

**COMMISSION**

DOTTIE BERGER  
JOE CHILLURA  
CHRIS HART  
JIM NORMAN  
JAN PLATT  
THOMAS SCOTT  
ED TURANCHIK

**EXECUTIVE DIRECTOR**

ROGER P. STEWART



ADMINISTRATIVE OFFICES, LEGAL &  
WATER MANAGEMENT DIVISION  
1900 9TH AVENUE  
TAMPA, FLORIDA 33605  
TELEPHONE (813) 272-3800  
FAX (813) 272-5157

AIR MANAGEMENT DIVISION  
TELEPHONE (813) 272-5530

WASTE MANAGEMENT DIVISION  
TELEPHONE (813) 272-5788

WETLANDS MANAGEMENT DIVISION  
TELEPHONE (813) 272-7104

**ENVIRONMENTAL PROTECTION COMMISSION  
OF HILLSBOROUGH COUNTY**

**FAX TRANSMITTAL SHEET**

DATE: 05-27-98

TO: Al Sinerio

FAX PHONE: 850-922-6979 VOICE PHONE: \_\_\_\_\_

TOTAL NUMBER OF PAGES INCLUDING THIS COVER PAGE: 4

EPC FAX TRANSMISSION LINE: (813) 272-5605  
FOR RETRANSMISSION OR ANY FAX PROBLEMS, CALL: (813) 272-5530

FROM: Rick Kinley, P.E.  
(CIRCLE APPLICABLE SECTION BELOW)

**AIR DIVISION**

- ENFORCEMENT
- ENGINEERING
- SUPPORT OPERATIONS

SPECIAL INSTRUCTIONS: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_



## COMMISSION

GOTTIE BERGER  
JOE CRILLARA  
CHRS HART  
JIM NORMAN  
JAN PEATTI  
THOMAS SCOTT  
ED TURANCHIK

## EXECUTIVE DIRECTOR

ROGER F. STEWART



ADMINISTRATIVE OFFICES, LEGAL &  
WATER MANAGEMENT DIVISION  
1300 8TH AVENUE  
TAMPA, FLORIDA 33606  
TELEPHONE (813) 272-6960  
FAX (813) 272-5137

AIR MANAGEMENT DIVISION

TELEPHONE (813) 272-6930

WASTE MANAGEMENT DIVISION

TELEPHONE (813) 272-6786

WETLANDS MANAGEMENT DIVISION

TELEPHONE (813) 272-7304

## MEMORANDUM

DATE: May 27, 1998

TO: Al Lino, P.E.

FROM: Rick Kirby, P.E.

THRU: Jerry Campbell, P.E.

SUBJECT: Cargill, Sulfuric Acid Plant, No. 7 PSD Application

The EPC Air Management Division has performed a review of the referenced application. The application requests an increase in  $H_2SO_4$  production from 2,200 TPD to 3,200 TPD. Emissions of  $SO_2$  and acid mist were presented as reaching net significant increases described in Table 212.400-3. Listed below are comments and questions which we request be incorporated into your review.

1) 62-212.400(2)(d)4 ii states a facility is subject to PSD and BACT if the modification would result in a significant net emissions increase. 62-212.400(2)(e)1 gives A) Net Emissions Increase. A modification to a facility results in a net emissions increase when, for a pollutant regulated under the Act, the sum of all of the contemporaneous creditable increases and decreases in the actual emissions of the facility, including the increase in emissions of the modification itself and any increases and decreases in quantifiable fugitive emissions, is greater than zero.

Based on this definition, Cargill should determine the contemporaneous emissions increases for all emissions which will be produced by processing of the additional 365,000 tons of acid produced over a year's time  $(3200-2200) \times 365$ . This analysis should include the pollutants fluoride, PM,  $PM_{10}$ , etc. Operations analyzed should include phosphoric acid production, rock processing, product (GTSP, MAP, DAP) manufacturing, storage, handling, etc. Emissions from all increased fuel usage should be calculated as well.

The BACT determination should include all the emission units which contribute to any significant net emission increase. So if the additional 365,000 tons of acid is used produce x tons of GTSP and the resulting net increase in PM emissions is greater than 25 TPY, then all the emission units which contribute to the significant net increase in PM shall be required to have BACT level controls.

An Affirmative Action: Equal Opportunity Employer



was used in question, we use of perceived "old" weather data. If there are reasons more up-to-date five year weather periods can not be used, such as cost or gaps in the weather data, then these problems should be addressed.

---

**AIR MANAGEMENT DIVISION  
MEMORANDUM**

---

**TO:** JERRY  
**FROM:** PATRICK *RS*  
**SUBJECT:** CARGILL SAP #7 PSD APPLICATION  
**DATE:** MAY 21, 1998

---

In response to the Cargill PSD application and Leroy's memo mentioning complaints concerning Cargill, I have extracted all complaints in our AREV database that concern odors from the Cargill facility. There have been at least 51 odor complaints against the Cargill facility in the past 5 years. This list of complaints is probably not complete due to errors in data entry or other possible filing errors and limits in the number of STR's searchable in AREV. Therefore this list represents the minimum number of odor complaints received on Cargill. An extensive file review may reveal more complaints. There are currently two open complaints that may involve odors from the Cargill facility, these complaints are not on the attached list. As a note, 19 of the 51 complaints were from one complainant.

Cc: Rick  
Sterlin  
Leroy

COMP NO	IS	TT	DATE REC	COMP Y	COMP NAME	DESC	INT. CODE	FORM	AC. NO.	LOC.
3436A	18	30	19	14-Jul-97	AD	CECIL LAY	DM	ODOR FROM CARROLL'S	3436	CARROLL
3458A	14	30	19	27-Jul-98	AD	BETTY WISE	DM	CLAIMS THE ODOR FROM CARROLL IS VERY STRONG AND MAKING THEM SICK. ALSO CLAIMS KRAVY EMISSIONS	3458	CARROLL FERTILIZER
3470A	21	30	19	19-Aug-98	AD	DONALD BOND	SEW	ANYTIME WE GET A NW WIND THEN WE GET A PUNYENT ODOR TIED OF THE ODOR	3470	CARROLL GYPSUM STACK
3530A	12	30	19	13-Jul-98	AD	CECIL LAY	DM	CARROLL FERTILIZER HAS ODOR WHEN WIND IS BLOWING	3530	CARROLL FERTILIZER
3681A	12	30	19	09-Sep-97	AD	CECIL LAY	DM	ODOR COMING FROM CARROLL. FIRST BUTKID A SULFURIC ACID SMELL AT 7:30 AM TO THE PRESENT TIME OF 8:54 AM.	3681	CARROLL FERTILIZER
3682A	22	30	19	10-Sep-97	AD	CECIL LAY	DM	ODOR COMING FROM CARROLL. FROM 8:00 AM TO 10:00 AM. D BY PHONE (NO. 30) A.M.	3682	CARROLL FERTILIZER
3683A	22	30	19	07-Oct-97	AD	CECIL LAY	DM	WIND IS COMING FROM CARROLL AT 9:00 A.M. THE FARMER SAID THAT HE NOW HEARD A GAS (NO. 30) A.M.	3683	CARROLL
3679A	21	30	19	14-Oct-98	AD	CECIL LAY	DM	HE LAY FIRST NOTICED A SULFURIC ACID SMELL COMING FROM CARROLL AT 11:00 AM WHEN HE WAKED UP.	3679	CARROLL
3740A	22	30	19	28-Oct-98	AD	CECIL LAY	DM	MR. LAY FIRST NOTICED A SULFURIC ACID SMELL AROUND 1:00 PM. HE STATES THAT THE WIND WAS BLOWING FROM THE DIRECTION THAT CARROLL IS IN. MR. LAY STATED THAT ON SAT. AND FRIDAY THE SMELL WAS REALLY BAD.	3740	CARROLL
3678A	22	30	19	05-Nov-98	AD	CECIL LAY	DM	MR. LAY FIRST NOTICED A SULFURIC ACID SMELL AROUND 7:15 AM THIS MORNING.	3678	CARROLL
3742A	22	30	19	04-Dec-97	AD	JACK FONGAR	AW	THERE IS AN ODOR COMING FROM CARROLL FERTILIZER AT 10:00 PM. THE WIND WHEN THE WIND IS FROM THE SOUTH. I CALLED MR. FONGAR FOR MORE DETAIL. HE SAID THE ODOR PERSISTED FOR THE WHOLE SATURDAY NIGHT (DEC. 4, 1997) DUE TO SOUTH-WEST WIND. HE SAID THE PHOSPHO	3742	CARROLL FERTILIZER
3743A	22	30	19	10-Dec-97	AD	CECIL LAY	AW	SULFURIC ACID SMELL FROM CARROLL	3743	CARROLL
3744A	22	30	19	14-Dec-97	AD	CECIL LAY	AW	MR. LAY FIRST NOTICED A SULFURIC ACID SMELL AROUND 7:00 AM THIS MORNING AND IT LASTED TILL THE TIME HE CALLED.	3744	CARROLL
3680A	21	30	19	20-Dec-98	AD	CECIL LAY	DM	SULFURIC ACID SMELL FROM CARROLL GYPSUM STACK	3680	CARROLL GYPSUM STACK
3760A	21	30	19	29-Dec-97	AD	CECIL LAY	DM	SULFURIC ACID SMELL AT 8:00 PM	3760	CARROLL GYPSUM STACK
3761A	21	30	19	06-Jan-98	AD	CECIL LAY	DM	NOTICED SULFURIC ACID SMELL AROUND 1:00 PM	3761	CARROLL GYPSUM STACK
3762A	22	30	19	07-Jan-98	AD	CECIL LAY	DM	NO SMELL FROM CARROLL	3762	CARROLL
3778A	22	30	19	17-Jan-98	AD	EDITH STEWART	DM	CARROLL FERTILIZER HAS AN ACID SMELL FOR THE SECOND DAY IN A ROW.	3778	CARROLL FERTILIZER
3779A	22	30	19	17-Jan-98	AD	GARY LAY	DM	COMPLAINING ABOUT SMELL FROM CARROLL FERTILIZER. IT IS AN UNTIL LATE THAT NIGHT.	3779	CARROLL
3780A	22	30	19	20-Jan-98	AD	ANNESSICA KARRANNA	DM	CARROLL FERTILIZER IS CAUSING HER & HER FOUR CHILDREN TO HAVE UPPER RESPIRATORY INFECTIONS. SHE WANTS SOMEBODY TO INVESTIGATE & GIVE HER INFORMATION ON THE AMBIENT AIR CONCENTRATIONS OF HARMFUL CHEMICALS AROUND HER HOME.	3780	CARROLL
3781A	21	30	19	28-Jan-98	AD	CECIL LAY	DM	Odor, acid smell around 1:00 PM.	3781	CARROLL
3782A	21	30	19	22-Feb-98	AD	CECIL LAY	DM	COMPLAINING ABOUT ODOR FROM CARROLL GYPSUM STACK, FRIDAY 5 PM TO 9 PM, AND THEN SUNDAY 1 AM TO 11 PM.	3782	CARROLL GYPSUM STACK
3800A	13	30	19	23-Feb-98	AD	DAVID OSBORN	DM	Boys running out of fertilizer today (Friday) every day. There is a 25 mile stretch of brown smog at night which starts around 9:00 PM and	3800	CARROLL
3802A	18	30	19	03-Mar-98	AD	PAT DELACAGER	DM	STRONG AMMONIA ODOR FROM CARROLL. OCCURRING ALMOST DAILY NOW. TREES ARE BEING AFFECTED.	3802	CARROLL
3803A	22	30	19	16-Mar-98	AD	EDWARD BAIRD	DM	Phosporic acid smell from Carroll at 7:00 A.M.	3803	CARROLL
3804A	22	30	19	21-Mar-98	AD	CECIL LAY	DM	Call called to say that on 04/20/98 at 2:15, 3:30 and 4:45 PM there was a odor from Carroll's gyp stack. He said the odor lasted approx. 9:30 PM, to 10:00 AM. He said that the day before and the day after the odor was not there.	3804	CARROLL
3805A	22	30	19	21-Mar-98	AD	CECIL LAY	DM	Did not get any odor complaints that day was fine.	3805	CARROLL

