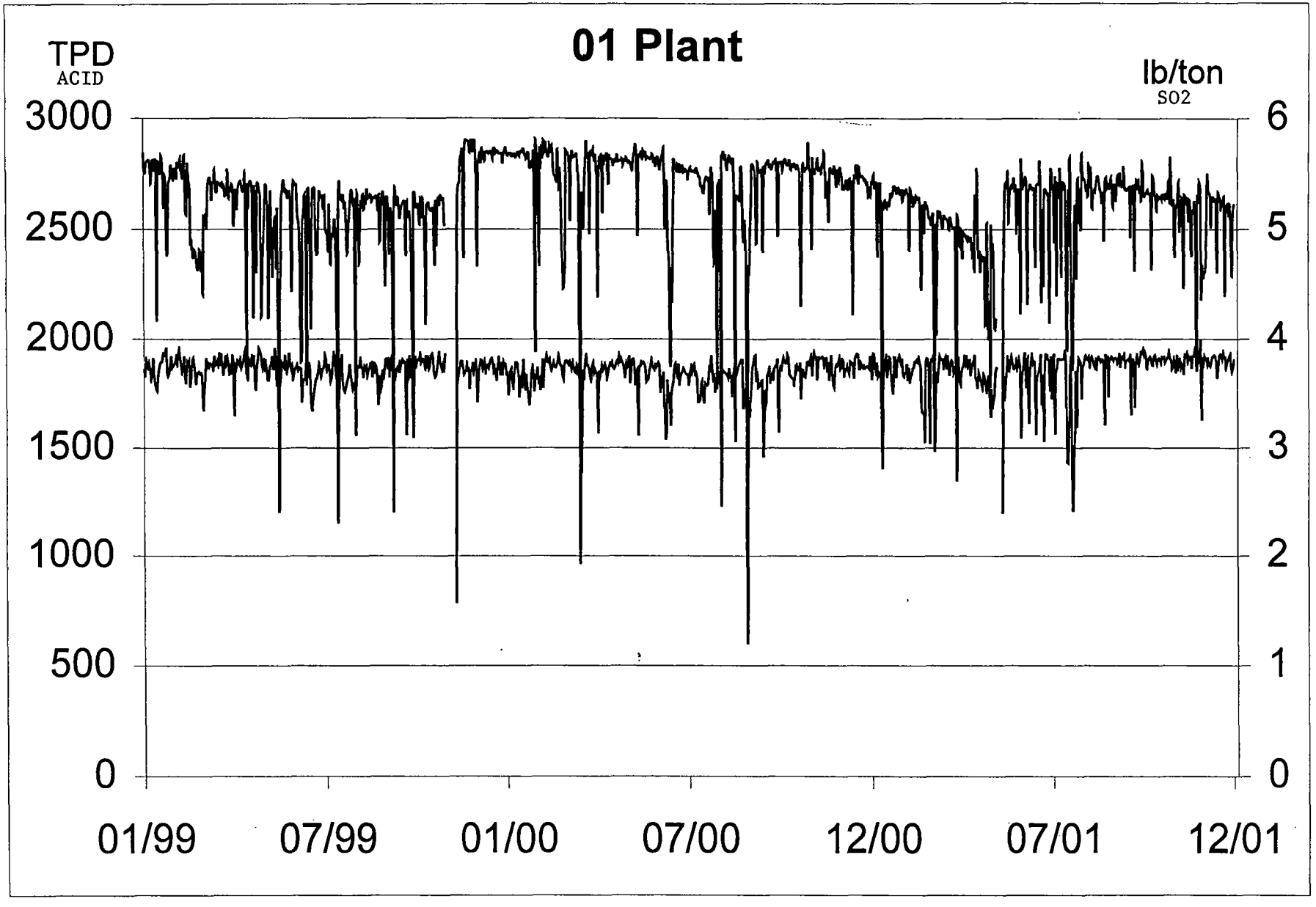
John B. Koogler, Ph.D., P.E.

