

Check Sheet

Company Name: Cargill Fertilizer

Permit Number: AC 53-216256

PSD Number:

County: Polk

Permit Engineer:

Others involved:

Application:

- Initial Application
- Incompleteness Letters
- Responses
- Final Application (if applicable)
- Waiver of Department Action
- Department Response

The actual permit file  
may be under Seminole  
Fertilizer with the above  
referenced permit #

Intent:

- Intent to Issue
- Notice to Public
- Technical Evaluation
- BACT Determination
- Unsigned Permit

Attachments:

- 
- 
- 
- Correspondence with:
  - EPA
  - Park Services
  - County
  - Other
- Proof of Publication
- Petitions - (Related to extensions, hearings, etc.)

Final Determination:

- Final Determination
- Signed Permit
- BACT Determination

Post Permit Correspondence:

- Extensions
- Amendments/Modifications
- Response from EPA
- Response from County
- Response from Park Services



# Florida Department of Environmental Protection

Lawton Chiles  
Governor

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

Virginia B. Wetherell  
Secretary

October 1, 1993

CERTIFIED MAIL - RETURN RECEIPT REQUESTED

Mr. Mike Wells  
Environmental Engineer  
Cargill Fertilizer, Inc.  
8813 Highway 41 South  
Riverview, FL 33569

Dear Mr. Wells:

The Department received your request to extend the expiration date of construction permit, AC 53-216256, for the East Molten Sulfur Pit. The permit is amended as shown.

**Current Expiration Date : August 25, 1993**  
**New Expiration Date : June 1, 1994**

A person whose substantial interests are affected by the Department's proposed permitting decision may petition for an administrative proceeding (hearing) in accordance with Section 120.57, Florida Statutes. The petition must contain the information set forth below and must be filed (received) in the Office of General Counsel of the Department at 2600 Blair Stone Road, Tallahassee, Florida 32399-2400.

Petitions filed by the permit applicant and the parties listed below must be filed within 14 days of receipt of this amendment. Petitions filed by other persons must be filed within 14 days of publication of the public notice or within 14 days of their receipt of this amendment, whichever occurs first. Petitioner shall mail a copy of the petition to the applicant at the address indicated above at the time of filing. Failure to file a petition within this time period shall constitute a waiver of any right such person may have to request an administrative determination (hearing) under Section 120.57, Florida Statutes.

Mr. Mike Wells  
AC 53-216256  
Permit Extension  
October 1, 1993  
Page 2 of 3

The Petition shall contain the following information:

- (a) The name, address and telephone number of each petitioner, the applicant's name and address, the Department Permit File Number and the county in which the project is proposed;
- (b) A statement of how and when each petitioner received notice of the Department's action or proposed action;
- (c) A statement of how each petitioner's substantial interests are affected by the Department's action or proposed action;
- (d) A statement of the material facts disputed by Petitioner, if any;
- (e) A statement of facts which petitioner contends warrant reversal or modification of the Department's action or proposed action;
- (f) A statement of which rules or statutes petitioner contends require reversal or modification of the Department's action or proposed action;
- (g) A statement of the relief sought by petitioner, stating precisely the action the petitioner wants the Department to take with respect to the Department's action or proposed action.

If a petition is filed, the administrative hearing process is designed to formulate agency action. Accordingly, the Department's final action may be different from the position taken by it in this amendment. Persons whose substantial interests will be affected by any decision of the Department with regard to the application have the right to petition to become a party to the proceeding. The petition must conform to the requirements specified above and be filed (received) within 14 days of receipt of this amendment in the Office of General Counsel at the above address of the Department. Failure to petition within the allowed time frame

Mr. Mike Wells  
AC 53-216156  
Permit Extension  
October 1, 1993  
Page 3 of 3

constitutes a waiver of any right such person has to request a hearing under Section 120.57, F.S., and to participate as a party to this proceeding. Any subsequent intervention will only be at the approval of the presiding officer upon motion filed pursuant to Rule 28-5.207, F.A.C.

This letter amendment must be attached to the Construction Permit, AC 53-216256, and shall become part of the permit.

Sincerely,



Howard L. Rhodes  
Director  
Division of Air Resources  
Management

HLR/CSL

Attachment

cc: B. Thomas, SWD  
J. Harper, EPA  
J. Bunyak, NPS

**Attachment**

Memorandum

Florida Department of  
Environmental Protection

To : Howard Rhodes  
From : *Clair Fancy*  
Date : October 1, 1993  
Subject: Construction Permit Extension  
AC 53-216256  
Cargill Fertilizer, Inc. - Bartow Facility

---

Attached for your approval and signature is a permit extension. An EPA Method 9 (Determination of The Opacity of Emissions From Stationary Sources) compliance test at the East Molten Sulfur Pit on March 31, 1993 indicated that the facility could not comply with specific condition No. 3 of the construction permit. Cargill Fertilizer, Inc. then submitted a request for a variance on June 22, 1993 requesting that the visible emission limitation for the East Molten Sulfur Pit be revised from 20% opacity to 30% opacity. Subsequent to questions concerning the validity of the EPA Method 9 compliance test and a test at the site by Jason Gorie of the Department's Southwest District Office on September 27, 1993, which indicated that the East Molten Sulfur Pit could comply with the opacity emission limits of 20% opacity, the variance request was withdrawn by Cargill Fertilizer, Inc. on September 30, 1993. A request to extend the expiration date of the construction permit was also submitted to the Department on September 29, 1993. The extension will allow time for Cargill Fertilizer, Inc. to obtain a valid EPA Method 9 compliance test and apply for an operation permit pursuant to the procedures set forth in the construction permit. The extension will also allow time for the Department to complete its review of the compliance test results, review the application for an operation permit, and to issue the operation permit.

The District concurs with the extension and I recommend that it be approved.

CF/CSL

Attachment

*File*

Memorandum

Florida Department of  
Environmental Protection

To : Howard Rhodes  
From : *Clair Fancy*  
Date : October 1, 1993  
Subject: Construction Permit Extension  
AC 53-216256  
Cargill Fertilizer, Inc. - Bartow Facility

---

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The District concurs with the extension and I recommend that it be approved.

CF/CSL

Attachment

Thank you for using Return Receipt Service.

Is your RETURN ADDRESS completed on the reverse side?

**SENDER:**

- Complete items 1 and/or 2 for additional services.
- Complete items 3, and 4a & b.
- 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. Mike Wells  
Environmental Engineer  
Cargill Fertilizer, Inc.  
8813 Highway 41 South  
Riverview, FL 33569

4a. Article Number

P 230 524 294

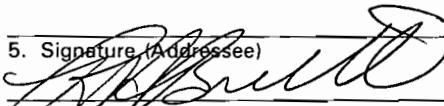
4b. Service Type

- Registered       Insured  
 Certified       COD  
 Express Mail       Return Receipt for Merchandise

7. Date of Delivery

10-1

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

5. Signature (Addressee)  


6. Signature (Agent)

PS Form 3811, December 1991 \*U.S. GPO: 1992-323-402

**DOMESTIC RETURN RECEIPT**

P 230 524 294



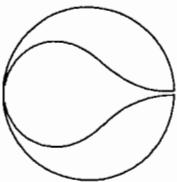
**Receipt for Certified Mail**

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

Sent to	Mr. Mike Wells, Cargill
Street and No.	8813 Hwy 41 S. Fertilizer
P.O., State and 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, and Addressee's Address	
TOTAL Postage & Fees	\$
Postmark or Date	

Mailed: 9-30-93 10-1-93  
Permit: AC 53-216256

PS Form 3800, June 1991



# CARGILL FERTILIZER, INC.

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

Certified Mail: P 288 830 214

October 8, 1993

0000748

Ms. Patty Adams  
Planner - Bureau of Air Regulation  
Florida Dept. of Environmental Protection  
2600 Blair Stone Road  
Tallahassee, Florida 32399-2400

RECEIVED  
DER-MAIL ROOM  
1993 OCT 12 PM 1:24

Subject: Cargill Fertilizer, Inc.  
Application for Refund and  
Permit extension Fee  
East Sulfur Pit, Permit No.AC53-216256

Dear Ms. Adams:

Please find enclosed the Application for Refund Form you requested in your letter dated September 30, 1993.