3903AA	12	30	19	06-Jun-94	IA	CARROLLAY	Smell from Cargill to 2:00 p.m. on 6/4/94 at 2:30 p.m. on 6/5/94 and 7:00 a.m. only. I told him down he is making the complaint after the fact. I will not be going there as I am on a mission. He said he just wanted the complaint on file.	OK	Complaint received after the fact. Complainant said he wanted the complaint to be on file. No more further investigation at this time.	CARGILL	Cargill Facilities
3932BA	12	30	19	07-Jun-94	IA	CARROLLAY	Mr. Lay says that the guy who is making the complaint started to complain to him on 6/1/94. He stated that there was no wind.	NM	Complaint received on 6/1/94. No wind at the time. The complaint was filed on 6/1/94.	CARGILL	Riverview
40129W	12	30	19	11-Oct-94	AO	MR CHARLES SPANES	UNCLEYASHBEE DOCK AT KINGWOOD MAR. ISSUE COMING FROM STORMDRAINE WHICH RECEIVE LEACHATE FROM WASTE WATER POUNDS.	NWB	I HAVE ADJUSTED THAT CASE IS UNDER A DIVERSITY. EMPLOYMENT. INFORMED COMPLAINANT THAT IT CONDITIONS WORKMEN. TO CALL BRAC.		BOUYI BOU OF GIBSONTOS DL. PART OF IN JUL
39405A	11	30	17	17-Jul-93	IA	PEGGY MAREO	Employee's notes that their car a piece of equipment had an odor associated with it on 12/2/93 and 12/7/93 in around 7:35 a.m. to 7:45 a.m. The odor was about a mile long moving in a westerly direction crossing Highway 41. The stated that odor was	NM	I spoke to Ellen Carter. He stated that he believed that the source of the odor was the steam coming off the water from their cooling ponds. The pond water has a small amount of salt. They are at present trying to determine what causes the cooling water.	CARGILL	Cargill
4177BA	17	30	16	15-May-93	AO	SOREITA SCHEFFIELD	Odor from the surrounding woods is causing respiratory problems for staff and students. This was the first day that it was noticeable. Staff could not determine the source other than coming from the woods/road area.	FC	Complaint filed on 5/15/93. Made a preliminary investigation of Riverview Elementary school records. Did not detect any unusual odor. Could not discover any likely or unusual source of odor. Suspect the odor complaint described was from a transient source.	UNKNOWN	10009 Highway Drive in Riverview
43442A	22	30	19	18-Sep-95	IA	ANASTASCOVA	A cloud of white smoke is making them cough, burn a headache, and irritate. Complainant stated that the smoke is coming from Cargill fertilizer.	R/D	I arrived at Cargill at 2:45 p.m. and met Mr. Kevin M. Ryan, Environmental Supervisor for Cargill. Mr. Ryan stated that Cargill had an accidental release of 50 to 100 lbs. of sulfur dioxide (SO2) and sulfur dioxide (SO2). Mr. Ryan estimated the release as	CARGILL	Orlando
44345A	23	30	19	01-Feb-96	IA	PETER THIBODEAU	Strong odor is believed to be coming from Cargill. He stated the odor started on 10/31/95. The odor irritates his nose and throat due to his asthma. He said he had to leave the house.	CEB	Spoke to Mr. Thibodeau for details. He described the odor as being very strong and irritating when driving past Cargill. Our records show that Cargill had two odor episodes on Jan 30 at 10:40 AM and 1:35 PM. The wind came from the southwest to west at approx 5 mph.	CARGILL	1815 Coyle Pl
43316A	31	30	19	16-Jun-94	IA	CELARDO	A substance that resembles finely ground coal is coming from the side of the property. The substance is usually contained but it very apparent this morning.	CEB	A sample of the substance was taken from the property. The small granule substance was found on the driveway at the west and south side of the house, in the back yard, on the porch, on the car and driveway and in the pool. On the nearby in road.	CEB	7315 STATE AVENUE GIBSONTOS, FL
13925A	12	30	19	13-Apr-96	IA	MARY ALLEN	Odor from Cargill. She says she 2-3 times a week she can smell a mixture of fertilizer smell around 6:00 PM. She said last time it occurred was a week ago. She also wanted to complain about a fish kill that occurred a month ago.	TLS	Called for additional info. Mr. Allen said for small odor on US 41 about 1/2 mile from Riverview. Also, sometimes at River Woods MCH park where the Lake. She is informed. Also complained about a fish kill which runs 1/2 the night once a month. To	CARGILL	6911 Riverview Dr
44344A	22	30	19	16-Jun-96	IA	ANONYMOUS	Complaints could not say that Cargill had been helping out with all the dogs. He said his wife said that it started around 11:00 am and continued for 3 to 4 hours. He said that according to his wife, a cloud of this material came down the river town.	SEW	I checked the storage tank and discovered that Cargill had called in two combined volumes of SAP #9 and #7 at around 11:15 p.m. today. I then scheduled an inspection to check the CEM's for the plants. We checked suspected reports. I checked Kinky	CARGILL	8113 Hwy 41 South
44349A	23	30	19	10-Jul-96	IA	MARY ALLEN	Complaint about strong odor in her neighborhood. She said that it smells like strong black smoke, and that it has been burning like that for the past few weeks. She usually smells it more in the afternoon. Suspect Cargill.	DML	North and I went to the complaint's address for an odor log. We tried to measure SO2 at this location with a handheld SO2 detector but we could not detect any SO2. There was not much wind in the area. The winds were coming from the WNW.	CARGILL	Riverview
51216A	12	30	19	22-Aug-96	IA	CHRISTINA HEUER	Mr. Bernal indicated that she and her family have noticed a thick plume of odor since 10/1/96. She said that the odor is very strong and has been in the neighborhood for several weeks. She said that the odor is very strong and has been in the neighborhood for several weeks. She said that the odor is very strong and has been in the neighborhood for several weeks.	DML	Went to location of complaint for several days. I was unable to log in the complaint and found that there was a strong odor that was not coming from Cargill. Located at a sample of the complaint's location in Cargill's new granule area. The log	CARGILL	
44343A	17	30	19	21-Dec-96	IA	PAMELA BIGGS	Complaint about respiratory irritation, especially when the wind blows from the direction of Cargill (west). She says that the air approximately 3 miles from Cargill and that she just recently moved into the area.	DML	Went to the complaint's home, she was not home at the time of my visit. I left my business card on her door. At this location, I checked an odor similar to the odor found at Cargill's Phosphate Acid Plant. The wind speed was approximately 3 MPH.	CARGILL	9908 pecanwood drive
44342A	16	30	19	03-Dec-96	IA	JANETTE COCHRAN	A greyish white powdery material is covering their car and outside on part of their house. It has been coating for 6 months or so. There is no odor to the material.	CKB	and Diana Lee. Went to the complainant's house to take odor samples from her car and boat. The detect the odor but it was not detected all over. It looked like a dry lake deposit. We noticed several trees on the property that give shade to the car on	CARGILL/TECO	between Big Bend and Alafia River
44341A	22	30	19	09-Dec-96	IA	PAMELA BIGGS	Red smell coming from Cargill Fertilizer plant.	DML	and Sergio Wenzel. Call complainant at work to find out more information. Ms. Biggs explained that the odor was not constant, only when the winds are coming from the right direction. She is explained to her. We needed to confirm that the odor was	CARGILL	Urepps
44340A	14	30	19	12-Dec-96	AO	JEANNE COLP	Last night around 10:00 p.m. to 11:00 p.m. there was a lot of noise coming from Cargill. She stated that there is a terrible noise coming from Cargill right now. She stated that the noise is very loud and that it is very irritating to her.	DML	Called complainant to find out more information, she was not home, so I left a message in her answering machine to call me. I called the complainant again on 1/1/97. She explained that a neighbor that lives across the road 2 miles east had been told to	CARGILL	Cargill Facilities
50456A	12	30	19	17-Dec-96	IA	WYNBOF AMERSON	Went to location of complaint for several days. I was unable to log in the complaint and found that there was a strong odor that was not coming from Cargill. Located at a sample of the complaint's location in Cargill's new granule area. The log	OK	Called Mr. Anderson to collect more information. Based upon the information, Cargill seemed to be the source. He called Mr. Edgerton to check for help and investigate the complaint. On 1/2/97, Kelly reported that everything was normal on December 26, 1996.	CARGILL	Cargill
44347A	12	30	19	21-Jul-97	IA	KATY EDGEMOND	Mr. Edgerton reported a very strong odor with a strong sulfur smell. She stated that the odor was very strong and that it was very irritating to her. She stated that the odor was very strong and that it was very irritating to her.	OK	I drove to the Cargill site. I did not see any odor. Instead I drove on the east border line. I passed the house and I did not see any odor. I checked the air in the house. I checked in the Wiggins Park. Wanted to see if there was a strong odor in the house.	CARGILL/FRY	FWALK
35564A	12	30	19	22-Dec-97	IA	UNKNOWN	Complaint called regarding Cargill emitting a light grey smoke to covering out of their stacks. The odor was terrible and the air Cargill was emitting had a strong smell. The complaint was for Saturday, December 18, 1997. Also all health of children were very bad.	CKB	The complainant did not have their photo number or name. They will call back if and when the odor and when they call. The case was already closed. However, we could not let a sample.	CARGILL	Cargill
44401A	12	30	19	30-Dec-97	AO	ANDRYNIDES	Complaint called to say that last night about 3:00 AM there was heavy fog and very cold from Cargill. He said it is very bad a lot of cases when the wind is blowing from the plant. She said she got headache so bad that she was in hospital for 2 days.	OK	Please see the 2nd inspection report for why in Cargill's office in the complainant's file.	CARGILL, INC.	Cargill



Al Linero, P.E.

May 27, 1998

Page 2

- 2) Cargill has proposed the use of fuel oil with maximum sulfur content of 0.5%. Fuel oil with lower sulfur content is readily available. A lower sulfur oil should be required.
- 3) Cargill has stated that FGD scrubbers have been evaluated for other facilities and were not researched in depth for the BACT proposal. CF has been using ammonia scrubbers with single absorption for years. Given intermittent high levels of ambient SO<sub>2</sub> in the area, high levels shown in various computer modelling runs (described in latter comments) and local citizen complaints, (see attachment), Cargill should evaluate scrubbers with double absorption for BACT applicability. The marketability of the by-products should be included in the analysis.
- 4) On page 18 of the application it is stated that fugitive emissions were not taken into account in the PSD applicability determination. Sulfuric acid plants are on the list of 28 (Table 212.400-1). This plant meets the definition in Rule 62-210(283). Per Rule 62-212.400(2)(6), the fugitives exemption does not apply.
- 5) The overall SO<sub>2</sub> emissions in the Tampa Bay area are of concern. Alex Meng, FDEP Tallahassee, has modeled the entire Tampa Bay area for SO<sub>2</sub> for the same five year weather period used in this application and found SO<sub>2</sub> exceedances, and that modeling did not include Piney Point or this proposed project. This discrepancy needs to be addressed and resolved before this permit is issued.
- 6) The application says that the stack for the No. 7 SAP is being modified by switching to a smaller diameter and higher exit velocity. This may improve dispersion, but what affects does the closed gypsum stack have on downwash? Their application does not address this issue.
- 7) In section 3.1.2., the applicant is requesting an exemption from the PSD pre-construction ambient monitoring requirements. With the large number of complaints received concerning this facility, we can not support this ambient monitoring exemption.
- 8) In reviewing the sources used in the modeling, a number of sources were given which have been closed or inactive for many years, with emissions of over 28,000 tons of SO<sub>2</sub> per year. These were included in the modeling. Also, numerous cases were given where the data in ARMS (formerly APIS) did not match what was used in the modeling. While we realize this application is based on previously submitted PSD applications, we believe these discrepancies should be cleared up.
- 9) The weather data used in the modeling is from 1987 to 1991. While we agree that any five year period should theoretically be adequate for long term modeling, we believe the public will begin to question the use of perceived "old" weather data. If there are reasons more up-to-date five year weather periods can not be used, such as cost or gaps in the weather data, then these problems should be addressed.

Al Linero, P.E.  
May 27, 1998  
Page 3

10) Section 4.0 (page 18) of our copy of the application is missing.

11) Particulate Matter includes "all finely divided solid or liquid material" per Rule 62-210.200(219), F.A.C. Cargill should demonstrate that the facility meets the requirements of Rule 62-296.712 including 0.03 gr/dscf and 5% opacity.

Thank you for the opportunity to provide comments.

mjh





# United States Department of the Interior

## FISH AND WILDLIFE SERVICE

1875 Century Boulevard  
Atlanta, Georgia 30345

May 29, 1998

IN REPLY REFER TO:

Re: PSD-FL-250

**RECEIVED**

JUN 03 1998

BUREAU OF  
AIR REGULATION

Mr. C. H. Fancy  
Chief, Bureau of Air Regulation  
Department of Environmental Regulation  
Twin Towers Office Building  
2600 Blair Stone Road, MS 48  
Tallahassee, Florida 32399-2400

Dear Mr. Fancy:

Our Air Quality Branch has reviewed the Prevention of Significant Deterioration Application for Cargill Fertilizer, Inc.'s proposal to modify its No. 7 Sulfuric Acid Plant in Riverview, Florida. The facility is located 86 km south-southeast of Chassahowitzka Wilderness, a Class I air quality area, administered by the Fish and Wildlife Service. The technical review comments from our Air Quality Branch are enclosed. Specifically, we recommend that your Department require Cargill to meet lower limits than proposed for sulfuric acid mist emissions.

Thank you for giving us the opportunity to comment on this permit application. We appreciate your cooperation in notifying us of proposed projects with the potential to impact the air quality and related resources of our Class I air quality areas. If you have any questions, please contact Ms. Ellen Porter of our Air Quality Branch in Denver at 303/969-2617.

Sincerely yours,

For/ Sam D. Hamilton  
Regional Director

Enclosures

cc: A. Lixero, BAR  
C. Holladay, BAR  
EPA  
SWD  
POLK Co.

**Technical Review of Prevention of Significant Deterioration Permit Application  
For the Modification of the No. 7 Sulfuric Acid Plant  
Cargill Fertilizer Plant  
Riverview, Florida  
PSD-FL-250**

by

**Air Quality Branch, Fish and Wildlife Service – Denver  
May 27, 1998**

Cargill Fertilizer, Inc. (Cargill), is proposing to modify the existing No. 7 Sulfuric Acid ( $H_2SO_4$ ) plant at its phosphate fertilizer manufacturing facility located in Riverview, Florida. The modification will allow an increase in the maximum  $H_2SO_4$  production rate from 2,200 tons per day (TPD) to 3,200 TPD of 100 percent  $H_2SO_4$ . The facility is located 86 km south-southeast of Chassahowitzka Wilderness, a Class I air quality area administered by the U.S. Fish and Wildlife Service (FWS). This project will result in PSD-significant increases in emissions of sulfur dioxide ( $SO_2$ ) and sulfuric acid mist (SAM). Emissions (in tons per year – TPY) are summarized below.

<b>POLLUTANT</b>	<b>EMISSIONS INCREASE (TPY)</b>
SO <sub>2</sub>	793
SAM	74.6

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

*Sulfur Dioxide (SO<sub>2</sub>):* The control technology proposed by Cargill, double absorption, has been the industry standard for the past three decades. For this application, Cargill has proposed to expand the capacity of the existing catalytic converters that transform  $SO_2$  from the sulfur burners to sulfur trioxide. The sulfur trioxide is subsequently absorbed by water to form  $H_2SO_4$ . The converters will be expanded more than needed to provide the added acid production; the extra converter volume will allow lower  $SO_2$  emissions relative to the amount of acid produced. Expansion of the converters will require significant physical modification to the existing plant.

Although the 3.5 lb SO<sub>2</sub> per ton of acid produced (lb/ton) limit proposed is lower than the federal New Source Performance Standard (NSPS) of 4.0 lb/ton that applies to this type of facility, it does not necessarily represent BACT. BACT must be at least as stringent as the NSPS. In contrast, Mississippi Phosphate proposed a SO<sub>2</sub> limit of 3.16 lb/ton in 1997 for its Pascagoula Plant, a facility that also employs double absorption.

Cargill also found other control technologies to be technically feasible, including the use of alternative scrubbing reagents, more frequent catalyst replacement, or molecular sieves. However, the applicant dismissed these technologies as being too expensive, but did not provide supporting documentation for that conclusion. A complete BACT analysis would present the economic and environmental consequences of applying those technologies.

