KOOGLER & ASSOCIATES
ENVIRONMENTAL SERVICES
4014 NW THIRTEENTH STREET
GAINESVILLE, FLORIDA 32609
352/377-5822 • FAX 377-7158

RECEIVED
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AIR REGULATION

KA 230-97-01

March 12, 1997

Mr. A. A. Linero
Florida Department of
Environmental Protection
Twin Towers Office Building
2600 Blair Stone Road
Tallahassee, FL 32399-2400

Subject: Mulberry Phosphates, Inc.
Sulfuric Acid Plant
Increase in Annual Hours of Operation
1050048-002-AC, PSD-FL-238

Dear Mr. Linero:

This is in response to your request for additional information dated February 28, 1997 on the above referenced project. The responses below are in the order of the issues raised by FDEP.

1. **Why were the annual hours of operation limited at this sulfuric acid plant? Please provide a permitting history for this source.**

RESPONSE:

The annual hours of operation were limited to correspond to a typical, facility-wide two week annual shut down. Over the years, on-line reliability of all chemical plants has improved from increased operator experience and technological improvements in process control. This is apparent in the hours of operation documented in recent Annual Operation Reports (AORs). Other plants at this site have previously been permitted for continuous operation (8760 hours per year). This request is similar in nature to other industry wide practices.

A brief permitting history of the sulfuric acid plant is presented below.

Permit No.	Issued	Expired	Comments
AC53-2584	12-16-74	9-16-75*	Initial construction
AO53-6050	12-14-78	1-31-83	Initial operation permit
AC53-6458A	8-28-78	8-30-79	Convert to double absorption
AO53-17115	3-01-79	2-01-84	Operation permit
AO53-78016	1-31-84	1-15-89	Renewed operation permit
AC53-85261	7-02-85	7-01-86	Rate increase with cogeneration
AO53-117930	9-11-86	8-28-91	Operation permit
AO53-198769	8-30-91	8-28-96	Renewed operation permit

* Later extended by DER.

2. **Will the proposed increase in annual hours affect the catalyst maintenance schedule?**

RESPONSE:

The catalyst maintenance schedule, which is typically every 18 months, will not be affected by the request for an increase in the annual hours of operation.

3. **We are in the process of making a BACT determination. Do plant historical operating data, literature, or equipment provider information suggest that BACT emission limits lower than 4 pounds of SO2 and 0.15 pound SO3 per ton of product can be achieved? If not, why not?**

RESPONSE:

This issue has been discussed in great detail with the NPS, EPA, and FDEP staff over the last few years. The EPA has determined in the most recent review of the NSPS for sulfuric acid plants that a more stringent standard is not justified. There is a wide consensus on the part of the regulatory agencies and the industry on this issue. The reason for the consensus is that neither the process design (sulfur dioxide emission control) nor add on control equipment (sulfuric acid mist emission control) have changed significantly in the recent past.

It is generally recognized that the sulfur dioxide emissions can be expected to be low just after plant turnaround (a maintenance cycle which is typically every 18 months), and much higher closer to a turnaround. The gradual deterioration of the catalyst used in the process contributes to higher emissions. The high cost associated with turnarounds (catalyst cost, materials cost, labor cost and cost due to loss of production) makes it impractical to conduct frequent plant shut downs to replace the catalyst. This aspect of sulfuric acid production was considered by EPA in the review of the NSPS.

It should be noted that setting emission limits based on performance testing is not appropriate because that approach fails to address the variability in the emission rates over time. Also, a statistical determination of the emission limit based on a series of performance tests over time, to provide a 95th percentile confidence level, would likely yield an emission rate in excess of the NSPS.