Also enclosed is Cargill Fertilizer check No.577-153929 in the amount of \$50.00 for the processing fee for the extension of the above mentioned permit.

If you have any questions or require additional information, feel free to call me at (813) 671-6154.

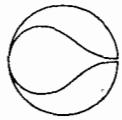
Sincerely,

Mike Wells  
Environmental Engineer

cc: Morris  
Jellerson  
Curran  
File Bartow

cc: 22  
22  
22





**CARGILL  
FERTILIZER, INC.**

8042 Highway 41 South  
Fold at line over top of envelope to the  
right of the return address

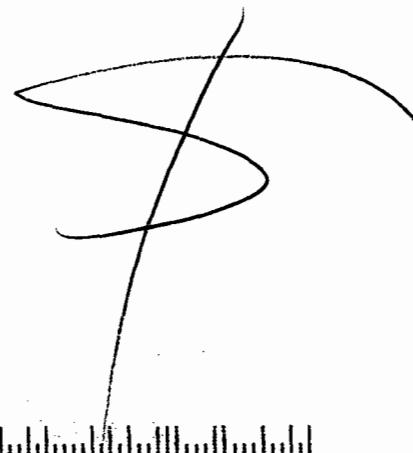
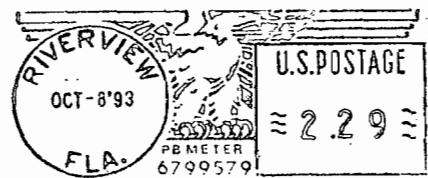
**CERTIFIED**

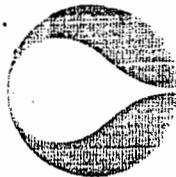
P 288 830 214

**MAIL**

**RETURN RECEIPT  
REQUESTED**

**GIBSONTON  
DROP SHIPMENT  
AUTHORIZATION**





# CARGILL FERTILIZER, INC.

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

Certified Mail: P 288 830 214

October 8, 1993

Ms. Patty Adams  
Planner - Bureau of Air Regulation  
Florida Dept. of Environmental Protection  
2600 Blair Stone Road  
Tallahassee, Florida 32399-2400

0000748

REC'D - REG'D MAIL ROOM  
1993 OCT 12 PM 1:24

Subject: Cargill Fertilizer, Inc.  
Application for Refund and  
Permit extension Fee  
East Sulfur Pit, Permit No.AC53-216256

Dear Ms. Adams:

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If you have any questions or require additional information, feel free to call me at (813)671-6154.

Sincerely,

Mike Wells  
Environmental Engineer

**CARGILL  
FERTILIZER, INC.**

NORWEST BANK LEWISTOWN, N.A.  
LEWISTOWN, MONTANA 59457

93-516  
929

**.577- 153929**

VENDOR NUMBER

4115

NUMBER

153929

DATE

10/05/93

0000748

THE  
SUM OF \*\*\*\*\*FIFTY DOLLARS AND 00 CENTS

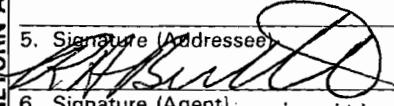
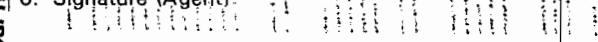
PAY  
TO THE  
ORDER OF

FLORIDA DEPT. OF ENVIRONMENTAL  
PROTECTION  
2600 BLAIR STONE ROAD  
TALLAHASSEE FL 32399-2405

\$50.00

M. Townsend  
AUTHORIZED SIGNATURE

Thank you for using Return Receipt Service.

<b>SENDER:</b> • Complete items 1 and/or 2 for additional services. • Complete items 3, and 4a & b. • 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. Mike Wells Environmental Engineer Cargill Fertilizer, Inc. 8813 Highway 41 South Riverview, FL 33569		4a. Article Number P 230 524 295	
		4b. Service Type <input type="checkbox"/> Registered <input type="checkbox"/> Insured <input checked="" type="checkbox"/> Certified <input type="checkbox"/> COD <input type="checkbox"/> Express Mail <input type="checkbox"/> Return Receipt for Merchandise	
		7. Date of Delivery 10-4	
5. Signature (Addressee) 		8. Addressee's Address (Only if requested and fee is paid)	
6. Signature (Agent) 			

PS Form 3811, December 1991 \*U.S. GPO: 1992-323-402 DOMESTIC RETURN RECEIPT

P 230 524 295



### Receipt for Certified Mail

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

Sent to	
Mr. Mike Wells, Cargill Fert.	
Street and No.	
8813 Highway 41 South	
P.O., State and 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, and Addressee's Address	
TOTAL Postage & Fees	\$
Postmark or Date	
Mailed: 10-1-93	
Permit: Variance Request	

PS Form 3800, June 1991



# Florida Department of Environmental Protection

Lawton Chiles  
Governor

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

Virginia B. Wetherell  
Secretary

September 30, 1993

**CERTIFIED MAIL-RETURN RECEIPT REQUESTED**

Mr. Mike Wells  
Environmental Engineer  
Cargill Fertilizer, Inc.  
8813 Highway 41 South  
Riverview, FL 33569

RE: Cargill Fertilizer, Inc.  
Variance Request

Dear Mr. Wells:

Enclosed is a refund application for the \$2000 state processing fee for the above referenced project. Please fill in your FEID number, sign and date the top section of the request form and return it to me. If you have any questions, please call me at (904) 488-1344.

Sincerely,

*Patty Adams*

Patty Adams  
Planner  
Bureau of Air Regulation

/pa

Enclosure

APPLICATION FOR REFUND FORM  
THE STATE OF FLORIDA  
DEPARTMENT OF ENVIRONMENTAL PROTECTION

STATE OF FLORIDA, COUNTY OF LEON

Pursuant to the provisions of Section 215.26, or Section \_\_\_\_\_, Florida Statutes, I hereby apply for a refund and request that a State Warrant be drawn in favor of:

NAME: Cargill Fertilizer

ADDRESS: 8813 Highway 41 South, Riverview, FL 33589.

FEID OR SS NUMBER: \_\_\_\_\_

AMOUNT: \$2,000.00 REV OBJECT CODE: 002222

DOCUMENT NUMBER: \_\_\_\_\_ MONEY SHEET DATE: \_\_\_\_\_

which represents money I paid into the State Treasury subject to refund, and to substantiate such claim the following facts are submitted:

REASON FOR CLAIM: Processing fee for variance request. After review of the request if was determined that no variance was needed.

CERTIFIED TRUE AND CORRECT this \_\_\_\_\_ day of \_\_\_\_\_, 19 \_\_\_\_\_.  
  
\_\_\_\_\_  
Signature

\*Must be completed if authority is other than Section 215.26, Florida Statutes.  
\*\*\*\*\*  
(FOR AGENCY USE ONLY)

(1) Agency recommends denial of above claim based on the following facts, including statutory authority for collection:  
  
\_\_\_\_\_

or

(2) Agency recommends approval of above claim and submits the following information to substantiate such claim. \$ \_\_\_\_\_ was originally deposited into the State Treasury, Receipt # \_\_\_\_\_, dated \_\_\_\_\_.  
NAME OF ACCOUNT: \_\_\_\_\_

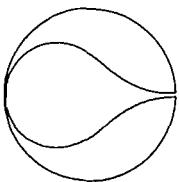
SAMAS ACCOUNT CODE																				

Statutory Authority for Collection \_\_\_\_\_  
It is requested that payment be made from:  
NAME OF ACCOUNT: \_\_\_\_\_

SAMAS ACCOUNT CODE																				

\*\*\*\*\*  
CERTIFIED TRUE AND CORRECT this \_\_\_\_\_ day of \_\_\_\_\_, 19 \_\_\_\_\_.  
  
\_\_\_\_\_  
Signature and Title of Authorized Person

\*\*\*\*\*  
SECTION 215.26 STATES, IN PART: "APPLICATION FOR REFUNDS AS PROVIDED BY THIS SECTION SHALL BE FILED WITH THE COMPTROLLER, EXCEPT AS OTHERWISE PROVIDED HEREIN, WITHIN 3 YEARS AFTER THE RIGHT TO SUCH REFUND SHALL HAVE ACCRUED ELSE SUCH RIGHT SHALL BE BARRED." Three years is interpreted as meaning three years from the date of payment into State Treasury.