*Sulfuric Acid Mist (SAM):* Cargill proposes to replace the existing "conventional" mist eliminators with Monsanto CS (Cost Saver) or equivalent impaction-type mist eliminators capable of removing 100% of particles larger than 3 microns and 50 to 95% of 0.5 to 3 micron particles. Although Cargill notes that a competitor, Piney Point Phosphates, has committed to installation of more efficient mist eliminators that employ Brownian diffusion to achieve higher removal efficiencies, Cargill eliminates this technology from further consideration, citing its extra cost. In addition, Cargill claims that it would have to replace its tower if the more efficient mist eliminators were used. However, Cargill does not provide any supporting cost/benefit calculations to justify the dismissal of this technology from consideration.

Although the mist eliminators currently in use on the No. 7 plant are capable of lower SAM emissions, Cargill is proposing that the emission limit for the new and improved mist eliminators be set at 0.15 lb SAM/ton, the same as the NSPS established in 1979. This rate is 50% above the worst performance of the old units. Cargill attempts to justify this limit by citing fluctuations in its own stack test data and the common reliance upon the NSPS by permitting authorities.

Examination of the NSPS indicates that the standard for SAM emissions was likely based on skewed data results. The data presented in the attached Table 2.a is taken from EPA's 1992 Sulfuric Acid Background Report (for its *AP-42, Compilation of Air Pollutant Emission Factors*). At first glance, the raw data appears to support the 0.15 lb/ton limit. The average emission rate is 0.108 lb/ton, the standard deviation is 0.141, and a 95% confidence interval would place emissions between 0.073 and 0.144 lb/ton. Thus, the casual observer would conclude that, in order to be confident that the emission limit could be met by 95% of the tests, it should be set between 0.14 to 0.15 lb/ton. However, graphing the data reveals certain trends and outliers (values that indicate some unusual condition or error in the test). Figure 2.a is a scatter plot of the EPA test data and shows that the majority of the test results fall between 0.01 and 0.18 lb/ton; it also shows that the group of results on the far right end of the graph are much higher than the other results. Further inspection of the raw data in Table 2.a reveals that all of the high values came from tests at one facility, and that the median value is less than half of the average. This indicates that the data are being skewed to the high side by a few exceptionally high values.

Because a NSPS should be representative of the capabilities of modern control technology operating in a typically well-maintained mode, it should not be allowed to be unduly influenced by a few extraordinary test results. If the very high data from the one facility is excluded, the remaining data in Table 2.b show better convergence of the mean and the median, and yield a 95% confidence interval of 0.045 to 0.078 lb SAM/ton. From this data, one could suggest that the NSPS should have been set at around 0.08 lb/ton, slightly more than half the 20-year old (and current) NSPS.

If we look at only the Table 2.c data from the tests performed by Cargill, we find that their graph (Figure 2.b) is reasonably consistent. The median and mean are similar and the significant fluctuations cited by Cargill as justification for a high limit are non-existent. In fact, the standard deviation is only 0.033 (much less than the EPA data) and the 95% confidence interval is 0.028 to 0.087 lb SAM/ton, not much higher than the EPA data in Table 2.b.

Table 2.d combines the EPA data, minus the outliers, and the Cargill data. The Table 2.d data is shown graphically in Figure 2.c. Most test results are below 0.04 lb/ton and 95% of the test results fall in the range between 0.046 and 0.074 lb SAM/ton of acid produced.

### **Conclusions and Recommendations**

*SO<sub>2</sub>*: Cargill is proposing a lower SO<sub>2</sub>/ton limit (3.5 lb/ton, 24 hr average) than any found to date in the RACT/BACT/LAER Clearinghouse (Note: Piney Point Phosphate's limit of 3.5 lb/ton is based on a 48 hr average). However, this limit is not as low as that proposed by Mississippi Phosphates (3.16 lb/ton).

*SAM*: Cargill is proposing the out-of-date and technically flawed NSPS of 0.15 lb/ton for SAM emissions. Cargill's own test results indicate that a much lower limit can be achieved by its current mist eliminators. The Florida Department of Environmental Protection, in its comments on the permit issued to Piney Point Phosphates, notes that mist eliminator technology is capable of meeting much lower limits than 0.15 lb/ton.

In addition, the BACT analysis is not complete. Cargill eliminated from consideration potentially more efficient control technologies for SO<sub>2</sub> and SAM emissions without demonstrating their economic infeasibility

However, if SAM emissions from the Cargill No. 7 acid plant are limited to not more than 0.10 lb SAM/ton of acid produced (i.e., the highest rate recorded at this facility and likely to be met more than 99.9999% of the time), FWS will not challenge the lack of a complete BACT analysis for this permit application.

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

The air quality and visibility analyses were performed appropriately.

The air quality modeling results indicated that the proposed project would not cause or significantly contribute to the PSD Class I SO<sub>2</sub> increment exceedance that was predicted for the 24-hour and 3-hour averaging times. It is not clear if the cumulative increment analysis was done using actual or allowable emissions. If the analysis was done using actual emissions then the State should mitigate the increment exceedance.

The visibility analysis predicts that there would be low potential for the proposed project to cause visibility impairment due to increased haze in Chassahowitzka Wilderness. Other air quality related values at Chassahowitzka are not expected to be affected by the project.

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

**Table 1**

**STATISTICAL ANALYSIS OF ACID PLANT SO2 EMISSIONS**

**Cargill #7 Acid Plant SO2 Test Results**

Test Date	Factor (lb/T)
4/15/93	3.4
3/10/94	3.2
4/11/95	3.9
2/19/96	3.9
5/8/97	3.7

Count = 5  
Average = 3.620  
Median = 3.700  
Mode = 3.900  
S.D. = 0.311  
95% CI = 0.273 +/- 3.620

Emission Factor (EF) @ 95% 3.347 <EF< 3.893

FIGURE 1. CARGILL SO2 DATA

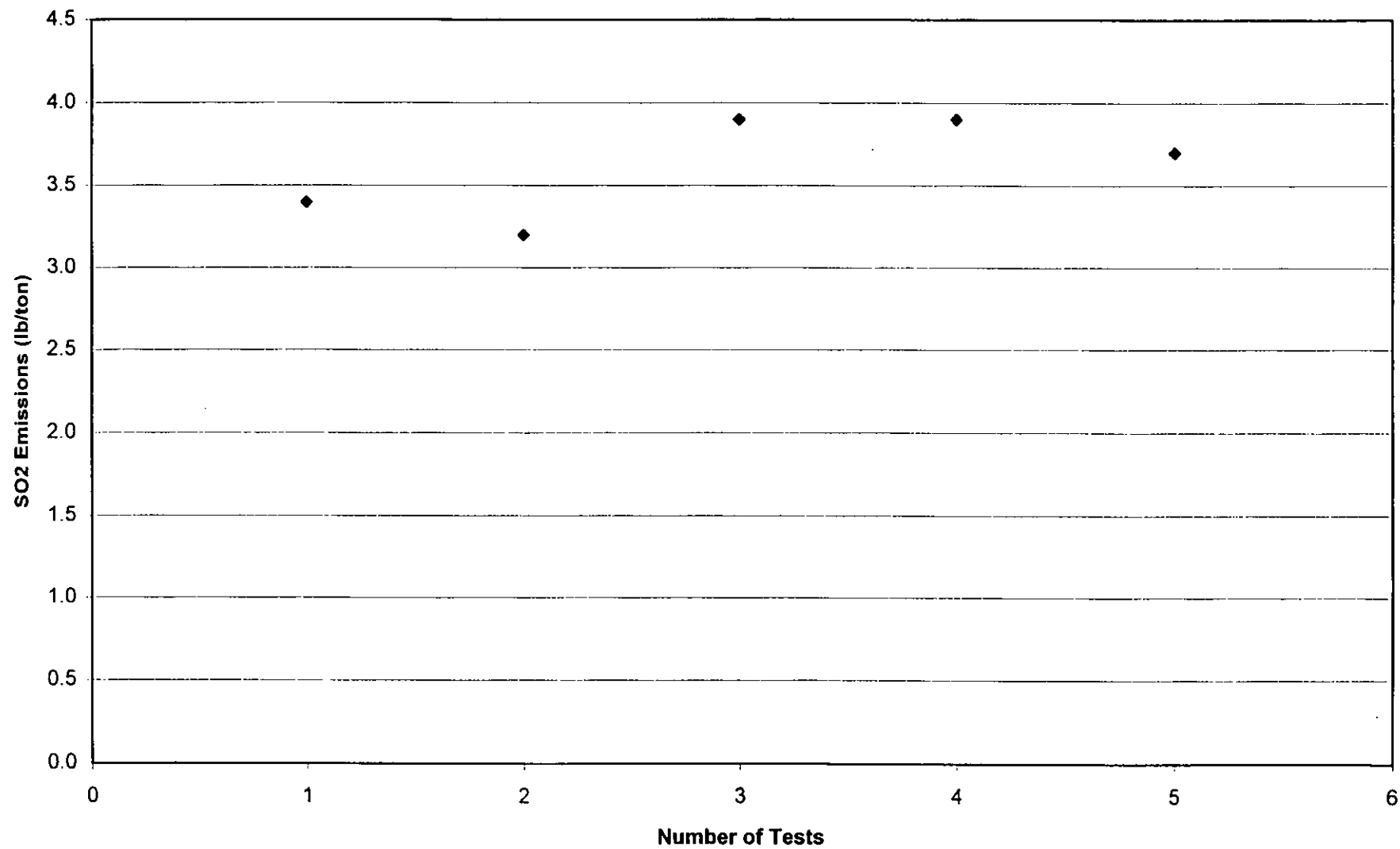


Table 2

STATISTICAL ANALYSIS OF ACID PLANT MIST EMISSIONS

Table 2.a. EPA H2SO4 Test Results

	Source	Test	Factor (lb/T)
1	1	1	0.129
2		2	0.153
3		3	0.132
4	2	1	0.140
5		2	0.082
6		3	0.101
7	3	1	0.124
8		2	0.005
9		3	0.033
10		4	0.036
11		5	0.031
12	4	1	0.119
13		2	0.097
14		3	0.237
15	5	1	0.032
16		2	0.045
17		3	0.048
18	6	1	0.076
19		2	0.138
20		3	0.153
21	7	1	0.037
22		2	0.047
23		3	0.044
24	8	1	0.017
25		2	0.161
26		3	0.130
27	9	1	0.043
28		2	0.010
29		3	0.010
30	10	1	0.017
31		2	0.020
32		3	0.020
33	14	1	0.014
34		2	0.024
35		3	0.054
36		4	0.026
37		5	0.168
38		6	0.093
39		7	0.107
40		8	0.023
41		9	0.032
42		10	0.022
43	15	1	0.014
44		2	0.014
45		3	0.018
46		4	0.013
47		5	0.008
48		6	0.014
49		7	0.016
50		8	0.008
51		9	0.008
52		10	0.008
53	16	1	0.494
54		2	0.301
55		3	0.417
56		4	0.541
57		5	0.358
58		6	0.609
59		7	0.419
60		8	0.201

Count = 60  
 Average = 0.108  
 Median = 0.045  
 Mode = 0.014  
 S.D. = 0.141  
 95% CI = 0.036 +/- 0.108  
 Emission Factor @ 95% 0.073 <EF< 0.144



FIGURE 2.a. EPA ACID MIST DATA

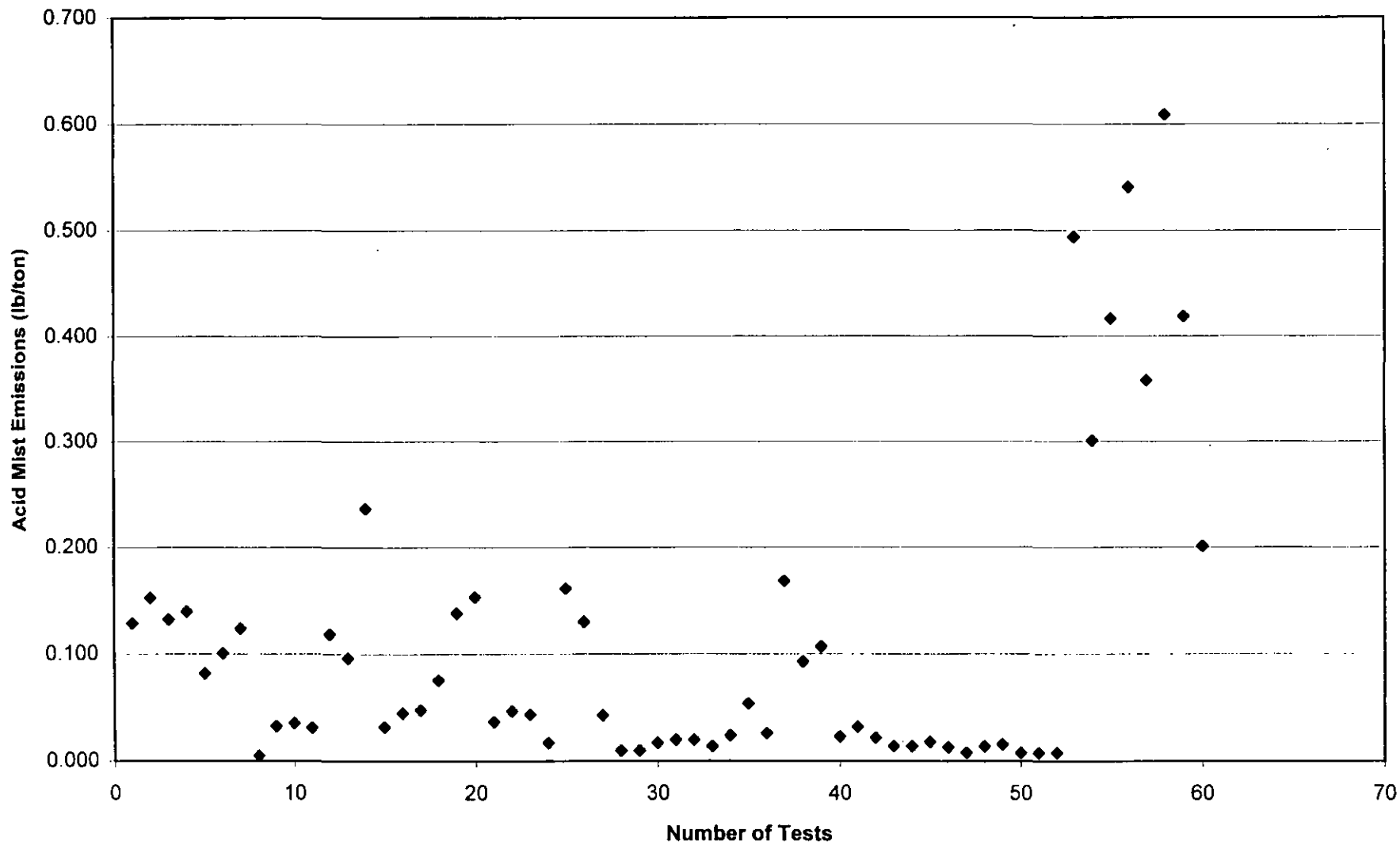


Table 2 (cont)