JBK:par.
encl.

c: C. Dave Turley, IMC
M. Daigle, IMC
C. Halladay
B. Thomas, SWD
B. Worley, EPA
G. Bunyak, NPS

ATTACHMENT 1

HISTORICAL SULFUR DIOXIDE EMISSIONS AND
SULFURIC ACID PRODUCTION DATA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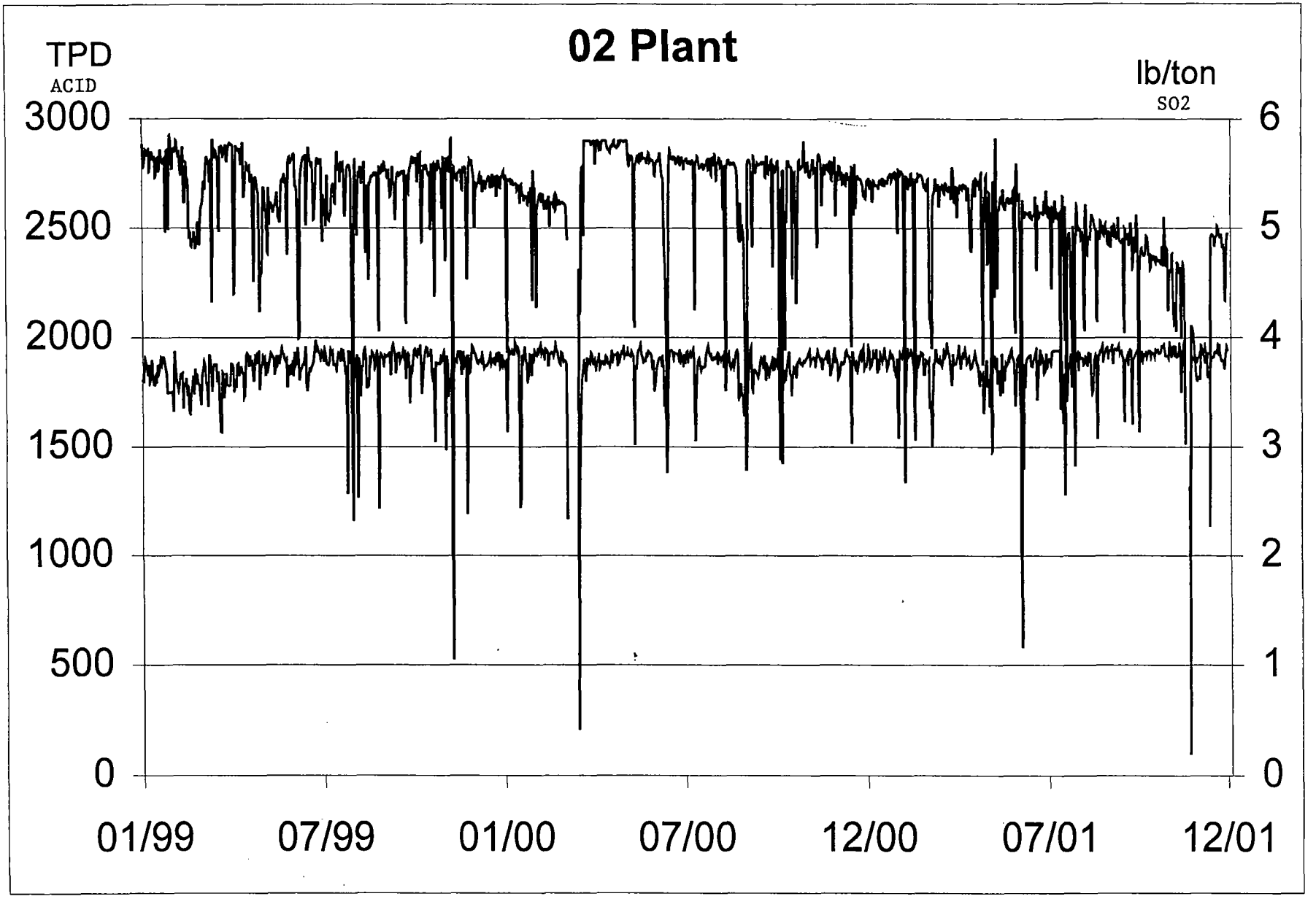