# CARGILL FERTILIZER, INC.

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

RECEIVED  
OCT 1 1993  
Division of Air  
Resources Management

September 30, 1993

Mr. Charles Logan  
Florida Dept. of Environmental Protection  
Twin Towers Office Building  
2600 Blair Stone Road  
Tallahassee, Florida 32399-2400

Subject: Withdrawl Request for Variance and  
Add Request for Permit Extension  
Permit No. AC53-216256

Dear Mr. Logan:

Cargill Fertilizer, Inc. would like to withdraw the request for a variance on the east sulfur pit located at the Bartow facility. The request was asking for a 30% opacity reading instead of the permitted 20%. Cargill feels that the 20% opacity limit will be sufficient.

Cargill would also like to extend the above mentioned construction permit in order to have an appropriate amount of time to conduct a compliance test and submit an application for an operating permit.

If you have any questions or require additional information, feel free to contact me at (813)671-6154.

Sincerely,

*Mike Wells*  
Mike Wells  
Environmental Engineer

cc: Mr. Ed Huck, FDEP  
Mr. Bill Thomas, FDEP  
Morris  
Jellerson  
Curran  
File Bartow





BEST AVAILABLE COPY

# CARGILL FERTILIZER, INC.

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

September 30, 1993

Mr. Charles Logan  
Florida Dept. of Environmental Protection  
Twin Towers Office Building  
2600 Blair Stone Road  
Tallahassee, Florida 32399-2400

Subject: Withdrawl Request for Variance and  
Add Request for Permit Extension  
Permit No. AC53-216256

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Sincerely,

*Mike Wells*  
Mike Wells  
Environmental Engineer

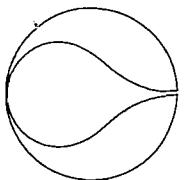
cc: Mr. Ed Huck, FDEP  
Mr. Bill Thomas, FDEP  
Morris  
Jellerson  
Curran  
File Bartow

RECEIVED

SEP 30 1993

Division of Air  
Resources Management





# CARGILL FERTILIZER, INC.

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

1993 JUN 204 PM 1:14  
RECEIVED  
UFR - MAIL ROOM

June 16, 1993

Certified Mail: P 266 883 204

Mr. Clair H. Fancy  
Florida Department of  
Environmental Regulation  
Twin Towers Office Building  
2600 Blair Stone Road  
Tallahassee, Florida 32399-2400

Subject: Petition For Variance  
Cargill Fertilizer, Inc.  
Molten Sulfur Pit - East  
Permit No.AC53-216256

Dear Sir:

Please find enclosed Cargill Fertilizer check no.144502 in the amount of \$2,000.00 for the processing fee required for a variance.

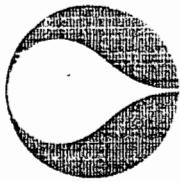
This check is sent per your request in a letter dated April 29, 1993 from Patty Adams. Please note that the original request was from Seminole Fertilizer Corporation which has since been purchased by Cargill Fertilizer, Inc.

If you have any questions, feel free to give me a call at (813)671-6154.

Sincerely,

Mike Wells  
Environmental Engineer

cc: Morris  
Jellerson  
File



# CARGILL FERTILIZER, INC.

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

RECEIVED  
FLER - MAIL ROOM  
1993 JUN 204 PM 1:14

June 16, 1993

Certified Mail: P 266 883 204

Mr. Clair H. Fancy  
Florida Department of  
Environmental Regulation  
Twin Towers Office Building  
2600 Blair Stone Road  
Tallahassee, Florida 32399-2400

Subject: Petition For Variance  
Cargill Fertilizer, Inc.  
Molten Sulfur Pit - East  
Permit No: AC53-216256

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If you have any questions, feel free to give me a call at (813) 671-6154.

Sincerely,

VENDOR NUMBER  
4115



CARGILL  
FERTILIZER, INC.

64-1278  
611 The Citizens and Southern National Bank  
Atlanta, DeKalb County, Georgia

577- 144502

CHECK NUMBER  
144502

CHECK DATE  
06/14/93

THE SUM OF \*\*\*\*\*TWO THOUSAND DOLLARS AND 00 CENTS

PAY  
TO THE  
ORDER OF FLORIDA DEPT. OF ENVIRONMENTAL  
REGULATION  
2600 BLAIR STONE ROAD  
TALLAHASSEE FL 32399-2405

\$2,000.00

  
AUTHORIZED SIGNATURE

Thank you for using Return Receipt Service.

**Is your RETURN ADDRESS completed on the reverse side?**

**SENDER:**

- Complete items 1 and/or 2 for additional services.
- Complete items 3, and 4a & b.
- 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.

**3. Article Addressed to:**

John B. Koogler, Ph.D., P.E.  
Koogler and Associates  
4014 N.W. 13th Street  
Gainesville, FL 32609

**5. Signature (Addressee)**

*J. Mechaney*  
*J. Mechaney*

**6. Signature (Agent)**

PS Form 3811, December 1991 \*U.S. GPO: 1992-323-402

I also wish to receive the following services (for an extra fee):

1.  Addressee's Address
  2.  Restricted Delivery
- Consult postmaster for fee.

**4a. Article Number**

P 360 528 713

**4b. Service Type**

- |   |   |
|---|---|
| <input type="checkbox"/> Registered           | <input type="checkbox"/> Insured                        |
| <input checked="" type="checkbox"/> Certified | <input type="checkbox"/> COD                            |
| <input type="checkbox"/> Express Mail         | <input type="checkbox"/> Return Receipt for Merchandise |

**7. Date of Delivery**

*5-3-93*

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

**DOMESTIC RETURN RECEIPT**

P 360 528 713

**Receipt for  
Certified Mail**



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

Sent to	
John B. Koogler, Ph.D., P.E.	
Street and No.	
4014 13th St.	
P.O. State and Zip Code	
Gainesville, FL 32609	
Postage	\$
Certified Fee	
Special Delivery Fee	
Restricted Delivery Fee	
Return Receipt Showing to Whom & Date Delivered	
Return Receipt Showing to Whom, Date, and Addressee's Address	
TOTAL Postage & Fees	\$
Postmark or Date 4/29/93	
Seminole Fertilizer Variance Request	

PS Form 3800, June 1991



# Florida Department of Environmental Regulation

Twin Towers Office Bldg. • 2600 Blair Stone Road • Tallahassee, Florida 32399-2406  
Lawton Chiles, Governor

Virginia B. Wetherell, Secretary

April 29, 1993

CERTIFIED MAIL-RETURN RECEIPT REQUESTED

John B. Koogler, Ph.D., P.E.  
Koogler and Associates  
4014 N.W. 13th Street  
Gainesville, Florida 32609

Dear Mr. Koogler:

RE: Petition for Variance  
Seminole Fertilizer Corporation  
AC53-216256

The Bureau of Air Regulation received your April 27, 1993, request for the above referenced project. On October 30, 1991, Rule 17-4.050(4)(o), F.A.C., was changed to require a \$2,000 processing fee for a variance; therefore, we will not be able to take action on your request until the fee is received. If you have any questions, please call Patty Adams at (904)488-1344.

Sincerely,

*Patricia G. Adams*  
for C. H. Fancy, P.E.  
Chief  
Bureau of Air Regulation

CHF/pa

4/29  
Talked to Pradeep -  
Cargill is buying Seminole  
Fertilizer very soon (within  
a few days). They will  
wait for the sale to go  
through & let Cargill pay  
the \$2000-  
PA



KOOGLER & ASSOCIATES

ENVIRONMENTAL SERVICES

4014 NW THIRTEENTH STREET

GAINESVILLE, FLORIDA 32609

904/377-5822 • FAX 377-7158

KA 203-93-01

April 27, 1993

RECEIVED

APR 28 1993

Division of Air  
Resources Management

Mr. Clair H. Fancy  
Florida Department of  
Environmental Regulation  
Twin Towers Office Building  
2600 Blair Stone Road  
Tallahassee, Florida 32399-2400

Subject: Petition For Variance From Rule Requirements  
Seminole Fertilizer Corporation  
Molten Sulfur Pit - East  
Permit No. AC53-216256

Dear Mr. Fancy:

In August of 1992, FDER issued a construction permit, AC53-216256, for the construction of a molten sulfur pit - east to Seminole Fertilizer Corporation, Polk County, Florida.