STATISTICAL ANALYSIS OF ACID PLANT MIST EMISSIONS

Table 2.b. EPA H2SO4 Tests Minus Outliers

	Source	Test	Factor (lb/T)
1	1	1	0.129
2		2	0.153
3		3	0.132
4	2	1	0.140
5		2	0.082
6		3	0.101
7	3	1	0.124
8		2	0.005
9		3	0.033
10		4	0.036
11		5	0.031
12	4	1	0.119
13		2	0.097
14		3	0.237
15	5	1	0.032
16		2	0.045
17		3	0.048
18	6	1	0.076
19		2	0.138
20		3	0.153
21	7	1	0.037
22		2	0.047
23		3	0.044
24	8	1	0.017
25		2	0.161
26		3	0.130
27	9	1	0.043
28		2	0.010
29		3	0.010
30	10	1	0.017
31		2	0.020
32		3	0.020
33	14	1	0.014
34		2	0.024
35		3	0.054
36		4	0.026
37		5	0.168
38		6	0.093
39		7	0.107
40		8	0.023
41		9	0.032
42		10	0.022
43	15	1	0.014
44		2	0.014
45		3	0.018
46		4	0.013
47		5	0.008
48		6	0.014
49		7	0.016
50		8	0.008
51		9	0.008
52		10	0.008

Count = 52  
 Average = 0.061  
 Median = 0.034  
 Mode = 0.014  
 S.D. = 0.057  
 95% CI = 0.015 +/- 0.061  
 Emission Factor @ 95% 0.045 <EF< 0.076

Table 2.c. Cargill #7 Acid Plant H2SO4 Test Results

Test Date	Factor (lb/T)
4/15/93	0.083
3/10/94	0.100
4/11/95	0.026
2/19/96	0.026
5/8/97	0.053

Count = 5  
 Average = 0.058  
 Median = 0.053  
 Mode = 0.026  
 S.D. = 0.033  
 95% CI = 0.029 +/- 0.058  
 Emission Factor (EF) @ 95% 0.028 <EF< 0.087

FIGURE 2.b. CARGILL H2SO4 DATA

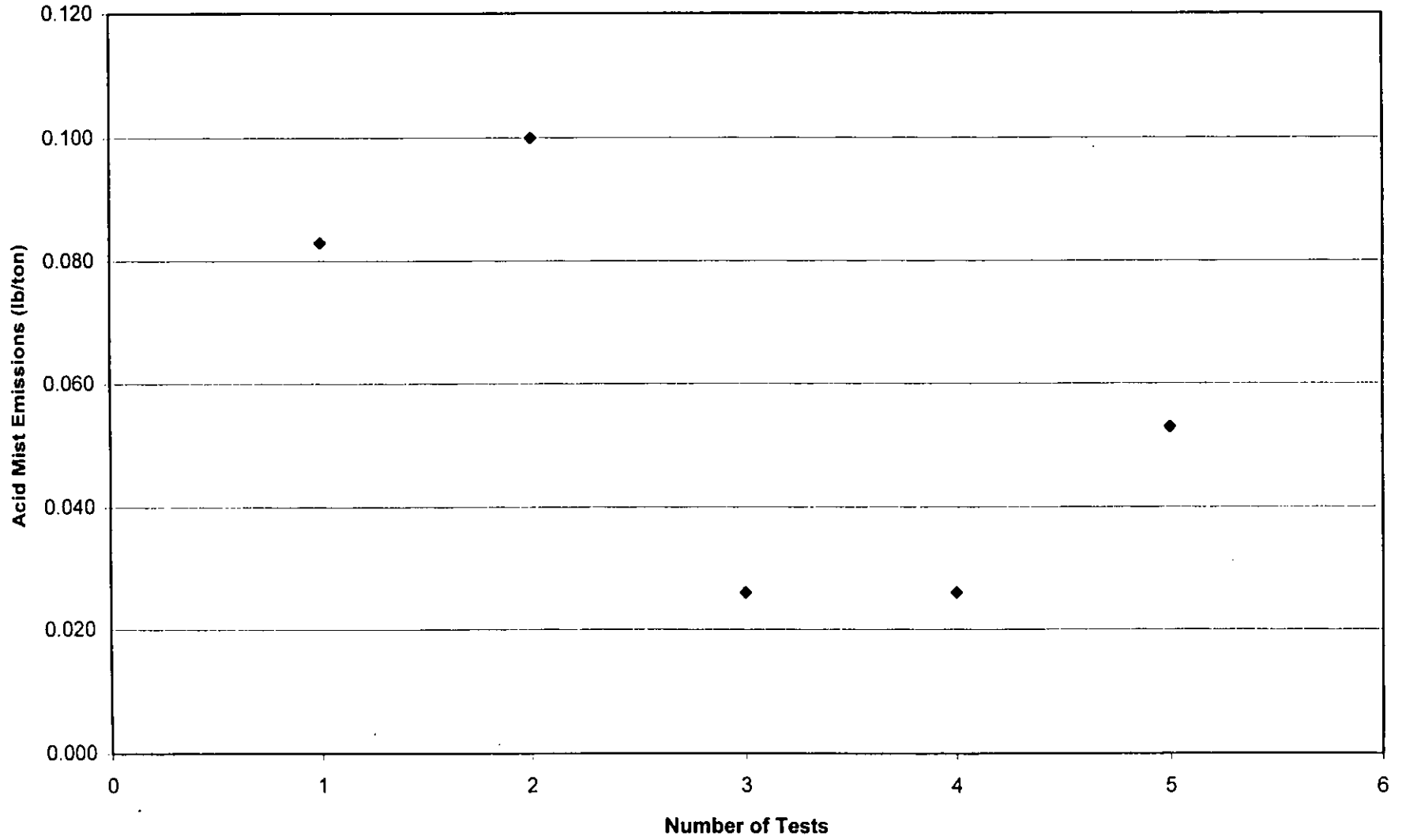


Table 2 (cont)

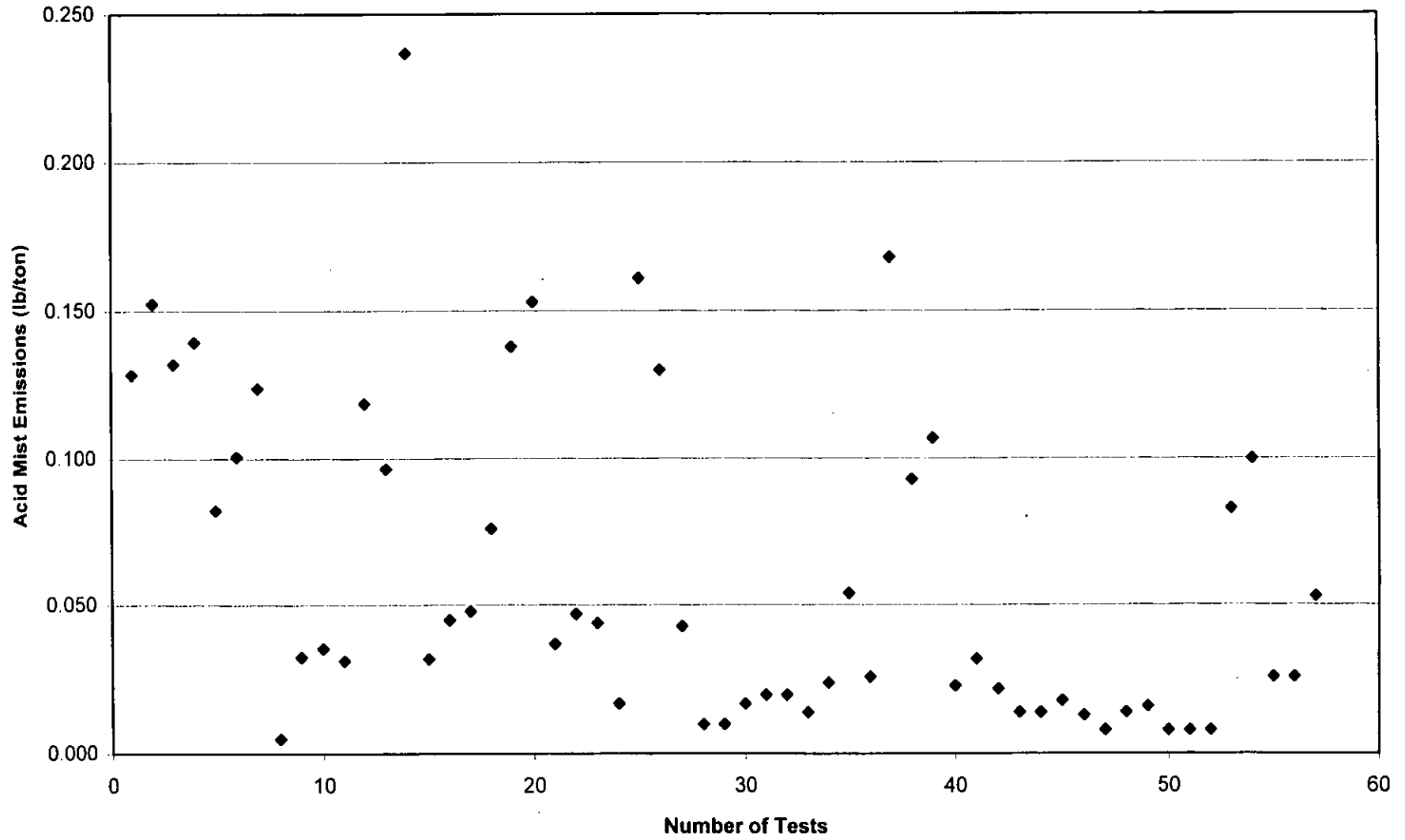
STATISTICAL ANALYSIS OF ACID PLANT MIST EMISSIONS

Table 2.d. EPA H2SO4 Tests Minus Outliers  
 Plus Table 2.c. Cargill #7 Acid Plant H2SO4 Test Results

	Source	Test	Factor (lb/T)
1	1	1	0.129
2		2	0.153
3		3	0.132
4	2	1	0.140
5		2	0.082
6		3	0.101
7	3	1	0.124
8		2	0.005
9		3	0.033
10		4	0.036
11		5	0.031
12	4	1	0.119
13		2	0.097
14		3	0.237
15	5	1	0.032
16		2	0.045
17		3	0.048
18	6	1	0.076
19		2	0.138
20		3	0.153
21	7	1	0.037
22		2	0.047
23		3	0.044
24	8	1	0.017
25		2	0.161
26		3	0.130
27	9	1	0.043
28		2	0.010
29		3	0.010
30	10	1	0.017
31		2	0.020
32		3	0.020
33	14	1	0.014
34		2	0.024
35		3	0.054
36		4	0.026
37		5	0.168
38		6	0.093
39		7	0.107
40		8	0.023
41		9	0.032
42		10	0.022
43	15	1	0.014
44		2	0.014
45		3	0.018
46		4	0.013
47		5	0.008
48		6	0.014
49		7	0.016
50		8	0.008
51		9	0.008
52		10	0.008
53		4/15/93	0.083
54		3/10/94	0.100
55		4/11/95	0.026
56		2/19/96	0.026
57		5/8/97	0.053

Count = 57  
 Average = 0.060  
 Median = 0.036  
 Mode = 1.000  
 S.D. = 0.055  
 95% CI = 0.014 +/- 0.060  
 Emission Factor @ 95% 0.046 <EF< 0.074  
 99.9999% CI = 0.037 +/- 0.060  
 Emission Factor @ 99.999% 0.024 <EF< 0.097

FIGURE 2.c. COMBINED/EDITED H2SO4 DATA





# Department of Environmental Protection

Lawton Chiles  
Governor

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

Virginia B. Wetherell  
Secretary

May 29, 1998

CERTIFIED MAIL - RETURN RECEIPT REQUESTED

Mr. David B. Jellerson, P.E.  
Environmental Superintendent  
Cargill Fertilizer, Inc.  
8813 US Highway 41 South  
Riverview, Florida

Re: File No. 0570008-025-AC (PSD-FL-250)  
Increase Production - SAP No. 7, Riverview

Dear Mr. Jellerson:

We have reviewed the application received on May 1 to increase the capacity of Sulfuric Acid Plant No. 7, Riverview, from 2,200 to 3,200 tons per day. The application is incomplete. We request the following additional information:

1. Please provide a more precise process flow diagram. The one received, for example, shows a single converter whereas there are actually two converters. We plan to refer to the diagram in our technical evaluation of the project.
2. Please provide a more complete listing of the work to be performed to the extent that it is known at this time. Briefly list the changes to be made such as new pumps, tanks, heat exchangers, contact media in the towers, boiler upgrades, etc. so that we can more accurately describe the project in our technical review.
3. Note that the "CS" line of mist eliminators cannot be described as "high efficiency" by the manufacturer's criteria. The high efficiency designation is reserved for the "HE, HE Plus, and ES" lines.
4. Please provide a detailed USGS map showing the location of the fenceline and/or any other physical barriers equivalent to a fence. Also on the same map show the location of the property line and all of the property line receptors used in the air quality impact analysis. If the property line and fenceline receptors do not coincide, further air quality modeling may be needed to complete the air quality impact analysis.
5. Please perform refined SO<sub>2</sub> AAQS modeling similar to the refined SO<sub>2</sub> PSD Class II modeling described in Sections 6.2 and 6.6.3 of the PSD report submitted with the application.