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lb/ton
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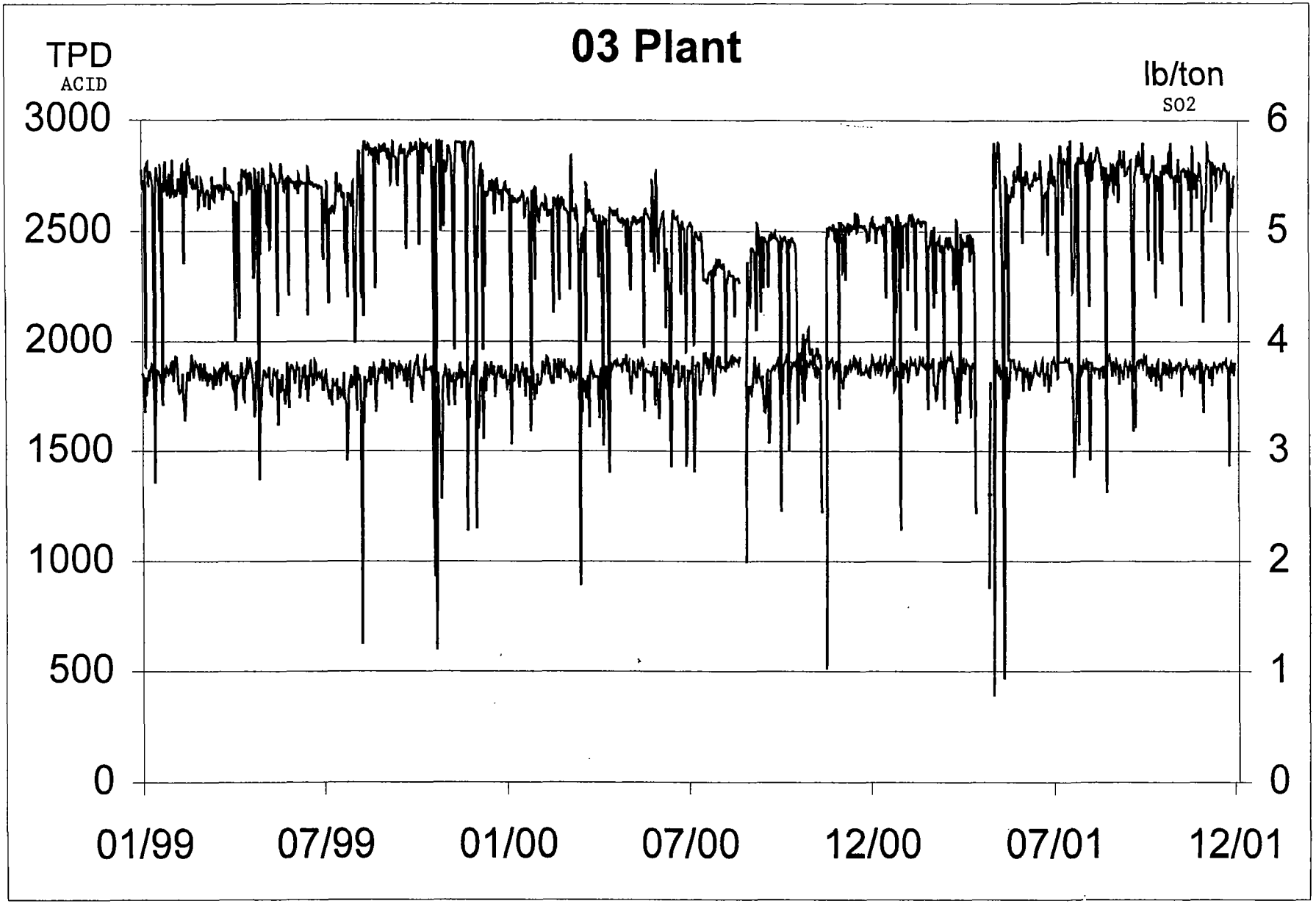
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ACID
lb/ton
SO2
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01/99
07/99
01/00
07/00
12/00
07/01
12/01