Testing on the recently constructed source using EPA Method 9 indicated that visible emissions exceed the 20 percent opacity limitation contained in the permit (Specific Condition No. 3) and Rule 17-296.411 of the Florida Administrative Code (FAC).

A performance test using EPA Method 5 (not required by permit) indicated that particulate matter emissions from the source are within the estimated particulate matter emissions contained in Specific Condition No. 7 for inventory purposes.

After evaluating several operation alternatives including flow and rate variations, it was concluded that there was no practical means to control the visible emissions to 20 percent opacity.

As a result, Seminole is submitting a petition for a variance. The following is a petition for a variance, pursuant to Section 403.201, Florida Statutes, of the Florida Air and Water Pollution Control Act, and pursuant to Rule 17-103.100, of the Florida Administrative Code (FAC).

Petition for a Variance

- A. A variance is being sought from Rule 17-296.411(1)(g) which requires visible emissions not to exceed 20 percent opacity from any emission point in a molten sulfur facility.

The visible emissions from the newly constructed molten sulfur pit - East (permitted under AC53-216256) range between 20 and 30 percent opacity. It is therefore requested that the visible emission limitation for the source be revised to 30 percent opacity.

- B. The variance should be granted as there is no practicable means known or available for the adequate control of the pollution involved.
- C. The variance is being sought for a period of twenty years; the operational life of the source.
- D. The petitioner can currently meet a visible emissions limit of 30 percent opacity (six-minute average) and can also meet the permitted mass emission rate.
- E. The petitioner has evaluated steps/measures to meet the current requirements and found that there is no practicable means available for the adequate control of the pollution involved.
- F. No social, economic and environmental impacts on the applicant, residents of the area and of the state are expected if the variance is granted as the mass emission rate in the permit is being met.
- G. The social, economic and environmental impacts on the applicant, residents of the area and of the state if the variance is denied, include the following:
1. If no variance is granted, the petitioner will not be able to obtain an operation permit to operate the source. Without the source in operation, the facility will lose its increased railcar unloading capability. During a period when the only molten sulfur supply is by rail, the sulfuric acid plant production capability will be reduced by a reduced sulfur supply. A reduced production capacity will result in serious energy recovery losses and losses in sales.



Mr. Clair H. Fancy  
Florida Department of  
Environmental Regulation

April 27, 1993  
Page 3

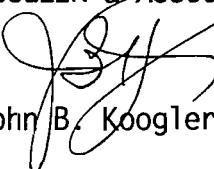
For the reasons stated above, it is requested that FDER grant Seminole the requested variance.

In discussing the above request with Mr. William Thomas, FDER Southwest District Office, he indicated that he did not have any concerns as the source is in compliance with the permitted mass emission rate. It was also his recommendation that this request be sent to your attention.