Mr. David B. Jellerson, P.E.  
Page 2  
May 29, 1998

Attached are comments received from the National Park Service (NPS) and the Environmental Protection Commission of Hillsborough County (EPCHC). Please address their questions in addition to those above. In reference to the NPS correspondence note especially their evaluation of sulfuric acid mist (SAM) data supporting an emission limit of 0.10 pounds of SAM per ton of acid produced. In reference to the EPCHC letter note especially their concerns about odor. We expect comments from EPA and will forward them to you when we receive them.

If you have any questions, please call me at (850)921-9523 or Cleve Holladay at (850)921-9530. My E-Mail address is Linero\_A@dep.state.fl.us

Sincerely,



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

AAL/aal

Enclosures

cc: Bill Thomas, DEP SWD  
Brian Beals, EPA  
John Bunyak, NPS  
Jerry Campbell, EPCHC

Is your RETURN ADDRESS completed on the reverse side?

<b>SENDER:</b> ■ 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): 1. <input type="checkbox"/> Addressee's Address 2. <input type="checkbox"/> Restricted Delivery Consult postmaster for fee.
3. Article Addressed to: Mr. David B. Jellerson, PE Carroll Fertilizer 8813 US Hwy 41 S. Riverview, FL 33569	4a. Article Number P 265 659 354	
5. Received By: (Print Name) Roy BURNETT		4b. Service Type <input type="checkbox"/> Registered <input checked="" type="checkbox"/> Certified <input type="checkbox"/> Express Mail <input type="checkbox"/> Insured <input type="checkbox"/> Return Receipt for Merchandise <input type="checkbox"/> COD
6. Signature: (Addressee or Agent) X <i>Roy Burnett</i>		7. Date of Delivery 6-1-98
8. Addressee's Address (Only if requested and fee is paid)		

Thank you for using Return Receipt Service.

PS Form 3811, December 1994

Domestic Return Receipt

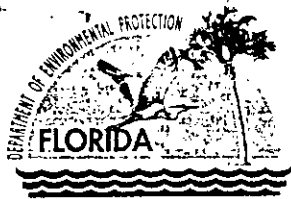
P 265 659 354

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

Sent to		<i>David Jellerson</i>	
Street & Number		<i>Carroll Fert.</i>	
Post Office, State, & ZIP Code		<i>Riverview FL</i>	
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		<i>5-29-98</i>	
		<i>0570008-025-AC</i>	
		<i>PSD-FL-250</i>	

PS Form 3600, 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

May 29, 1998

## CERTIFIED MAIL - RETURN RECEIPT REQUESTED

Mr. David B. Jellerson, P.E.  
Environmental Superintendent  
Cargill Fertilizer, Inc.  
8813 US Highway 41 South  
Riverview, Florida

Re: File No. 0570008-025-AC (PSD-FL-250)  
Increase Production - SAP No. 7, Riverview

Dear Mr. Jellerson:

We have reviewed the application received on May 1 to increase the capacity of Sulfuric Acid Plant No. 7, Riverview, from 2,200 to 3,200 tons per day. The application is incomplete. We request the following additional information:

1. Please provide a more precise process flow diagram. The one received, for example, shows a single converter whereas there are actually two converters. We plan to refer to the diagram in our technical evaluation of the project.
2. Please provide a more complete listing of the work to be performed to the extent that it is known at this time. Briefly list the changes to be made such as new pumps, tanks, heat exchangers, contact media in the towers, boiler upgrades, etc. so that we can more accurately describe the project in our technical review.
3. Note that the "CS" line of mist eliminators cannot be described as "high efficiency" by the manufacturer's criteria. The high efficiency designation is reserved for the "HE, HE Plus, and ES" lines.
4. Please provide a detailed USGS map showing the location of the fenceline and/or any other physical barriers equivalent to a fence. Also on the same map show the location of the property line and all of the property line receptors used in the air quality impact analysis. If the property line and fenceline receptors do not coincide, further air quality modeling may be needed to complete the air quality impact analysis.
5. Please perform refined SO<sub>2</sub> AAQS modeling similar to the refined SO<sub>2</sub> PSD Class II modeling described in Sections 6.2 and 6.6.3 of the PSD report submitted with the application.

Mr. David B. Jellerson, P.E.  
Page 2  
May 29, 1998

Attached are comments received from the National Park Service (NPS) and the Environmental Protection Commission of Hillsborough County (EPCHC). Please address their questions in addition to those above. In reference to the NPS correspondence note especially their evaluation of sulfuric acid mist (SAM) data supporting an emission limit of 0.10 pounds of SAM per ton of acid produced. In reference to the EPCHC letter note especially their concerns about odor. We expect comments from EPA and will forward them to you when we receive them.

If you have any questions, please call me at (850)921-9523 or Cleve Holladay at (850)921-9530. My E-Mail address is Linero\_A@dep.state.fl.us

Sincerely,



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

AAL/aal

Enclosures

cc: Bill Thomas, DEP SWD  
Brian Beals, EPA  
John Bunyak, NPS  
Jerry Campbell, EPCHC

**Golder Associates Inc.**

6241 NW 23rd Street, Suite 500  
Gainesville, FL 32653-1500  
Telephone (352) 336-5600  
Fax (352) 336-6603



June 11, 1998

Mr. A. A. Linero, P.E.  
New Source Review Section  
Florida Department of Environmental Protection  
2600 Blair Stone Road  
Tallahassee, FL 32399-2400

**RECEIVED**

JUN 12 1998

BUREAU OF  
AIR REGULATION

RE: Cargill Fertilizer, Inc.  
File No. 0570008-025-AC (PSD-FL-250)  
Riverview - No. 7 Sulfuric Acid Plant  
Production Rate Increase

Dear Mr. Linero:

The purpose of this correspondence is to respond to the Department's letter dated May 29, 1998, concerning the above referenced request, and in follow up to our recent conversations. The Department's letter contained comments from the Hillsborough County Environmental Protection Commission (HCEPC) and the National Park Service (NPS). All of these comments are responded to below, in the same order as they appear in the letter.

**Responses to FDEP Comments**

1. A more detailed process flow diagram is attached.
2. The scope of this project includes the following:
  - Replace drying tower, packing, distributor, distributor piping, and mist eliminator;
  - Replace blower;
  - Modify burner and increase sulfur capacity;
  - Install new boiler and modify existing boiler;
  - Install new converter for passes 1 and 4;
  - Modify existing converter to parallel passes 2 and 3;
  - Increase catalyst loading;
  - New and/or modified heat exchangers, superheaters, economizers;
  - Modify Interpass Tower mist eliminator and distributor;
  - Modify Final Tower with new packing and mist eliminator;
  - Modify boiler feed water system and steam system.
3. Comment is noted.

9837526/02

4. Attached is a USGS map showing the locations of the fencelines and other physical barriers. The physical barriers associated with the Cargill facility include the following:

- \* the closed gypsum stack, located on the northern portion of the site
- \* a fence located along the eastern edge of the property (west side of the railroad tracks)
- \* Tampa Bay, located to the west and southwest of the site
- \* the Alafia River, located to the south of the site
- \* a fence running along the west side of Williams Park (located in the southeast corner of the site)

All of these are depicted on the map. The fenceline receptors used in the modeling are also shown. As shown, all fenceline receptors coincide approximately with the property boundaries, except for the southeast corner of the property. In this area, the Williams Park boundaries were not accounted for in the modeling. As a result, two additional receptors were added along the park boundary for the AAQS analysis. These are depicted with a different symbol in the second figure attached, which is a larger scale map of the southeast corner. The additional modeling shows that no violations or exceedances of the AAQS are predicted at these two receptors. Model input/output files are included on the enclosed diskette.

5. Refined modeling has been performed for the SO<sub>2</sub> AAQS, similar to the PSD Class II modeling described in Sections 6.2 and 6.6.3 of the PSD report. Based on the SO<sub>2</sub> AAQS screening air modeling results, refinements were performed in six areas. A summary of the maximum refined AAQS impacts are presented in the attached Table 1. The maximum predicted annual, 24-hour, and 3-hour concentrations exceed the AAQS and are located in the area from 5 to 7 km north of the Cargill Riverview site. The additional modeling did not identify any model-predicted violations to which the proposed Cargill project was a significant contributor (i.e., greater than 1  $\mu\text{g}/\text{m}^3$ , annual average; 5  $\mu\text{g}/\text{m}^3$ , 24-hour average average; or 25  $\mu\text{g}/\text{m}^3$ , 3-hour impact). A disk copy of the refined modeling analysis including the EVENT modeling files is attached.

### **Responses to National Park Service Comments**

#### **Comment on 0.10 lb/ton SAM limit:**

The NPS has performed an evaluation of sulfuric acid mist (SAM) emissions based on EPA data from a 1992 report, and evaluation of Cargill's test data. From this evaluation, NPS concludes that a SAM emission limit of 0.10 lb/ton of 100% sulfuric acid should be achievable. NPS states that they will not challenge the lack of a complete BACT analysis for this project, if Cargill is limited to not more than 0.10 lb/ton for SAM. This is stated even though the NPS AQRV

analysis concludes that there will be no expected effects at the proposed limit of 0.15 lb/ton. Therefore, there appears to be no environmental reason for limiting the SAM emissions below 0.15 lb/ton.

In addition, there is no argument from NPS over the control technology to be employed by Cargill, i.e., Monsanto type CS mist eliminator elements (or equivalent). The only concern is over the permit limit. It is noted that the mist eliminators are "passive" control devices, i.e., they are not dependent upon plant operators, water flow, electricity, etc., their effectiveness. Therefore, the mist eliminators will achieve a level of effectiveness and level of emissions that is independent of whatever permit limit is set. Therefore, although the actual SAM emissions from the modified plant may be lower than the 0.15 lb/ton level, there is no overriding reason to set a limit lower than 0.15 lb/ton. Setting such a limit will not result in increased actual emissions, nor will setting a lower limit result in lower actual emissions.

Also it should be noted that emissions from the modified system will not necessarily be lower than from the existing system. The proposed project will include replacement of the existing mist eliminators and increasing the total mist eliminator area. Although total air flow through the system will increase with the increased production rate, the air velocity at the mist eliminators will decrease slightly. Therefore, there is not likely to be any improvement in mist eliminator efficiency due to increased velocities, since efficiency decreases as velocity decreases with the impaction type mist eliminators.

In order to achieve a lower SAM emission rate, the brownian diffusion mist eliminators were considered. But, the brownian diffusion mist eliminator elements require a much lower velocity than impaction type elements. Therefore, the brownian elements are both larger and more numerous. With the impaction type device, 16 impaction elements, each 26" diameter by 40" long, would be required for the final tower. These will fit inside a 13' tall vessel that will match the final tower diameter and rest on top of the tower. In contrast, the brownian diffusion elements would number 80 candles of 2' diameter by 12' long. These would require a 27' diameter by 25' tall vessel. A vessel this large placed on top of the existing final tower will place such a large structural load on the tower due to wind load, that it would be structurally unsound. Therefore, this would require a replacement final tower. The total cost of a new final tower, new brownian diffusion mist eliminators and demolition of the existing final tower is approximately \$2,000,000. Comparatively, the total cost of expanding the existing final tower and installing new impaction mist eliminators is approximately \$200,000, for a differential cost of \$1,800,000. Applying a capital recovery cost over 10 years, the annual cost of equipment and installation only is approximately \$300,000/yr. Operation and maintenance costs would be in addition to this

Mr. A. A. Linero, P.E.

Page 4

June 11, 1998

annual cost. Assuming the brownian device would reduce SAM emissions to 0.10 lb/ton, versus 0.15 lb/ton for the impaction device, the emission reduction would be 29.2 TPY. Thus, the cost effectiveness is estimated at \$10,200/yr. This cost is considered unreasonable and infeasible for this modification.

#### **Comment on Mississippi Phosphates Limit**

It is noted that in the case of Mississippi Phosphates, our research has indicated that the SO<sub>2</sub> limit in the permit is 4.0 lb/ton, but a lower annual average limit was taken in order to avoid PSD review. Apparently, the TPY emission limit equates to an average lb/ton emission rate of 3.16 lb/ton, but this lb/ton emission rate is not an enforceable limit.

#### **Responses to HCEPC Comments**

1. This comment is an ongoing concern of the HCEPC. However, the concern is unfounded. The issue of contemporaneous increases and decreases in emissions due to the proposed project was discussed in the application. Further, HCEPC continues to misinterpret the PSD rules. The PSD rules require BACT to be applied only to those emission units which are being physically modified as part of the project, or for which there results in a change in the method of operation (a change in the method of operation does not include an increase in the hours of operation or the production rate, provided there is not a federally enforceable limitation on such which is being relaxed). Since no other emission units are being affected in this manner, BACT would not apply to any other emission units, even if emissions increases from such units had to be aggregated with the proposed project because they were contemporaneous.

2. Since No. 2 fuel oil is used in very small quantities, for plant startups only, there is no reason to limit the sulfur content to less than 0.5%.

3. CF apparently uses ammonia scrubbing because they have a single absorption plant with much higher uncontrolled emissions compared to Cargill's double absorption plant. The ammonia scrubbing is probably required in order to meet the minimum NSPS requirement of 4.0 lb/ton. Cargill addressed the issue of add-on FGD systems, and dismissed them on the basis of economics, similar to another recently issued BACT for a sulfuric acid plant.

Regarding the odor complaint issue, there is no evidence that the listing of complaints attached to the HCEPC comments have any relation to the subject project. Cargill is familiar with many of the events and are aware that the HCEPC investigations have rarely confirmed any odor related to the Cargill sulfuric acid production process. For events where the HCEPC record does seem to correlate

9837526/02

Mr. A. A. Linero, P.E.

Page 5

June 11, 1998

the complaint to our sulfuric acid production process, Cargill has found factual errors in the HCEPC investigations.

For example, Cargill reviewed the HCEPC record for the most recent complaint number 45111A dated April 30, 1998. In a letter that the HCEPC sent to the individual filing the complaint, reference was made to odor occurring on March 25th and April 18th. For these events, the HCEPC stated that Cargill was in the process of starting up sulfuric acid plants at the time of the detected odor and attributed the odors to this operation. However, the reality is that at the time of these complaints, all of Cargill's sulfuric acid plants were operating normally and none of them were in start-up conditions. The wind direction information provides further evidence that the detected odors could not have originated from the Cargill facility. The wind direction at the time of the detected odors was not mentioned in the HCEPC letter. However, on March 25th at the time the odor was detected at the Shell's Restaurant in Brandon, the wind was blowing out of the north. Since the Cargill facility is located approximately 7 miles southwest from the location of the detected odor, there must have been another source involved. Similarly, the April 18th complaint of odor in Riverview was at a location approximately 5 miles east of the Cargill facility, while the wind was blowing from the north. Again, the source of the odor could not have been the Cargill facility.