Imposing progressively lower emission limits on facilities subject to BACT may be valid for industries where emissions are controlled by add-on equipment or manufacturing processes which are subject to rapid or evolutionary changes. However, that rationale is not valid for the

sulfuric acid manufacturing process. In discussions with suppliers of sulfuric acid plant equipment (Monsanto) and regulatory agencies (FDEP and EPA), the BACT for a double absorption sulfuric acid plant is 4 pounds of sulfur dioxide per ton acid; and, 0.15 pound acid mist per ton of acid.

Based on the above discussion, it is appropriate for FDEP to set BACT limits at the emission levels proposed; an emission rate acceptable to both the regulatory agencies (FDEP, EPA and the NPS) and industry.

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

Very truly yours,

KOOGLER & ASSOCIATES

Steven C. Cullen, P.E.

SCC:par
Enc.

c: Ivan Nance, MP

CC: C. Holladay, BAR
J. Reynolds, BAR
EPA
NPS
SWD

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KA 230-97-01
MEMORANDUM

TO: Cleve Holladay, FDEP - Tallahassee

FROM: Pradeep Raval

DATE: February 28, 1997

SUBJECT: Air Quality Modeling
Mulberry Phosphates
Increase in Sulfuric Acid Plant Operating Hours

This is a follow up to our telephone conversation today regarding the air quality modeling conducted for the above referenced project.

As very limited modeling was required for the proposed project, a sample of modeling output (in hard copy) was provided in the Appendix of the subject application instead of a disk.

However, in accordance with your request, a disk containing the air dispersion modeling output is enclosed herein.

If you have any further questions, please do not hesitate to call me.

par.
encl.

c: Ivan Nance, MP

THIS DISK CONTAINS SULFUR DIOXIDE (SO2) AND SULFURIC ACID MIST (SAM) MODELING FILES FOR THE MULBERRY PHOSPHATES FACILITY IN MULBERRY FLORIDA. THE FOLLOWING ARE OUTPUT FILES ARE IN SELF EXTRACTING ARCHIVE FORMAT.

THIS DISK CONTAINS ISCST3 MODELING OF SIA, PSD CLASS 2 AND CHASSAHOWITZKA NWR PSD CLASS I AREA FILES:

ASI ANALYSIS OF CHASSAHOWITZKA NWR PSD CLASS I AREA:

SO2-C1	EXE	37,219	FOR SO2
SAM-C1	EXE	37,029	FOR SAM

ASI ANALYSIS OF FAAQS, AND PSD CLASS 2 AREA:

SO2-C2	EXE	37,945	FOR SO2
SAM-C2	EXE	37,807	FOR SAM

TO UNARCHIVE THESE FILES COPY THEM TO A HARD DISK DRIVE AND TYPE THE FILE NAME. FOR EXAMPLE TO UNARCHIVE THE SO2 ASI CLASS A ISCST3 OUTPUT FILES, TYPE "SO2-C1" AND PRESS ENTER. THE FILES WILL AUTOMATICALLY UNARCHIVE TO THE HARD DISK DRIVE. THESE ARCHIVED FILES CONTAIN THE MODELING AND ANALYSIS FILES ASCII DESCRIBED AS FOLLOWS:

THE FOLLOWING FILES CONTAIN ISCST3 MODELING OF SIGNIFICANT IMPACT ANALYSIS (SIA) FOR FAAQS AND PSD CLASS 2 AREAS FOR SO2.

THE FOLLOWING SIA FILES ARE PROVIDED:

SO2-C1	EXE	37,219	FOR SO2	
MLB87C1	OUT	29,958	01-20-97	SO2 CLASS 1 SIA FOR 1987
MLB88C1	OUT	29,958	01-20-97	SO2 CLASS 1 SIA FOR 1988
MLB89C1	OUT	29,958	01-20-97	SO2 CLASS 1 SIA FOR 1989
MLB90C1	OUT	29,958	01-20-97	SO2 CLASS 1 SIA FOR 1990
MLB91C1	OUT	29,958	01-20-97	SO2 CLASS 1 SIA FOR 1991
SAM-C1	EXE	37,029	FOR SAM	
SAM87C1	OUT	29,958	01-20-97	SAM CLASS 1 SIA FOR 1987
SAM88C1	OUT	29,958	01-20-97	SAM CLASS 1 SIA FOR 1988
SAM89C1	OUT	29,958	01-20-97	SAM CLASS 1 SIA FOR 1989
SAM90C1	OUT	29,958	01-20-97	SAM CLASS 1 SIA FOR 1990
SAM91C1	OUT	29,958	01-20-97	SAM CLASS 1 SIA FOR 1991
SO2-C2	EXE	37,945	FOR SO2	
MLB87C2	OUT	33,162	01-20-97	SO2 CLASS 2 SIA AND FAAQS FOR 1987
MLB88C2	OUT	33,162	01-20-97	SO2 CLASS 2 SIA AND FAAQS FOR 1988
MLB89C2	OUT	33,162	01-20-97	SO2 CLASS 2 SIA AND FAAQS FOR 1989
MLB90C2	OUT	33,162	01-20-97	SO2 CLASS 2 SIA AND FAAQS FOR 1990
MLB91C2	OUT	33,162	01-20-97	SO2 CLASS 2 SIA AND FAAQS FOR 1991
SAM-C2	EXE	37,807	FOR SAM	
SAM87C2	OUT	33,162	01-20-97	SAM CLASS 2 SIA AND FAAQS FOR 1987
SAM88C2	OUT	33,162	01-20-97	SAM CLASS 2 SIA AND FAAQS FOR 1988
SAM89C2	OUT	33,162	01-20-97	SAM CLASS 2 SIA AND FAAQS FOR 1989
SAM90C2	OUT	33,162	01-20-97	SAM CLASS 2 SIA AND FAAQS FOR 1990
SAM91C2	OUT	33,162	01-20-97	SAM CLASS 2 SIA AND FAAQS FOR 1991

IF THERE ARE ANY QUESTIONS OR IF I MAY PROVIDE ADDITIONAL FILES, OR ANALYSIS PLEASE CALL ME.

FEBRUARY 28, 1997

MARK KOLETZKE
KOOGLER AND ASSOCIATES
(352) 377-5822
KOLET@WORLDNET.ATT.NET

P 265 659 178
no green card 7/96

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

Sent to Robert Stewart	
Street & Number Mulberry Phosph.	
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 2-28-97	
1050048-002-AC PSD-FL-238	

PS Form 3800, April 1995

Department of Environmental Prote

Lawton Chiles
Governor

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

February 28, 1997

CERTIFIED MAIL - RETURN RECEIPT REQUESTED
Mr. Robert Stewart
Vice President, Operations & Administration
Mulberry Phosphates, Incorporated
Post Office Drawer 797
Mulberry, FL 33860

Re: DRAFT Permit No. 1050048-002-AC (PSD-FL-238)
Increase in Annual Hours at Mulberry Sulfuric Acid Plant

Dear Mr. Stewart:

The Department has reviewed your application to increase the annual hours of operation at Mulberry's sulfuric acid plant received on January 31, 1997. We need the additional information listed below to process this request.

1. Why were the annual hours of operation limited at this sulfuric acid plant? Please provide the permitting history for this source.

2. Will the proposed increase in annual hours affect the catalyst maintenance schedule?

3. We are in the process of making a BACT determination. Do plant historical operating data, literature, or equipment provider information suggest that BACT emission limits lower than 4 pounds of SO_2 and 0.15 pounds of SO_3 per ton of product can be achieved? If not, why not?

The Department will resume processing this application after receipt of the requested information. If you have any questions on this matter, please call Al Linero or Cleve Holladay at 904/488-1344.

Sincerely,

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

AAL/ch

cc: Mr. Steve Cullen, K&A
Mr. Brian Beals, EPA
Mr. John Bunyak, NPS
Mr. Roy Harwood, PCNRD