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

Very truly yours,

KOOGLER & ASSOCIATES

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

JBK:PAR:wa

c: Mr. M. Martinasek, Seminole

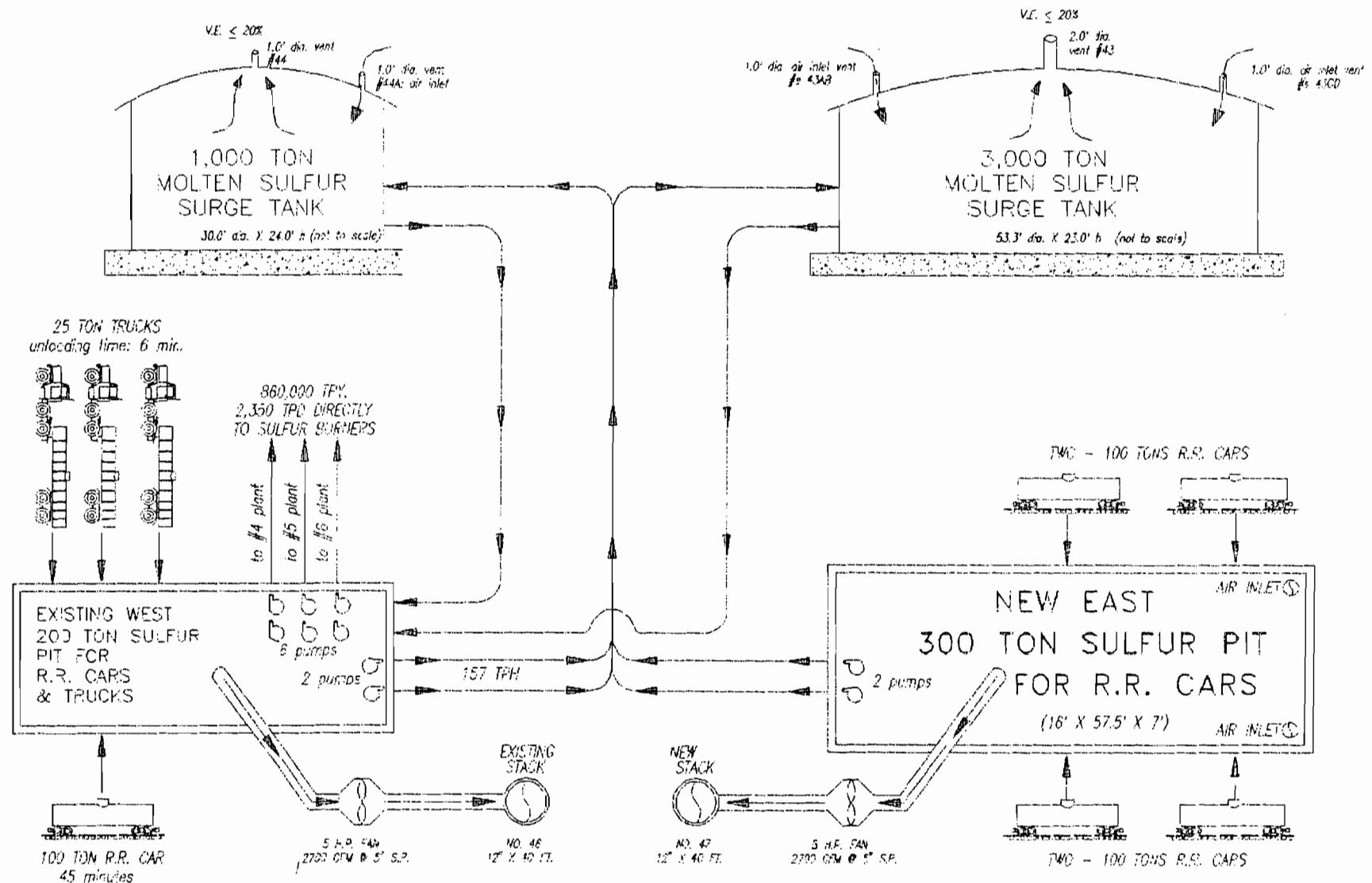


SUPPLEMENTAL INFORMATION

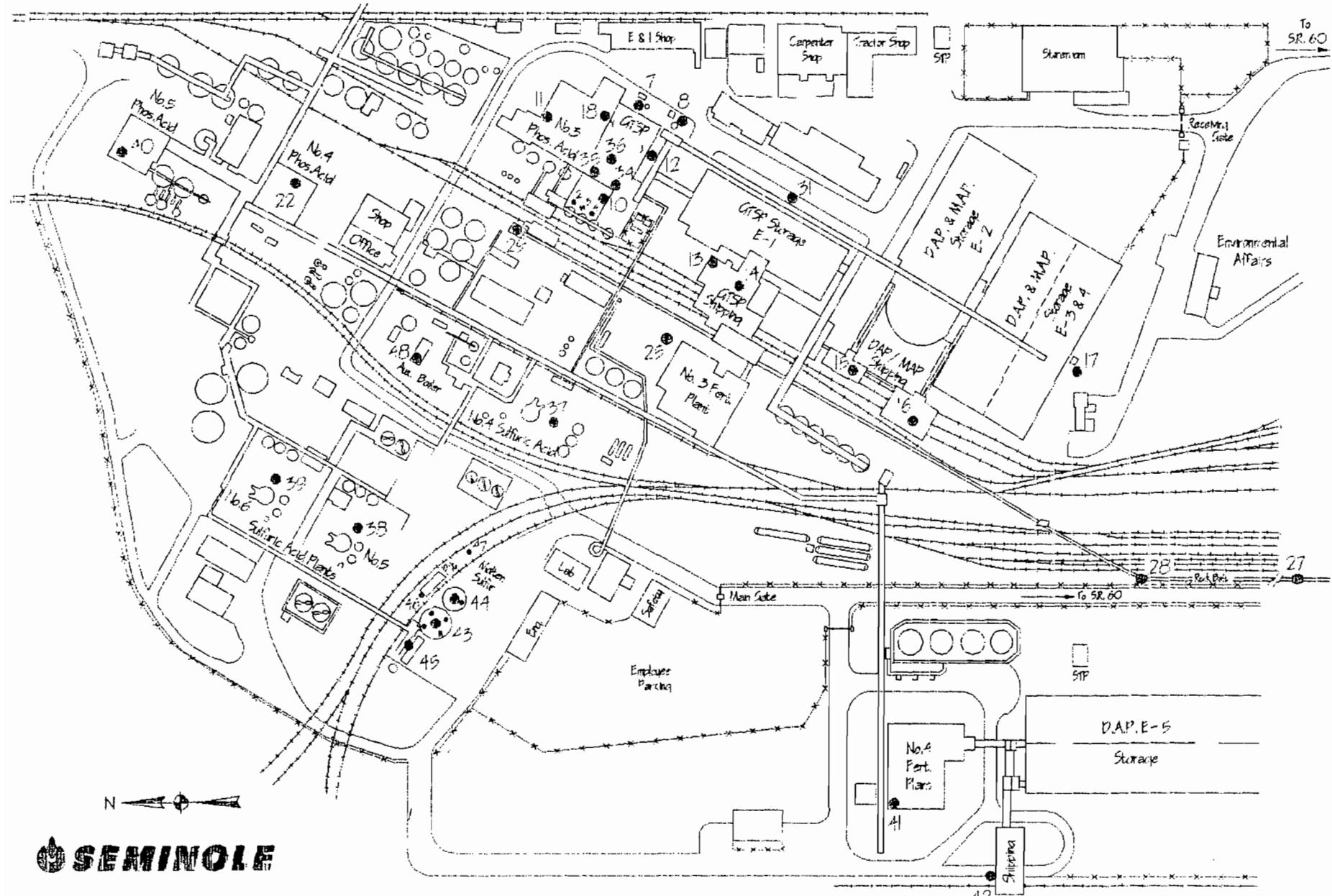


# SULFUR UNLOADING AND HANDLING

## BARTOW CHEMICAL PLANT



# Stack Locations - Chemical Plant



 SEMINOLE

## SEMINOLE FERTILIZER CORP., BARTOW PLANT

PLANT: East SULFUR PIT ; PERMIT NO. AC53-216256; POINT I.D. NO. 50  
 STACK NO. 47; PERMITTED EMISSIONS : SO<sub>2</sub> ACID MIST FLUORIDE P.M. OPACITY  
 LB/HR --- --- --- 0.46 <020 %  
 LB/TON --- --- --- ---

DATE: 03/31/93	RUN #1	RUN #2	RUN #3	AVERAGE
TIME: 11:30 - 04:30	11:30-12:40	01:15-02:20	03:15-04:30	1.00 HR.EA.
BAROMETRIC PRESSURE: IN. HG.	29.89	29.89	29.89	29.89
STACK PRESSURE (PS): IN. HG.	29.90	29.90	29.90	29.90
<b>STACK:</b>				
I.D. = 1.08 FT.				
GAS TEMP (TS): DEG. F.	210	210	211	210
MOISTURE (Bws): BY VOLUME	0.040	0.045	0.043	0.043
VELOCITY (Vs): FT./SEC.	35.55	35.63	35.49	35.56
VOLUME (Q): ACFM	1966	1971	1963	1966
VOLUME (Q STD.): DSCFM	1485	1481	1477	1481
NO. OF POINTS SAMPLED:	12	12	12	12
SAMPLE DURATION: MIN.	60	60	60	60
LEAK CHECK: CU. FT.	0.01	0.00	0.00	0.00
VOLUME METERED: ACF	50.70	48.40	50.00	49.70
VOLUME METERED (Vm): DSCF	46.18	43.88	45.52	45.19
AVG. METER TEMP. (Tm): DEG. F	106.42	109.00	106.67	107.36
AVG. PUMP VACUUM: IN. HG.	6.79	6.40	6.50	6.56
AVG. ORIF. PRES. DIF. (^H): IN.WTR	2.06	2.07	2.05	2.06
AVG. ISOMETRIC RATIO (%I):	91.1	86.8	90.3	89.4
RATE: TONS PER HOUR ROCK	220.0	220.0	220.0	220.0

## -----CONTAMINANTS-----

PARTICULATES LBS./HR.	0.31	0.45	0.21	<u>0.32</u>
PARTICULATES LBS./TON	0.00	0.00	0.00	<u>0.00</u>
V. E. % OPACITY	25.0	<u>25.0</u> ← to → <u>20.0</u>		

SAMPLED AND ANALYZED BY EPA & DER METHODS 1, 2, 4, 5, and 9.

I CERTIFY THAT THE DATA SUBMITTED ARE TRUE TO THE BEST OF MY KNOWLEDGE

SIGNATURE

  
 M. J. MARTINASEK  
 SR. ENVIRONMENTAL ENGINEER

## VISIBLE EMISSION OBSERVATION FORM

No. 1

COMPANY NAME <i>Seminole Fertilizer</i>	
STREET ADDRESS <i>Hwy 60</i>	
<i>P.O. Box 471</i>	
CITY <i>Bartow</i>	STATE <i>FL</i>
PHONE (KEY CONTACT) <i>(813) 534-9793</i>	ZIP <i>33830</i>
SOURCE ID NUMBER <i>50 DER</i>	
PROCESS EQUIPMENT <i>New Sulfur Pit</i>	OPERATING MODE <i>unloading</i>
CONTROL EQUIPMENT <i>None</i>	OPERATING MODE
DESCRIBE EMISSION POINT <i>12" stack</i>	
HEIGHT ABOVE GROUND LEVEL <i>40'</i>	HEIGHT, RELATIVE TO OBSERVER Start <i>40'</i> End <i>40'</i>
DISTANCE FROM OBSERVER Start <i>60'</i> End <i>60'</i>	
DIRECTION FROM OBSERVER Start <i>South</i> End <i>South</i>	
DESCRIBE EMISSIONS Start <i>yellowish white smoke</i> End <i>Same</i>	
EMISSION COLOR Start <i>pale yellow</i> End <i>same</i>	
IF WATER DROPLET PLUME Attached <input type="checkbox"/> Detached <input checked="" type="checkbox"/>	
POINT IN THE PLUME AT WHICH OPACITY WAS DETERMINED Start <i>8 downstream</i> End <i>same</i>	
DESCRIBE PLUME BACKGROUND Start <i>SKY</i> End <i>SKY</i>	
BACKGROUND COLOR Start <i>Blue</i> End <i>Blue</i>	
SKY CONDITIONS Start <i>Partly cloudy</i> End <i>Same</i>	
WIND SPEED Start <i>5-10</i> End <i>5-10</i>	
WIND DIRECTION Start <i>West</i> End <i>West</i>	
AMBIENT TEMP Start <i>82</i> End <i>82</i>	WET BULB TEMP <i>77</i>
RH, percent <i>80%</i>	
Stack with Plume 	SOURCE LAYOUT SKETCH 
Sun	
Wind	
ADDITIONAL INFORMATION	

OBSERVATION DATE <i>3/31/93</i>					START TIME <i>1130</i>	END TIME <i>1200</i>
SEC	0	15	30	45	COMMENTS	
1	20	20	25	25		
2	25	25	25	25		
3	20	20	20	25		
4	25	25	25	25	unloading	
5	30	30	25	25	two cars	
6	25	25	25	25	for one	
7	25	20	20	25	hr. period	
8	25	20	20	20		
9	20	20	20	20		
10	20	25	25	25		
11	25	25	25	25		
12	25	25	25	25		
13	25	25	30	30	Highest	
14	25	25	25	25	period for	
15	25	25	20	20	one hour	
16	20	20	25	25	24.4%	
17	25	25	25	25		
18	25	25	25	20		
19	20	20	20	20		
20	20	20	25	25		
21	25	25	20	20		
22	20	20	20	25		
23	20	20	25	25		
24	25	20	20	20		
25	25	25	25	25		
26	20	20	20	20		
27	20	20	20	20		
28	20	20	25	25		
29	30	25	20	20		
30	20	20	20	20		