Cargill is also unclear as to why the HCEPC comment letter includes listing of odor complaints which clearly area not related to Cargill's operations. For example, complaint number 40873W on 10/13/94 refers to odor complaints related to a mobile home park wastewater treatment plant. Also, complaint number 46397A is from Kathy Edgemon, a Cargill environmental department employee who was calling the HCEPC to report a sulfur fire. Clearly, this wasn't an odor complaint related to the sulfuric acid plant. Finally, twenty of the listed complaints were from a single individual (Mr. Lay), who, as the HCEPC was aware, was interested in selling some property to Cargill. These complaints were specifically directed at Cargill's phosphogypsum stack operations, not the sulfuric acid production plants. These complaints stopped once Cargill purchased the subject property adjacent to the gypsum stack.

It is clear from the HCEPC records that there is insufficient evidence that the sulfuric acid plant operations are a source of community odor problems. Certainly, there is no basis to use odor complaints as support for installation of costly ammonia scrubbers on the expanded plant. Further, it should be noted that the Cargill facility is located between two large coal-fired power plants with much greater emissions of sulfur dioxide. Even if Cargill were to cease operations entirely, total SO<sub>2</sub> emissions in Hillsborough County would decrease by less than 2 percent.

4. The PSD rules require that fugitive emissions be taken into account only when such emissions are

9837526/02

Mr. A. A. Linero, P.E.

Page 6

June 11, 1998

quantifiable. To our knowledge, there is not a method to accurately quantify these emissions. In addition, such quantification, if possible, would not change the PSD applicability analysis, since the project is already subject to PSD review for SO<sub>2</sub> and SAM.

5. Our SO<sub>2</sub> air modeling analysis included this project and the Piney Point project. The results, presented in the PSD application, also indicated numerous exceedances and violations of the SO<sub>2</sub> ambient air quality standards at a number of different locations around Tampa, as well as exceedances of the allowable PSD Class II increment and of the PSD Class I increment at Chassahowitzka NWR. It is our understanding that the DEP's air modeling analysis found essentially the same results. There is no discrepancy in the results.

6. The potential downwash effects from the gypsum stack were not address in the PSD application but have been discussed at length with the FDEP modeling staff (along with the HCEPC) in the past. The closest approach of the gypsum stack to the SAP stacks is over nine gypsum stack heights in distance. Currently, the computer program used to determine whether a structure has the potential to cause downwash on a stack, EPA's Building Profile Input Program (BPIP) only considers "squat-shaped" structures that are within five structure height's distance from a specific stack. As there is an additional four-structure-height distance buffer in this case, and because of the distance of the gypsum stack and it rounded edges, the wind field emanating from the gypsum stack towards the SAP stacks would follow the terrain. Proper application of EPA modeling procedures, along with modeling professional's opinions, rule out consideration of downwash effects of the gypsum stack in this case.

7. Based on the PSD regulations, the project can be exempted from the preconstruction monitoring requirements. In addition, there is adequate existing monitors in the area to provide necessary monitoring data for use in the application.

8. Our main source(s) of emission and stack data comes from the FDEP and other modeling analysis performed in the Tampa Bay area. We have used permitted emission rates (not actual emissions) for permitted sources, whether they are active or not. Therefore, some of the data may not be as current as are Hillsborough County's records and knowledge of the area's sources. and we most certainly would prefer not to include an additional 28,000 TPY of SO<sub>2</sub> per year in the modeling analysis, that is actually not being emitted. If that figure is accurate, our modeling results are more conservative than we thought. However, we are also aware that the DEP modeling staff has also modeled the Tampa Bay area recently, and since the DEP is a primary source of our information, we would hope that our source inventory closely matches that of the Department's, at least for the major sources.

9837526/02



Mr. A. A. Linero, P.E.

Page 7

June 11, 1998

9. We are unaware of the existence of more recent years of meteorological data for air dispersion modeling that is currently available for Tampa International Airport beyond year 1991. The 1987-1991 data set is the latest meteorological record that has been made available on the EPA Technical Transfer Network (TTN) internet web site, and has also been used in previous modeling studies in the Tampa Bay area. These data are considered to be an acceptable data set for regulatory purposes. Also, many NWS offices around the US, including the one located at Tampa International Airport, have started using the Automated Surface Observation System (ASOS) to collect routine surface observations. Our experience with ASOS-collected data is that, by itself, the data are not acceptable for processing for air modeling purposes. One problem is that one or more key parameters, used for processing, are no longer being collected, while values for other parameters are changed.

10. No response required.

11. Emissions units that have received a determination of best available control technology (BACT) are not subject to RACT per Rule 62-296.700. In addition, Cargill is unaware of any sulfuric acid plant in the state for which SAM emissions have also been considered to be PM and regulated as such.

This information should provide the Department with the information needed to process the permit application. If you require anything further, please do not hesitate to call.

Sincerely,

*David A. Buff*

David A. Buff, P.E.  
Principal Engineer  
Florida P.E. #19011  
S E A L

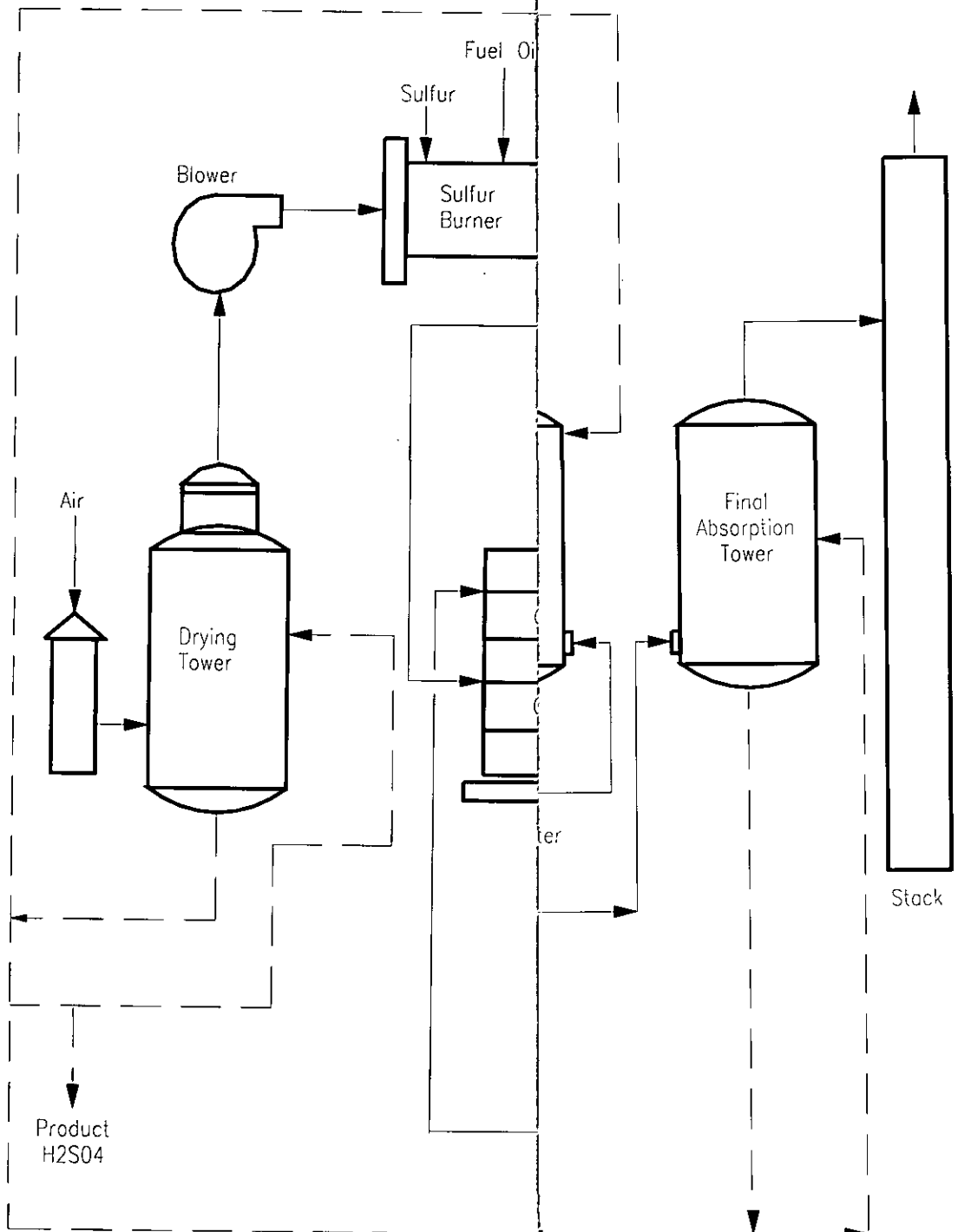
DB/db

cc: David Jellerson, Cargill  
Kathy Edgemon, Cargill  
Sam D. Hamilton, NPS  
Jerry Campbell, HCEPC

cc: C. Holladay, BAR  
A. Linero, BAR  
EPA

SWD  
PELK Co.  
J. Reynolds, BAR

9837526/02



REVISION BY: K.E.  
 REVISION DATE: 06/08/98  
 FILENAME: 7CAP.DWG

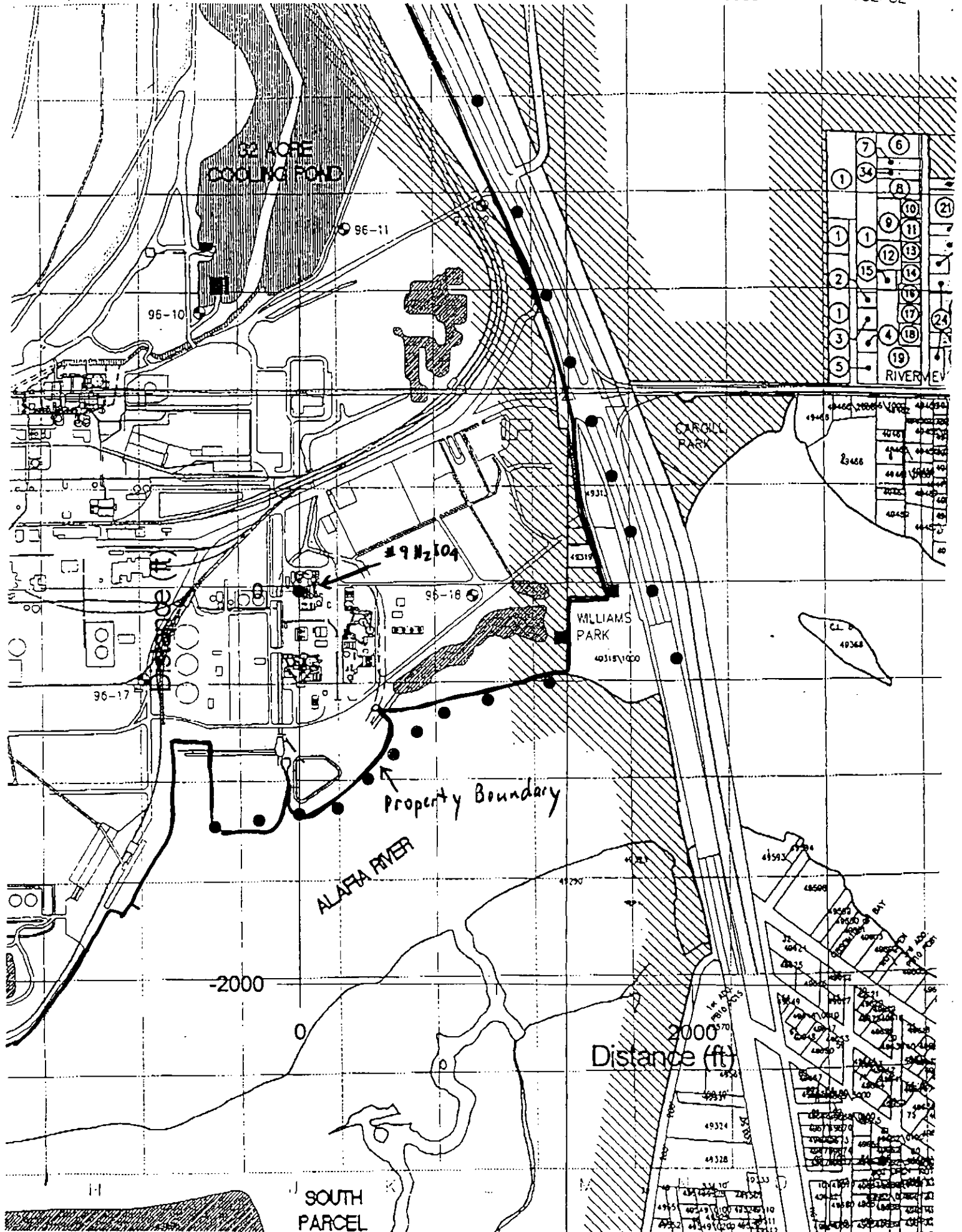
Table 1. Maximum Predicted SO<sub>2</sub> Concentrations as Compared With AAQS - Refined Analysis

Averaging Time	Concentration (ug/m <sup>3</sup> )			Receptor Location <sup>a</sup>		Period Ending (YYMMDDHH)	Florida AAQS (ug/m <sup>3</sup> )
	Total	Modeled	Background	Direction (degrees)	Distance (m)		
Annual	65	61	4	358	5100	87123124	60
24-Hour <sup>b</sup>	335	321	14	360	5500	91051424	260
3-Hour <sup>b</sup>	1,493	1,468	25	330	6900	89071012	1,300