ATTACHMENT 2

SULFURIC ACID BALANCE AT NEW WALES

The following sulfuric acid balance for the New Wales facility is based on 2001 records just recently compiled:

Permitted Production	= 5,292,500 tons
Actual Production	= 4,564,927 tons
Operation Factor	= 4,564,927 / 5,292,500 = 0.86
Acid Purchased	= 377,105 tons
Additional Production Capacity	= (3400 – 2900) tpd x 3 plants x 365 days/yr = 547,500 tons
Projected Additional Production	= 547,500 tons x 0.86 (operation factor) = 470,850 tons

This reflects a conservative eventual sulfuric acid balance as the three plants will not increase production at once and loss of production from the proposed plant turnaround is not accounted for.

For the purposes of this application, it should be noted that IMC will purchase or sell acid, as necessary, to correspond to phosphate product market trends. Consequently, the proposed project will not affect any downstream sources.

ATTACHMENT 3

AMMONIA SCRUBBING COSTS

The following analysis represents a simplified update of a similar analysis conducted for a double absorption sulfuric acid plant rated at 2700 tpd production. All costs have been scaled linearly for the purpose of this preliminary analysis for one plant.

Total Installed Cost:		= $ 7,300,000
Direct Annual Cost	Labor	= $ 918,000
	Maintenance	= $ 272,000
	Optg. Costs	= $ 3,650,000
	Total DC	= $ 4,840,000
Indirect Annual Cost	(0.1715 TCI, EPA combined factor) (includes capital recovery at 15 year life, 10% int.)	= $ 1,252,000
Total Annual Cost	(DC + IC)	= $ 6,092,000

Based on the above annual cost, the cost of sulfur dioxide control can be estimated based on the assumption that a stack emission rate of 2.5 lb SO2/ton acid can be achieved.

Net reduction = 141.7 tph acid x (3.5 – 2.5) lbSO2/ton x 8760 hrs/yr x ton/2000 lbs
= 621 tpy

Annual cost = $6,092,000 / 621 tpy
= $ 9,800/ton

A refined cost analysis was not conducted as the ammonia scrubbing technology was primarily rejected as BACT based on the following disadvantages (compared to double absorption process) that, in our opinion, outweigh the economic reasons:

- A waste by-product is generated for which disposal issues must be considered.
- Plant operators have to deal with additional operating parameters in an already complex chemical process.
- As the scrubbing system is a high maintenance item, it would require additional manpower for operation.
- The control process does not result in capture of product.
- The environmental liabilities of introducing an additional toxic air pollutant release point in the plant.

Acid mist control using ammonia is not addressed as mist eliminators were selected based on a top-down approach, with mist eliminators on top.

ATTACHMENT 4

REVISED NET EMISSIONS CHANGES

ACTUAL EMISSION RATE CALCULATIONS

Based on past two-year compliance test and annual operating hours information, the actual emissions for the five existing plants can be estimated as follows:

1.1 SULFURIC ACID PLANT 1

SO2 = (348 + 448) lb/hr / 2 x (8347 + 8674) hrs/yr / 2 x ton/2000 lbs
= 1694 TPY

SAM = (6 + 4) lb/hr / 2 x (8347 + 8674) hrs/yr / 2 x ton/2000 lbs
= 21 TPY

NOX = 8 lb/hr x (8347 + 8674) hrs/yr / 2 x ton/2000 lbs
= 34 TPY

1.2 SULFURIC ACID PLANT 2

SO2 = (393 + 453) lb/hr / 2 x (8666 + 8435) hrs/yr / 2 x ton/2000 lbs
= 1808 TPY

SAM = (6 + 8) lb/hr / 2 x (8666 + 8435) hrs/yr / 2 x ton/2000 lbs
= 30 TPY

NOX = 11 lb/hr x (8666 + 8435) hrs/yr / 2 x ton/2000 lbs
= 47 TPY

1.3 SULFURIC ACID PLANT 3

SO2 = (363 + 412) lb/hr / 2 x (8562 + 8363) hrs/yr / 2 x ton/2000 lbs
= 1640 TPY

SAM = (7 + 8) lb/hr / 2 x (8562 + 8363) hrs/yr / 2 x ton/2000 lbs
= 32 TPY

NOX = 7 lb/hr x (8562 + 8363) hrs/yr / 2 x ton/2000 lbs
= 30 TPY

2.0 PROPOSED EMISSION RATE CALCULATIONS

SULFURIC ACID PLANT Nos. 1-3, each

SO2 = 496.0 lb/hr x 8760 hrs/yr x ton/2000 lbs
= 2172.5 TPY

SAM = 17.0 lb/hr x 8760 hrs/yr x ton/2000 lbs
= 74.5 TPY

NOX = 17.0 lb/hr x 8760 hrs/yr x ton/2000 lbs
= 74.5 TPY

3.0 NET ANNUAL EMISSION CHANGES

Net Emissions = Proposed - Actual

Total Proposed SO2 = 2172.5 tpy x 3 = 6517.5 tpy
Total Proposed SAM = 74.5 tpy x 3 = 223.5 tpy
Total Proposed NOX = 74.5 tpy x 3 = 223.5 tpy

Total Actual SO2 = (1694+1808+1640) tpy = 5142 tpy
Total Actual SAM = (21+30+32) tpy = 83 tpy
Total Actual NOX = (34+47+30) tpy = 111 tpy

NET SO2 = (6517.5 – 5142) tpy = 1375.5 tpy
NET SAM = (223.5 – 83) tpy = 140.5 tpy
NET NOX = (223.5 – 111) tpy = 112.5 tpy

4. Professional Engineer Statement:

I, the undersigned, hereby certify, except as particularly noted herein, that:*

(1) To the best of my knowledge, there is reasonable assurance that the air pollutant emissions unit(s) and the air pollution control equipment described in this Application for Air Permit, when properly operated and maintained, will comply with all applicable standards for control of air pollutant emissions found in the Florida Statutes and rules of the Department of Environmental Protection; and

(2) To the best of my knowledge, any emission estimates reported or relied on in this application are true, accurate, and complete and are either based upon reasonable techniques available for calculating emissions or, for emission estimates of hazardous air pollutants not regulated for an emissions unit addressed in this application, based solely upon the materials, information and calculations submitted with this application.

If the purpose of this application is to obtain a Title V source air operation permit (check here [ ], if so), I further certify that each emissions unit described in this Application for Air Permit, when properly operated and maintained, will comply with the applicable requirements identified in this application to which the unit is subject, except those emissions units for which a compliance schedule is submitted with this application.

If the purpose of this application is to obtain an air construction permit for one or more proposed new or modified emissions units (check here [X], if so), I further certify that the engineering features of each such emissions unit described in this application have been designed or examined by me or individuals under my direct supervision and found to be in conformity with sound engineering principles applicable to the control of emissions of the air pollutants characterized in this application.

If the purpose of this application is to obtain an initial air operation permit or operation permit revision for one or more newly constructed or modified emissions units (check here [ ], if so), I further certify that, with the exception of any changes detailed as part of this application, each such emissions unit has been constructed or modified in substantial accordance with the information given in the corresponding application for air construction permit and with all provisions contained in such permit.

Signature

1/25/02
Date

(seal)

* Attach any exception to certification statement.