OBSERVER'S NAME (PRINT) <i>Jim Boyd</i>	OBSERVER'S SIGNATURE 	DATE <i>3/31/93</i>
ORGANIZATION <i>Seminole Fertilizer</i>	CERTIFIED BY <i>Eastern Tech. Assoc</i>	DATE <i>2/17/93</i>
CONTINUED ON VEO FORM NUMBER		<i>02</i>

COMPANY NAME <i>Seminole Fertilizer</i>	
STREET ADDRESS <i>ffy 60</i>	
CITY <i>Bartow</i>	
PHONE (KEY CONTACT) <i>(813) 534-9793</i>	STATE <i>FL</i> ZIP <i>33837</i>
PROCESS EQUIPMENT <i>New Sulphur Pit</i>	OPERATING MODE <i>unloading</i>
CONTROL EQUIPMENT <i>None</i>	OPERATING MODE <i>—</i>
DESCRIBE EMISSION POINT <i>12" Dig. Stack</i>	
HEIGHT ABOVE GROUND LEVEL Start <i>60'</i> End <i>60'</i>	HEIGHT, RELATIVE TO OBSERVER Start <i>End</i> <i>Same</i>
DISTANCE FROM OBSERVER Start <i>60'</i> End <i>60'</i>	
DIRECTION FROM OBSERVER Start <i>South</i> End <i>South</i>	
DESCRIBE EMISSIONS Start <i>Yellowish white smoke</i> End <i>Same</i>	
EMISSION COLOR Start <i>yellow</i> End <i>Same</i>	IF WATER DROPLET PLUME Attached <input type="checkbox"/> Detached <input type="checkbox"/>
POINT IN THE PLUME AT WHICH OPACITY WAS DETERMINED Start <i>8' downstream</i> End <i>Same</i>	
DESCRIBE PLUME BACKGROUND Start <i>SKY</i> End <i>SKY</i>	
BACKGROUND COLOR Start <i>Blue</i> End <i>Blue</i>	SKY CONDITIONS Start <i>fuzzy</i> End <i>same</i>
WIND SPEED Start <i>5-10</i> End <i>5-10</i>	WIND DIRECTION Start <i>West</i> End <i>West</i>
AMBIENT TEMP Start <i>82</i> End <i>82</i>	WET BULB TEMP Start <i>77</i> End <i>82</i>
Stack with Plume Sun Wind	SOURCE LAYOUT SKETCH Draw No. <i>100</i>
ADDITIONAL INFORMATION	

OBSERVATION DATE <i>3/31/93</i>		START TIME <i>1210</i>		END TIME <i>1240</i>			
SEC	MIN	0	15	30	45	COMMENTS	
1		20	20	20	25		
2		25	20	20	20		
3		20	20	20	20		
4		20	20	25	25		
5		25	20	20	20		
6		20	20	20	20		
7		20	20	20	20		
8		20	20	20	25		
9		25	25	20	20		
10		20	20	20	20		
11		20	20	25	25		
12		25	20	20	20		
13		20	20	20	20		
14		20	20	20	25		
15		25	20	25	25		
16		20	20	20	20		
17		20	20	25	20		
18		20	20	20	20		
19		25	25	30	25		
20		25	20	20	20		
21		20	20	20	20		
22		20	20	20	20		
23		20	20	20	20		
24		20	25	20	20		
25		20	20	20	20		
26		20	35	20	20		
27		20	20	20	25		
28		25	20	20	20		
29		20	20	20	20		
30		25	20	20	20		

OBSERVER'S NAME (PRINT) <i>Jim Boyd</i>	OBSERVER'S SIGNATURE <i>Jim Boyd</i>	DATE
ORGANIZATION <i>Seminole Fertilizer</i>		
CERTIFIED BY <i>Eastman Tech Assoc.</i>	DATE	<i>2/17/93</i>
CONTINUED ON VEO FORM NUMBER		

## VISIBLE EMISSION OBSERVATION FORM

No. 1

COMPANY NAME <i>Seminole Fertilizer</i>	
STREET ADDRESS Hy 60	
P.O. Box 471	
CITY <i>Bartow</i>	STATE <i>FL</i>
PHONE (KEY CONTACT) <i>(813) 534-9797</i>	SOURCE ID NUMBER <i>50 (DER)</i>

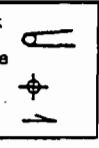
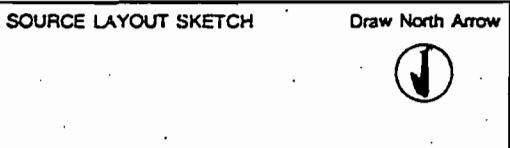
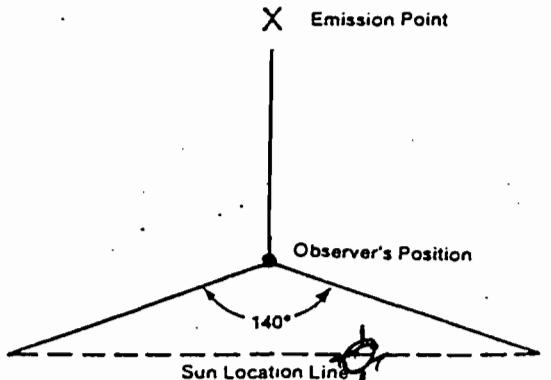
PROCESS EQUIPMENT <i>New Sulfur Pit</i>	OPERATING MODE <i>unloading</i>
CONTROL EQUIPMENT <i>None</i>	OPERATING MODE <i>—</i>

DESCRIBE EMISSION POINT <i>12" Dig. Stack</i>
--

HEIGHT ABOVE GROUND LEVEL <i>40'</i>	HEIGHT RELATIVE TO OBSERVER Start <i>40'</i> End <i>40'</i>
DISTANCE FROM OBSERVER Start <i>60'</i> End <i>60'</i>	DIRECTION FROM OBSERVER Start <i>South</i> End <i>South</i>

DESCRIBE EMISSIONS Start <i>yellowish white smoke</i> End <i>same</i>	
EMISSION COLOR Start <i>pale yellow</i> End <i>same</i>	IF WATER DROPLET PLUME Attached <input type="checkbox"/> Detached <input type="checkbox"/>
POINT IN THE PLUME AT WHICH OPACITY WAS DETERMINED Start <i>8-10' downstream</i> End <i>same</i>	

DESCRIBE PLUME BACKGROUND Start <i>SKY</i> End <i>SKY</i>		
BACKGROUND COLOR Start <i>Blue</i> End <i>Blue</i>	SKY CONDITIONS Start <i>ptly Ody</i> End <i>same</i>	
WIND SPEED Start <i>5-10</i> End <i>5-10</i>	WIND DIRECTION Start <i>West</i> End <i>West</i>	
AMBIENT TEMP Start <i>83°</i> End <i>83</i>	WET BULB TEMP <i>79°</i>	RH, percent <i>84%</i>

Stack with Plume 	SOURCE LAYOUT SKETCH 
Sun 	Wind 
	

ADDITIONAL INFORMATION
------------------------

SEC MIN	OBSERVATION DATE 3/31/93				START TIME 1315	END TIME 1345
	0	15	30	45	COMMENTS	
1	25	25	25	20		
2	20	20	25	20		
3	20	20	20	20	unloading two	
4	20	20	20	20	cars during	
5	20	20	20	20	1 hr. period	
6	25	20	25	20		
7	20	20	20	20		
8	20	20	20	20		
9	20	25	25	20		
10	20	20	20	20		
11	20	20	20	20		
12	20	20	20	20		
13	20	25	25	20		
14	20	20	20	20		
15	20	20	20	20		
16	20	20	20	20		
17	25	25	20	20		
18	20	20	20	20		
19	20	25	25	25		
20	20	20	20	20		
21	20	20	20	20		
22	20	20	20	20		
23	20	25	25	20		
24	20	20	20	20		
25	25	25	20	20		
26	20	20	20	20		
27	25	20	25	20		
28	20	20	20	20		
29	20	20	20	20		
30	20	20	20	20		