Note: YY=Year, MM=Month, DD=Day, HH=Hour

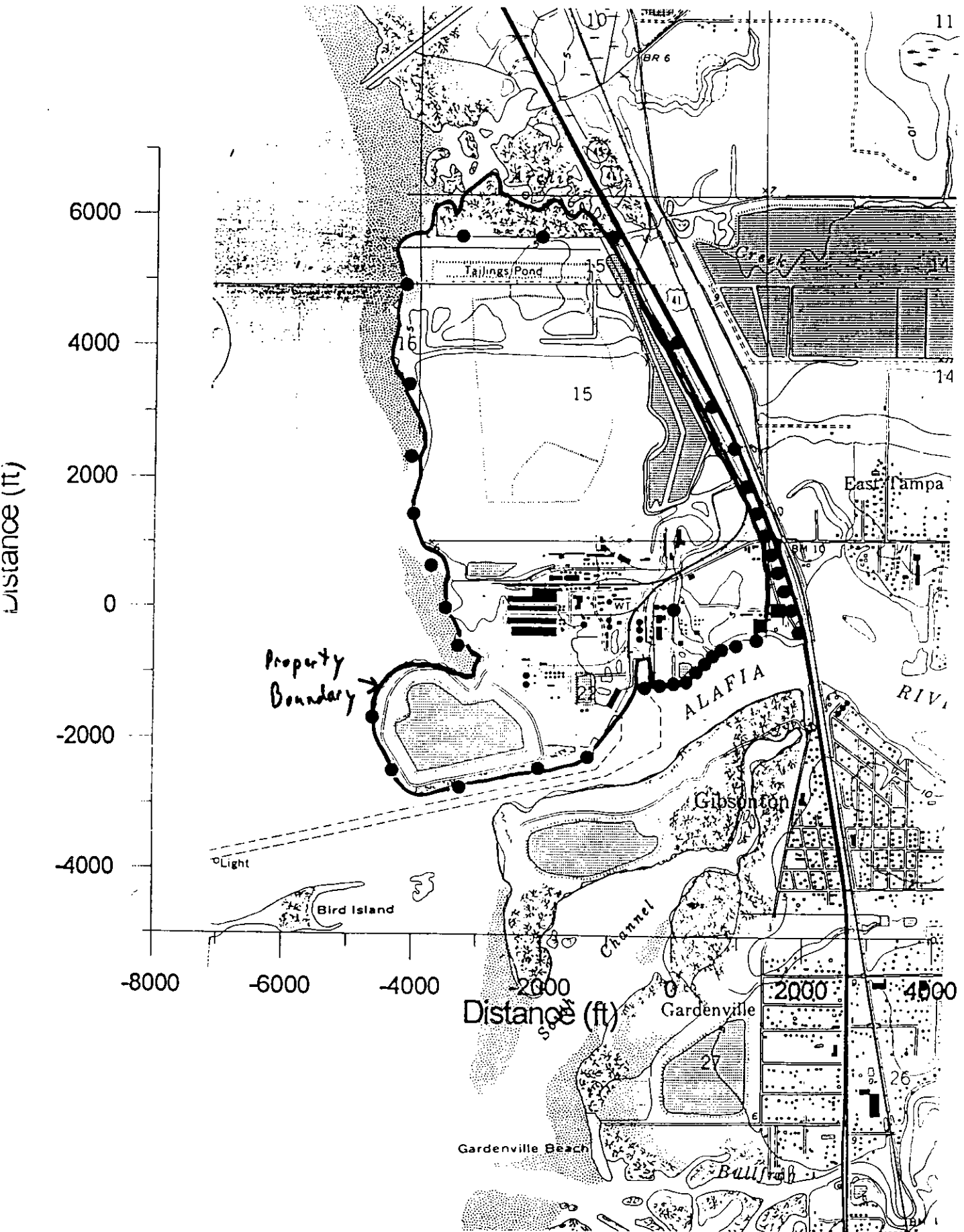
<sup>a</sup> Receptors locations are relative to the H<sub>2</sub>SO<sub>4</sub> No. 9 plant stack location.

<sup>b</sup> All short-term concentrations are highest, second-highest concentrations predicted with 5 years of hourly meteorological data.



SOUTH PARCEL

1" = 618.384'





# Department of Environmental Protection

Lawton Chiles  
Governor

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

Virginia B. Wetherell  
Secretary

July 10, 1998

CERTIFIED MAIL - RETURN RECEIPT REQUESTED

Mr. David B. Jellerson, P.E.  
Environmental Superintendent  
Cargill Fertilizer, Inc.  
8813 US Highway 41 South  
Riverview, Florida 33569

Re: File No. 0570008-025-AC (PSD-FL-250)  
Increase Production - SAP No. 7, Riverview

Dear Mr. Jellerson:

We have reviewed the responses to our incompleteness letter dated May 29 regarding expansion of Sulfuric Acid Plant No. 7, Riverview, from 2,200 to 3,200 tons per day. We request the following additional information:

1. Any comments regarding the attached letter from the Environmental Protection Commission of Hillsborough County.
2. More information is needed to allow the Department to determine the extent of the ambient air exemption on Cargill's property. 40 CFR Part 50.1(e) defines ambient air as "...that portion of the atmosphere, external to buildings, to which the general public has access." The exemption from ambient air is available only for the atmosphere over land owned or controlled by the source and to which public access is precluded by a fence or other physical barriers. For example, receptors should be included over bodies of water, unfenced plant property, over roadways, and over property owned by other sources. As shown in the USGS map you provided the Cargill facility has boundaries along Tampa Bay and the Alafia River. A river or a bay may form a sufficient natural/physical boundary and not require fencing along it if some conditions are met. The banks of the river or bay must be clearly posted and regularly patrolled by plant security. It must be very clear that the area is not public. Any areas where there is any question--i.e., grassy areas, etc.--should be fenced and marked, even if there is a very remote possibility that the public would attempt to use the property. Any property at your facility that does not have a definitive boundary precluding access to the public must be included in the air quality impact analysis and additional modeling to determine these impacts must be done to show that there are no predicted AAQS or increment violations.

If you have any questions, please call me at (850)921-9523 or Cleve Holladay at (850)921-9530. My E-Mail address is [Linero\\_A@dep.state.fl.us](mailto:Linero_A@dep.state.fl.us)

Sincerely,

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

AAL/aal  
Enclosures

cc: Bill Thomas, DEP SWD  
Brian Beals, EPA  
John Bunyak, NPS  
Jerry Campbell, EPCHC

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

COMMISSION

DOTTE BERGER  
JOE CHILUTA  
CHRIS HART  
JIM NORDMAN  
JAN PLATT  
THOMAS SCOTT  
ED TURANCHIK

EXECUTIVE DIRECTOR

ROGER P. STEWART



ADMINISTRATIVE OFFICES, LEGAL &  
WATER MANAGEMENT DIVISION  
1000 - 9TH AVENUE  
TAMPA, FLORIDA 33605  
TELEPHONE (813) 272-5960  
FAX (813) 272-5157

AIR MANAGEMENT DIVISION  
TELEPHONE (813) 272-5530

WASTE MANAGEMENT DIVISION  
TELEPHONE (813) 272-5788

WETLANDS MANAGEMENT DIVISION  
TELEPHONE (813) 272-7104

ENVIRONMENTAL PROTECTION COMMISSION  
OF HILLSBOROUGH COUNTY

FAX TRANSMITTAL SHEET

DATE: 7/10/98

TO: AI Macro

FAX PHONE: Speed VOICE PHONE: SC 278-1344

TOTAL NUMBER OF PAGES INCLUDING THIS COVER PAGE: 4

EPC FAX TRANSMISSION LINE: (813) 272-5605  
FOR RETRANSMISSION OR ANY FAX PROBLEMS, CALL: (813) 272-5530

FROM: Rick Kirby  
(CIRCLE APPLICABLE SECTION BELOW)

- AIR DIVISION
- ENFORCEMENT
- ENGINEERING
- SUPPORT OPERATIONS

SPECIAL INSTRUCTIONS: Cargill (#7) Acid Plant  
PSD comments

DOTIE BERGER  
JOE CHILLURA  
CHRIS HART  
JIM NORMAN  
JAN PLATT  
THOMAS SCOTT  
ED. TURANCHIK

**EXECUTIVE DIRECTOR**

ROGER P. STEWART



1900 9TH AVENUE  
TAMPA, FLORIDA 33605  
TELEPHONE (813) 272-5960  
FAX (813) 272-5157

AIR MANAGEMENT DIVISION  
TELEPHONE (813) 272-5630

WASTE MANAGEMENT DIVISION  
TELEPHONE (813) 272-5788

WETLANDS MANAGEMENT DIVISION  
TELEPHONE (813) 272-7104

MEMORANDUM

DATE: July 10, 1998

TO: Al Linero, P.E.

FROM: *RR* Richard C. Kirby, IV, P.E. THRU: Jerry Campbell, P.E.

SUBJECT: Cargill Fertilizer, Inc. #7 Sulfuric Acid Plant (0570008-025-AC)

EPC staff has reviewed the June 11, 1998 letter from Golder Associates responding the FDEP incompleteness letter dated May 29, 1998. Below are issues with which EPC still has concerns.

1. EPC still believes the State and Federal PSD regulations call for BACT level controls for emission units upstream and downstream of the unit to be physically modified. Rule 62-212.400(5)(c) states, "The proposed facility or modification shall apply Best Available Control Technology (BACT) for each pollutant subject to preconstruction review requirements as set forth in Rule 62-212.400(2)(f), F.A.C." Clearly if the increased production results in a net significant increase of, for example, Fluorides, BACT cannot be applied for this pollutant at the sulfuric acid plant. EPC has requested guidance on this issue from EPA Region IV. We hope to receive word soon.
2. EPC disagrees that there is no need to limit sulfur content in fuel oil due to the small amount used in this process. Cargill is currently requesting multiple modifications at different units. A reduction in fuel sulfur content at all operations could significantly reduce PM and SO<sub>2</sub> emissions.
3. EPC still asserts that it is appropriate to look closely at add on controls, i.e., FGD scrubbers, given the high SO<sub>2</sub> levels both modeled and recorded in the area.
4. We strongly disagree with Mr. Buff that there is sufficient evidence that the operations of the Sulfuric Acid Plants (SAPs) are a source of community odor problems. It is clear to us that Cargill and TECO are the most likely sources of the odor problems in the area, and believe that the FDEP should consider the impact that **any** modifications to their respective facilities will have





Al Linero, P.E.

July 10, 1998

Page 2

to the air quality in the area. Our ambient monitors and the FDEP's own modeling results show that there may be exceedances of the NAAQS for SO<sub>2</sub> in the area and since TECO and Cargill are the largest SO<sub>2</sub> emitters in the area, we believe the best way to address the problem is a SIP call, and to consider the odor issues during the current review process.

As far as factual errors in our complaint investigations, we did receive calls from Cargill employees notifying us of start-ups at the SAPs on those dates. Cargill's current operating permits require that the EPC be notified promptly during start-ups, shut-downs, and malfunctions. Our policy has been to allow Cargill to telephone in the notifications. However, if we are receiving inaccurate information over the telephone, then the FDEP should consider whether written notification from the responsible official should be required in the future, and included as a requirement in any proposed permit.

Contrary to Mr. Buff's statements, we never stated to the complainant (See attached letter) that the odors were attributable to Cargill. We simply informed the complainant that we were unable to verify his complaint, but stated that Cargill, according to our records, was in the process of starting up their SAPs on the days in question, and the odors he observed may have been caused by Cargill's SAPs. Mr. Buff failed to mention that we also stated in the letter that, according to our records, Cargill was operating in compliance with their permit, and was not the only source in the area that could have been responsible for the odors.

Mr. Buff is correct, the wind speed was not mentioned because it was inconclusive. We did not state unequivocally that the odors could not have originated from Cargill because our monitors in the area indicated that the wind directions were variable (NE on 03/25/98 and WSW on 04/18/98) at the time of the complaints, the odors could have been the result of an extended event on some days and not on others. Our letter was in response to several complaints that Cargill may or may not have been aware of as we stated in our comment to FDEP.

It does appear that the October 13, 1994 complaint (#40873W) was inadvertently included, and complaint #46397A was a notification and not a complaint. However, whether Mr. Lay was trying to sell or did sell his property to Cargill is immaterial. At the time the complaints were received, we investigated each one and evaluated it on its own merits. The complaints are relevant because the phosphogypsum stack is a source of odors, and any permitted increases in sulfuric acid production could result in more phosphogypsum being pumped to the stack and other complaints from nearby residents.

Our intent in including the complaints in the comments was not to insinuate that Cargill is solely responsible for all the odor complaints in the area, but to make the FDEP aware of the existence

Al Linero, P.E.

July 10, 1998

Page 3

of these complaints, and the need to address the impact this proposed modification will have on the air quality in an area that may be exceeding the SO<sub>2</sub> NAAQS.

5. EPC still asserts that liquid mist is included in the definition of particulate matter, as stated previously. Based on our analysis of the application and our experience with this type of operation, the proposed equipment can meet the 5% opacity requirements of PM RACT and probably should be required to.

6. Page 18 of the application was not attached to the response which we received.

Thank you for the opportunity to provide comments.

mjh

Is your RETURN ADDRESS completed on the reverse side?

**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):

- 1.  Addressee's Address
- 2.  Restricted Delivery

Consult postmaster for fee.

3. Article Addressed to:  
  
Mr. David B. Jellerson, P.E.  
Environmental Superintendent  
Cargill Fertilizer, Inc.  
8813 Highway 41 South  
Riverview, FL 33569

4a. Article Number  
P 265 659 383

4b. Service Type  
 Registered  Certified  
 Express Mail  Insured  
 Return Receipt for Merchandise  COD

7. Date of Delivery  
7/15/98

5. Received By: (Print Name)  
ROY BURNETT

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

6. Signature: (Addressee or Agent)  
X *ROY BURNETT*

Thank you for using Return Receipt Service.

PS Form 3811, December 1994

Domestic Return Receipt

P 265 659 383

US Postal Service  
**Receipt for Certified Mail**

No Insurance Coverage Provided.  
Do not use for International Mail (See reverse)

Sent to	
Mr. David B. Jellerson, P.E.	
Street & Number	
8813 U.S. Highway 41 South	
Post Office, State, & ZIP Code	
Riverview, FL 33569	
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	7/10/98
0570008-025-AC	
SD-FL-250	

PS Form 3800, April 1995



**CARGILL  
FERTILIZER, INC.**

**RECEIVED**

JUL 20 1998

**BUREAU OF  
AIR REGULATION**

8813 Highway 41 South - Riverview, Florida 33569 - Telephone 813-677-9111 - TWX 810-876-0648 - Telex 52666 - FAX 813-671-6146

July 20, 1998

**Hand Delivered**

Mr. A. A. Linero, P.E.  
New Source Review Section  
Florida Department of Environmental Protection  
2600 Blair Stone Road  
Tallahassee, FL 32399-2400

RE: Cargill Fertilizer, Inc.  
File No. 0570008-025-AC (PSD-FL-250)  
Riverview - No. 7 Sulfuric Acid Plant  
Production Rate Increase

Dear Mr. Linero:

Following are the responses to your July 10, 1998 letter regarding the above-referenced permit application. The responses are numbered the same as the items in your letter.

1. Comments on the FAXed Memorandum from the Environmental Protection Commission of Hillsborough County (EPC):

EPC#1 - We have already responded to this issue in previous responses and are aware that the EPC has written directly to the EPA for guidance. This question raises two distinct issues. The first issue relates to whether, if a modification "debottlenecks" a source, the source must include emissions increases due to debottlenecking in determining if there is a significant net emissions increase and PSD NSR applies. The second issue relates to the applicability of best available control technology (BACT) to all emission units that contribute to a significant net increase in emissions. These two issues are again addressed below.

To reiterate Cargill's previous statements on the first issue (refer to pg. 11 of PSD report for No. 7 SAP project), the increased sulfuric acid production capacity afforded by the No. 7 SAP increase will reduce the requirements for purchase of sulfuric acid from outside sources. In addition, sulfuric acid may also be transferred to Cargill's Bartow facility. Currently, Cargill purchases significant amounts of sulfuric acid from outside



recycled paper

sources. For example, during the period July 1997 through the present (1-year period), Cargill Riverview imported 204,000 tons of sulfuric acid, while the Cargill Bartow facility imported 251,000 tons of sulfuric acid. Together, the two plants imported 455,000 tons of sulfuric acid over the last year.

In comparison, the No. 7 SAP production rate increase of 1,000 TPD will allow an increase in sulfuric acid production of no more than 365,000 tons per year. Thus, even the increased production from No. 7 SAP will not be sufficient to totally offset purchased acid requirements for Cargill.

The only emissions unit at Riverview which utilizes sulfuric acid is the phosphoric acid plant. Since the phosphoric acid plant is now utilizing both on-site and off-site produced sulfuric acid, and the No. 7 SAP production rate increase will be used to offset some of the off-site purchased acid, the phosphoric acid plant will not be "affected" by the increase (i.e., actual emissions will not increase as a result of the sulfuric acid production increase; actual emissions may increase for other reasons, for example based on market demand and other factors, its production rate may vary up and down in response to these factors). Therefore, all downstream units from the phosphoric acid plant which utilize phosphoric acid will similarly not be "affected" (i.e., MAP, DAP and GTSP) by the proposed sulfuric acid increase. Simply stated, the phosphoric acid plant production is not "bottlenecked" by the No. 7 SAP and the construction of No. 7 SAP will not affect downstream units. Sulfuric acid is a commodity which Cargill has purchased from off-site sources to meet the requirements of the phosphoric acid plant and which Cargill will continue to be able to purchase and sell in the future.

In regard to the second issue raised in HCEPC's memo, the federal PSD regulations are very clear in 40 CFR 52.21(j)(3) that BACT is applied only to those emission units that are being physically modified, or for which there is a change in the method of operation, due to the proposed project:

*"A major modification shall apply best available control technology for each pollutant subject to regulation under the Act for which it would result in a significant net emissions increase at the source. This requirement applies to each proposed emissions unit at which a net emissions increase in the pollutant would occur as a result of a physical change or change in the method of operation in the unit."*

The federal regulations further provide that a physical change or change in method of operation does not include an increase in production or hours of operation unless such an increase would be prohibited by a federally enforceable permit condition. 40 CFR 52.21(b)(2)(iii)(f). Therefore, even if Cargill was required to include other downstream emission units in the PSD source applicability determination, BACT would not be imposed on the other units unless such emissions units were physically changed or were limited by federally enforceable permit limits.

July 20, 1998

EPC#2 - As stated in our previous response, Cargill agrees that a sulfur limit is appropriate and that the limit should be 0.5%. However, the EPC is incorrect that a reduction in allowable sulfur content would significantly reduce PM and SO<sub>2</sub> emissions at the facility. The only fuel oil routinely used at this facility is for mobile equipment, occasional sulfuric acid plant cold start-ups and small diesel engines (backup or emergency pumps, welding machines, etc.). All significant combustion sources on site use natural gas as a primary fuel with fuel oil use generally limited to no more than 400 hours per year during periods when natural gas is unavailable (a rare occurrence). Note also that a 0.5% sulfur limit will be consistent with fuel sulfur limits and recordkeeping requirements being proposed by the DEP in the facility Title V permit. It will also conform with requirements of the Florida Department of Agriculture and Consumer Services Rule 5F-2001 which requires that No. 2 fuel oil sold in Florida have a maximum sulfur content not to exceed 0.5%.

EPC#3 - We already responded to this exact same question from EPC in our June 11, 1998 letter to DEP, no further response is necessary.

EPC#4 - As we clearly stated in our response to this same issue raised by EPC in our June 11, 1998 letter to DEP, we believe that there is insufficient evidence that the sulfuric acid plant operations are a source of community odor problems. We also noted that total emissions from the Cargill facility represent less than 2 percent of total SO<sub>2</sub> emissions in Hillsborough County. Also, as we have previously stated and as further described above, this proposed project will not result in any increased production of phosphoric acid and, therefore, cannot have any impact on the amount of phosphogypsum generated at the facility.

EPC#5 - We already responded to this exact same question from EPC in our June 11, 1998 letter to DEP, no further response is necessary.

EPC#6 - No response required by Cargill

2. We acknowledge the DEP's concerns regarding public access to the Cargill facility. Please note that the receptor locations used for the air quality impact analysis are located at controlled fencelines along the facility except along the shorelines to the Alafia River and Hillsborough Bay. To prevent public access at these locations we have regular patrols by uniformed guards who are stationed at the facility 24-hours per day, 365 days per year. In addition, we are proceeding with upgrading the posted boundaries with additional "No Trespassing" signs along all unfenced shorelines of the facility. Additional signs will be posted by August 31, 1998. We trust that these efforts are sufficient to assure the Department that facility areas inside the modeled receptors are not accessible to the public.

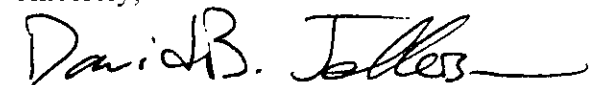
Mr. A. A. Linero, P.E.

Page 4

July 20, 1998

I trust that the above information is sufficient for you to proceed with processing of the permit application, however, if you have any further questions, please do not hesitate to call me at 813/671-6297 or send me an e-mail at [david\\_jellerson@cargill.com](mailto:david_jellerson@cargill.com).

Sincerely,



David B. Jellerson, P.E.

Environmental Superintendent

cc: Kathy Edgemon, Cargill  
Tom MacLeod, Cargill  
David A. Buff, P.E., Golder Associates  
Jerry Campbell, HCEPC  
File P-10-7





July 22, 1998

Mr. A. A. Linero, P.E.  
New Source Review Section  
Florida Department of Environmental Protection  
2600 Blair Stone Road  
Tallahassee, FL 32399-2400

**RECEIVED**

**JUL 24 1998**

**BUREAU OF  
AIR REGULATION**

RE: Cargill Fertilizer, Inc.  
No. 7 Sulfuric Acid Plant Rate Increase  
DEP File No. 0570008-025-AC (PSD-FL-250)  
**REQUEST FOR DEPARTMENT TO PROCESS APPLICATION**

Dear Mr. Linero:

On behalf of Cargill Fertilizer, Inc., the purpose of this correspondence is to request that the Department continue to process the above referenced permit application, based on the information Cargill and its consultant, Golder Associates, has provided to date to the Department. Cargill believes that it has addressed all questions and issues raised by the Department, the Hillsborough County Environmental Protection Agency (HCEPC), and the U.S Fish and Wildlife Service (USFWS) in the Department's letters dated May 29 and July 10, 1998. Cargill believes that the Department's July 10 letter, which was responded to by Cargill on July 22, did not raise any new questions which have not previously been addressed by Cargill. As a result, please proceed with processing this permit application. As you know, it is critical to Cargill to obtain this permit as soon as possible.

Please do not hesitate to call if you have any questions concerning this request.

Sincerely,

A handwritten signature in cursive script that reads 'David A. Buff'.

David A. Buff, P.E.  
Principal Engineer  
Florida P.E. #19011  
S E A L

DB/db

cc: David Jellerson, Cargill  
Kathy Edgemon, Cargill  
File (2)

9837526/03



**FACSIMILE TRANSMISSION**

**GOLDER ASSOCIATES INC.**

6241 NW 23RD STREET  
GAINESVILLE, FLORIDA 32653 USA

TELEPHONE NO. (352) 336-5600  
FAX NO. (352) 336-6603

Date: *July 23, 1998*  
FAX No.: *850-922-6979*  
TO: *FDEP*

Project No.:  
*9837526-0100*

ATTN: *Al Linero*  
FR: *Daniel Buff*  
RE:

Hard Copy to Follow:  Yes  No

Total Number of Pages (including this cover page): *2*

MESSAGE:



**Golder ASSOCIATES**

The document(s) with this transmission are only for recipient(s) named above and contain privileged/confidential information. Unauthorized disclosure, dissemination, or copying of this transmission is strictly prohibited. If received in error, please destroy. Questions/problems with transmission: contact the receptionist at (352) 336-5600.

MAIL/FORMS/ALDOC



July 22, 1998

Mr. A. A. Linero, P.E.  
New Source Review Section  
Florida Department of Environmental Protection  
2600 Blair Stone Road  
Tallahassee, FL 32399-2400

RE: Cargill Fertilizer, Inc.  
No. 7 Sulfuric Acid Plant Rate Increase  
DEP File No. 0570008-025-AC (PSD-FL-250)  
**REQUEST FOR DEPARTMENT TO PROCESS APPLICATION**

Dear Mr. Linero:

On behalf of Cargill Fertilizer, Inc., the purpose of this correspondence is to request that the Department continue to process the above referenced permit application, based on the information Cargill and its consultant, Golder Associates, has provided to date to the Department. Cargill believes that it has addressed all questions and issues raised by the Department, the Hillsborough County Environmental Protection Agency (HCEPC), and the U.S Fish and Wildlife Service (USFWS) in the Department's letters dated May 29 and July 10, 1998. Cargill believes that the Department's July 10 letter, which was responded to by Cargill on July 22, did not raise any new questions which have not previously been addressed by Cargill. As a result, please proceed with processing this permit application. As you know, it is critical to Cargill to obtain this permit as soon as possible.

Please do not hesitate to call if you have any questions concerning this request.

Sincerely,

A handwritten signature in cursive script that reads 'David A. Buff'.

David A. Buff, P.E.  
Principal Engineer  
Florida P.E. #19011  
S E A L

DB/db

cc: David Jellerson, Cargill  
Kathy Edgemon, Cargill  
File (2)

9837526/03

9737578



U.S. FISH & WILDLIFE SERVICE  
AIR QUALITY BRANCH  
P.O. BOX 25287, Denver, CO 80225-0287

---

FACSIMILE COVER SHEET

---

*Date: July 28, 1998*

*Telephone: (303) 969-2617*

*Fax: (303) 969-2822*

*To: Al Linero*

*From: Ellen Porter*

**Subject:** PSD-FL-250: Cargill Fertilizer No. 7 Sulfuric Acid Plant— FWS Response to Applicant Comments

Cargill makes the following points in its discussion of the appropriate limit for sulfuric acid mist (SAM) emissions from the proposed expansion of its No. 7 acid plant:

1. "NPS [FWS] AQRV analysis concludes that there will be no expected effects at the proposed limit of 0.15 lb/ton. Therefore, there appears to be no environmental benefit for limiting SAM emissions below 0.15 lb/ton."

**Response:** The principle behind the Prevention of Significant Deterioration program is to prevent large increases in emissions from degrading air that is already clean to the point where it is barely acceptable from a health or effects standpoint. For this reason, projects such as Cargill's must limit emissions as much as is feasible through the use of best available control technology (BACT). The BACT requirement is defined as:

"an emissions limitation (including a visible emission standard) based on the maximum degree of reduction for each pollutant subject to regulation under the Clean Air Act which would be emitted from any proposed major stationary source or major modification which the Administrator, on a case-by-case basis,

taking into account energy, environmental, and economic impacts and other costs, determines is achievable for such source or modification through application of production processes or available methods, systems, and techniques, including fuel cleaning or treatment or innovative fuel combustion techniques for control of such pollutant."

There is no provision for relaxing the stringency of control based upon a lack of an adverse impact to a sensitive ecosystem. Because FWS is concerned that the cumulative effects of numerous projects over time may result in adverse effects, it urges permitting authorities to employ a rigorous approach to their BACT analyses.

2. "There is no argument from NPS [FWS] over the control technology to be employed...only over the permit limit...mist eliminators are not dependent upon plant operators...Therefore, although actual SAM emissions...may be lower than the 0.15 lb/ton level, there is no overriding reason to set a limit lower..."

Response: First, Cargill makes no case against a lower limit, and is essentially saying that there is no need for any limit at all because the plant will operate as designed regardless of changes in the method of operation. Because BACT is to reflect the maximum feasible degree of reduction, and the only way to enforce BACT is through emission limits, those limits should reflect the capabilities of the technology chosen to provide that "maximum degree of reduction." Second, the fact that Cargill's own stack test data shows that emissions can vary by a factor of four demonstrates that there is a need to ensure that plant operational parameters are maintained within proper ranges.

Finally, FWS believes that more efficient controls should have been thoroughly investigated. FWS believes that limits of 3.5 lb SO<sub>2</sub>/ton and 0.10 lb SAM/ton would represent a reasonable compromise for this project and would be a significant improvement over past permit limits in this industry.

#### **Conclusions and Recommendations**

Because Cargill made no case against a lower SAM limit, FWS recommends that SAM emissions from the Cargill #7 acid plant be limited to not more than 0.10 lb SAM/ton of acid produced.

Contact: Don Shepherd (303) 969-2075

*Number of Pages: 2*  
*(Including this cover sheet)*

---

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