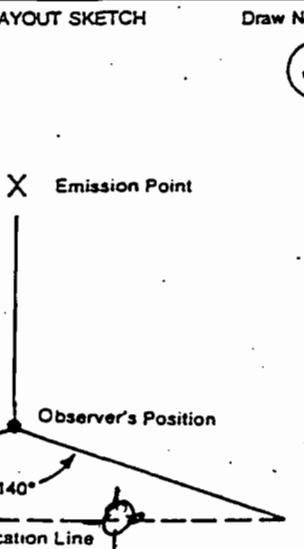
OBSERVER'S NAME (PRINT)  
*Tim Boyd*  
OBSERVER'S SIGNATURE  
*Tim Boyd* DATE *3/31/93*

ORGANIZATION  
*Seminole Fertilizer*  
CERTIFIED BY  
*Eastern Tech Assoc* DATE *2/17/93*

CONTINUED ON VEO FORM NUMBER  
*02*

## VISIBLE EMISSION OBSERVATION FORM

No. 2

COMPANY NAME <i>Seminole Fertilizer</i>		
STREET ADDRESS Hy 60		
P.O. Box 471		
CITY <i>Bartow</i>	STATE <i>FL.</i>	
PHONE (KEY CONTACT) <i>(813) 534-9793</i>	SOURCE ID NUMBER <i>50 6ER</i>	
PROCESS EQUIPMENT <i>New Sulfur Pit</i>	OPERATING MODE <i>unloading</i>	
CONTROL EQUIPMENT <i>None</i>	OPERATING MODE <i>—</i>	
DESCRIBE EMISSION POINT <i>12" Dia. Stack</i>		
HEIGHT ABOVE GROUND LEVEL	HEIGHT, RELATIVE TO OBSERVER Start      End	
DISTANCE FROM OBSERVER Start      End	DIRECTION FROM OBSERVER Start <i>South</i> End <i>South</i>	
DESCRIBE EMISSIONS Start <i>yellowish white smoke</i> End <i>same</i>		
EMISSION COLOR Start <i>yellow</i> End <i>same</i>	IF WATER DROPLET PLUME Attached <input type="checkbox"/> Detached <input type="checkbox"/>	
POINT IN THE PLUME AT WHICH OPACITY WAS DETERMINED Start <i>8-10' Downstack</i> End <i>same</i>		
DESCRIBE PLUME BACKGROUND Start <i>SKY</i> End <i>SKY</i>		
BACKGROUND COLOR Start <i>Blue</i> End <i>Blue</i>	SKY CONDITIONS Start <i>partly cloudy</i> End <i>same</i>	
WIND SPEED Start <i>5-10</i> End <i>5-10</i>	WIND DIRECTION Start <i>West</i> End <i>West</i>	
AMBIENT TEMP Start <i>83°</i> End <i>83°</i>	WET BULB TEMP <i>79°</i>	RH, percent <i>84%</i>
Stack with Plume + Sun Wind	SOURCE LAYOUT SKETCH Draw North Arrow 	
ADDITIONAL INFORMATION		

OBSERVATION DATE		START TIME		END TIME		
SEC	MIN	0	15	30	45	COMMENTS
1		20	20	20	20	
2		25	25	25	25	
3		25	20	20	20	
4		20	20	20	20	
5		20	20	20	20	
6		20	20	20	20	
7		20	25	25	25	
8		25	25	25	25	Highest period
9		20	20	25	25	for 1 hr.
10		25	30	30	25	23.3%
11		25	20	20	20	
12		20	20	20	20	
13		20	20	20	20	
14		25	20	20	20	
15		20	20	25	25	
16		25	20	20	20	
17		20	20	20	20	
18		20	20	20	20	
19		20	20	20	20	
20		20	20	20	20	
21		20	20	25	20	
22		20	20	35	20	
23		20	20	20	20	
24		20	25	25	20	
25		20	20	20	20	
26		20	20	20	20	
27		25	25	25	20	
28		20	20	20	20	
29		20	20	20	20	
30		20	20	20	25	
OBSERVER'S NAME (PRINT)						<i>Jim Boyd</i>
OBSERVER'S SIGNATURE						<i>Jim Boyd</i>
ORGANIZATION						<i>Seminole Fertilizer</i>
CERTIFIED BY						<i>Eastgate Tech Assoc.</i>
CONTINUED ON VEO FORM NUMBER						

## VISIBLE EMISSION OBSERVATION FORM

NO. 1

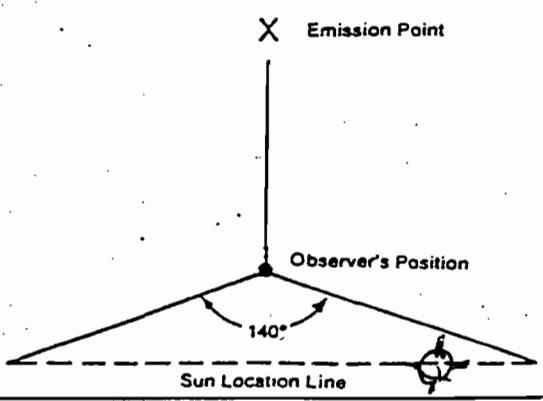
COMPANY NAME <i>Seminole Fertilizer</i>		OBSERVATION DATE <i>3/31/93</i>	START TIME <i>1515</i>	END TIME <i>1545</i>
STREET ADDRESS <i>44 60 P.O. Box 421</i>				
CITY <i>Bartow</i>	STATE <i>FL</i>	ZIP <i>33830</i>		
PHONE (KEY CONTACT) <i>(813)534-9793</i>	SOURCE ID NUMBER <i>50 (DER)</i>			
PROCESS EQUIPMENT <i>New Sulfur Pit</i>	OPERATING MODE <i>unloading</i>			
CONTROL EQUIPMENT <i>None</i>	OPERATING MODE			
DESCRIBE EMISSION POINT <i>12" Dia. Stack</i>				
HEIGHT ABOVE GROUND LEVEL <i>40'</i>	HEIGHT RELATIVE TO OBSERVER Start <i>40</i> End <i>40'</i>			
DISTANCE FROM OBSERVER Start <i>60'</i> End <i>60'</i>	DIRECTION FROM OBSERVER Start <i>SSB</i> End <i>SSE</i>			
DESCRIBE EMISSIONS Start <i>yellowish white smoke</i> End <i>Same</i>				
EMISSION COLOR Start <i>pale yellow</i> End <i>Same</i>	IF WATER DROPLET PLUME Attached <input type="checkbox"/> Detached <input checked="" type="checkbox"/>			
POINT IN THE PLUME AT WHICH OPACITY WAS DETERMINED Start <i>8-10' downstream</i> End <i>Same</i>				
DESCRIBE PLUME BACKGROUND Start <i>Sky</i> End <i>Sky</i>				
BACKGROUND COLOR Start <i>Blue</i> End <i>Blue</i>	SKY CONDITIONS Start <i>Partly cloudy</i> End <i>Same</i>			
WIND SPEED Start <i>5-8</i> End <i>5-8</i>	WIND DIRECTION Start <i>WSW</i> End <i>WSW</i>			
AMBIENT TEMP Start <i>80</i> End <i>80</i>	WET BULB TEMP <i>76</i>	RH, percent <i>87%</i>		
Stack with Plume Sun Wind	SOURCE LAYOUT SKETCH		Draw North Arrow <i>(circle with dot)</i>	
<p>X Emission Point</p> <p>Observer's Position</p> <p>140°</p> <p>Sun Location Line</p>				
ADDITIONAL INFORMATION				

SEC MIN	0	15	30	45	COMMENTS
1	20	20	20	20	
2	25	25	25	20	
3	20	20	20	20	
4	20	20	20	20	
5	25	25	25	20	unloading
6	20	20	20	20	Two cars
7	20	20	25	25	during 1 hr. period
8	25	20	20	20	
9	20	20	20	20	
10	20	25	25	25	
11	20	20	20	20	
12	20	20	20	20	
13	20	20	20	20	
14	20	20	20	25	
15	25	25	25	20	
16	20	20	20	25	
17	20	20	20	20	
18	20	20	20	20	
19	25	25	20	20	
20	20	20	20	20	
21	20	20	20	20	
22	20	20	20	20	
23	25	20	25	25	
24	20	20	20	20	
25	20	20	20	20	
26	25	25	25	25	Highest Period
27	25	25	25	25	for one hour
28	25	25	25	25	
29	25	20	20	25	23.3 %
30	25	25	20	20	

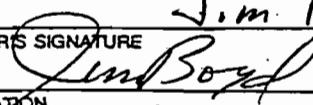
OBSERVER'S NAME (PRINT) <i>Jim Boyd</i>		DATE
OBSERVER'S SIGNATURE <i>Jim Boyd</i>	DATE <i>3/31/93</i>	
ORGANIZATION <i>Seminole Fertilizer</i>		
CERTIFIED BY <i>Eastern Tech Assoc.</i>	DATE <i>2/17/93</i>	
CONTINUED ON VEO FORM NUMBER <i>02</i>		

## VISIBLE EMISSION OBSERVATION FORM

No. 2

COMPANY NAME		Seminole Fertilizer				
STREET ADDRESS		Hy 60				
CITY		STATE	ZIP			
Bartow		FL	33830			
PHONE (KEY CONTACT)		SOURCE ID NUMBER 50 (DER)				
PROCESS EQUIPMENT		OPERATING MODE New Sulfur Pit				
CONTROL EQUIPMENT		OPERATING MODE None				
DESCRIBE EMISSION POINT 12" Dia. Stack						
HEIGHT ABOVE GROUND LEVEL 40'		HEIGHT RELATIVE TO OBSERVER Start 40' End 40'				
DISTANCE FROM OBSERVER Start 60' End 100'		DIRECTION FROM OBSERVER Start SSE End				
DESCRIBE EMISSIONS Start yellowish white smoke End same						
EMISSION COLOR Start pale yellow End same		IF WATER DROPLET PLUME Attached <input type="checkbox"/> Detached <input type="checkbox"/>				
POINT IN THE PLUME AT WHICH OPACITY WAS DETERMINED Start 8-10' Downstream End same						
DESCRIBE PLUME BACKGROUND Start SKY End SKY						
BACKGROUND COLOR Start Blue End Blue		SKY CONDITIONS Start End				
WIND SPEED Start 5-8 End 5-8		WIND DIRECTION Start End				
AMBIENT TEMP Start 80 End 80		WET BULB TEMP 76	RH, percent 87%			
Stack with Plume 	SOURCE LAYOUT SKETCH					Draw North Arrow 
Sun 						
Wind 						
 <p>X Emission Point</p> <p>Observer's Position</p> <p>140°</p> <p>Sun Location Line</p>						
ADDITIONAL INFORMATION						

OBSERVATION DATE		START TIME		END TIME	
SEC	0	15	30	45	COMMENTS
MIN					
1	20	20	20	20	
2	20	20	20	20	
3	25	25	25	20	
4	20	20	20	20	
5	20	20	25	20	
6	20	20	20	20	
7	20	20	20	20	
8	20	20	20	20	
9	25	25	25	25	
10	25	20	20	20	
11	20	20	20	20	
12	20	20	20	20	
13	20	20	25	20	
14	20	20	20	20	
15	20	20	20	20	
16	20	25	25	20	
17	20	20	20	20	
18	20	20	25	25	
19	25	25	20	20	
20	20	20	20	20	
21	20	20	20	20	
22	25	25	25	20	
23	20	20	20	20	
24	20	20	20	20	
25	20	20	20	20	
26	25	20	25	25	
27	25	20	20	20	
28	20	20	20	25	
29	20	20	20	20	
30	20	20	20	20	

OBSERVER'S NAME (PRINT)		Jim Boyd	
OBSERVER'S SIGNATURE			
DATE		3/31/93	
ORGANIZATION		Seminole Fertilizer	
CERTIFIED BY		Eastern Tech Assoc	
DATE		2/17/93	
CONTINUED ON VEO FORM NUMBER			

SEMINOLE FERTILIZER CORP., BARTOW PLANT

DATE : 03/31/93

STACK : 47

RUN : 1 SUMMARY

---PREV. DATA-----

---CALIBRATION-----

$\hat{H}$  = 1.797" Hg

Cp = 0.830

Dn = 0.310' in.

Y = 0.9731✓

---NEW DATA-----

Pb = 29.89" Hg SITE

Vm = 50.70 ACF

$\hat{H}$  = 2.06" H2O

Tm = 566.42 deg.R

H2Oc (std) /28.000 ml

H2Osg (std) /12.700 g

Ts = 670.25 deg.R

Ps = 29.90 "Hg STACK

Time = 1.00✓ hr.

Mn (F) = 0.00 mg. PMR = 0.00 lb./hr

Mn (Part) = 72.10 mg. PMR = 0.31 lb./hr

Mn (mist) = 0.00 mg. PMR = 0.00 lb./hr

Mn (SO2) = 0.00 mg. PMR = 0.00 lb./hr

Mn (N) = 0.00 mg. PMR = 0.00 lb./hr

Mn (P2O5) = 0.00 mg. PMR = 0.00 lb./hr

Vm (std) = 46.176 DSCF

Vw c (std) = 1.318 SCF

Vw sg (std) = 0.599 SCF

Vw (std) = 1.917 SCF

Bws = 0.040 MOISTURE

Ms = 28.562 MASS

Vs = 35.55 FPS

Qstd = 1485 DSCFM 89100 DSCFH

%I = 91.08 %

SEMINOLE FERTILIZER CORP., BARTOW PLANT

DATE : 03/31/93

STACK : 47

RUN : 2 SUMMARY

---PREV. DATA-----

---CALIBRATION-----

$\hat{H}$  = 1.797 "Hg

Cp = 0.830

Dn = 0.310 in.

Y = 0.9731 ✓

---NEW DATA-----

Pb = 29.89" Hg SITE

Vm = 48.40 ACF

$\hat{H}$  = 2.07" H2O

Tm = 569.00 deg.R

H2Oc (std) 31.000 ml

H2Osg (std) 12.500 g

Ts = 670.33 deg.R

Ps = 29.90 "Hg STACK

Time = 1.00 hr.

✓

Mn (F)	=	0.00 mg.	PMR	=	0.00 lb./hr
Mn (Part)	=	100.00 mg.	PMR	=	0.45 lb./hr
Mn (mist)	=	0.00 mg.	PMR	=	0.00 lb./hr
Mn (SO2)	=	0.00 mg.	PMR	=	0.00 lb./hr
Mn (N)	=	0.00 mg.	PMR	=	0.00 lb./hr
Mn (P205)	=	0.00 mg.	PMR	=	0.00 lb./hr
Vm (std)	=	43.882 DSCF			
Vw c (std)	=	1.459 SCF			
Vw sg (std)	=	0.589 SCF			
Vw (std)	=	2.049 SCF			
Bws	=	0.045 MOISTURE			
Ms	=	28.509 MASS			
Vs	=	35.63 FPS			
Qstd	=	1481 DSCFM	88860 DSCFH		
%I	=	86.80 %			

SEMINOLE FERTILIZER CORP., BARTOW PLANT

DATE : 03/31/93

STACK : 47

RUN : 3 SUMMARY

---PREV. DATA-----

Mn (F) =	0.00 mg.	PMR = 0.00 lb./hr
Mn (Part) =	49.50 mg.	PMR = 0.21 lb./hr
Mn (mist) =	0.00 mg.	PMR = 0.00 lb./hr
Mn (SO2) =	0.00 mg.	PMR = 0.00 lb./hr
Mn (N) =	0.00 mg.	PMR = 0.00 lb./hr
Mn (P2O5) =	0.00 mg.	PMR = 0.00 lb./hr

---CALIBRATION-----

$\hat{H}$  = 1.797 "Hg

Cp = 0.830

Dn = 0.310 in.

Y = 0.9731 ✓

---NEW DATA-----

Pb = 29.89" Hg SITE

Vm = 50.00 ACF

$\hat{H}$  = 2.05" H2O

Tm = 566.67 deg.R

H2Oc (std) 32.000 ml

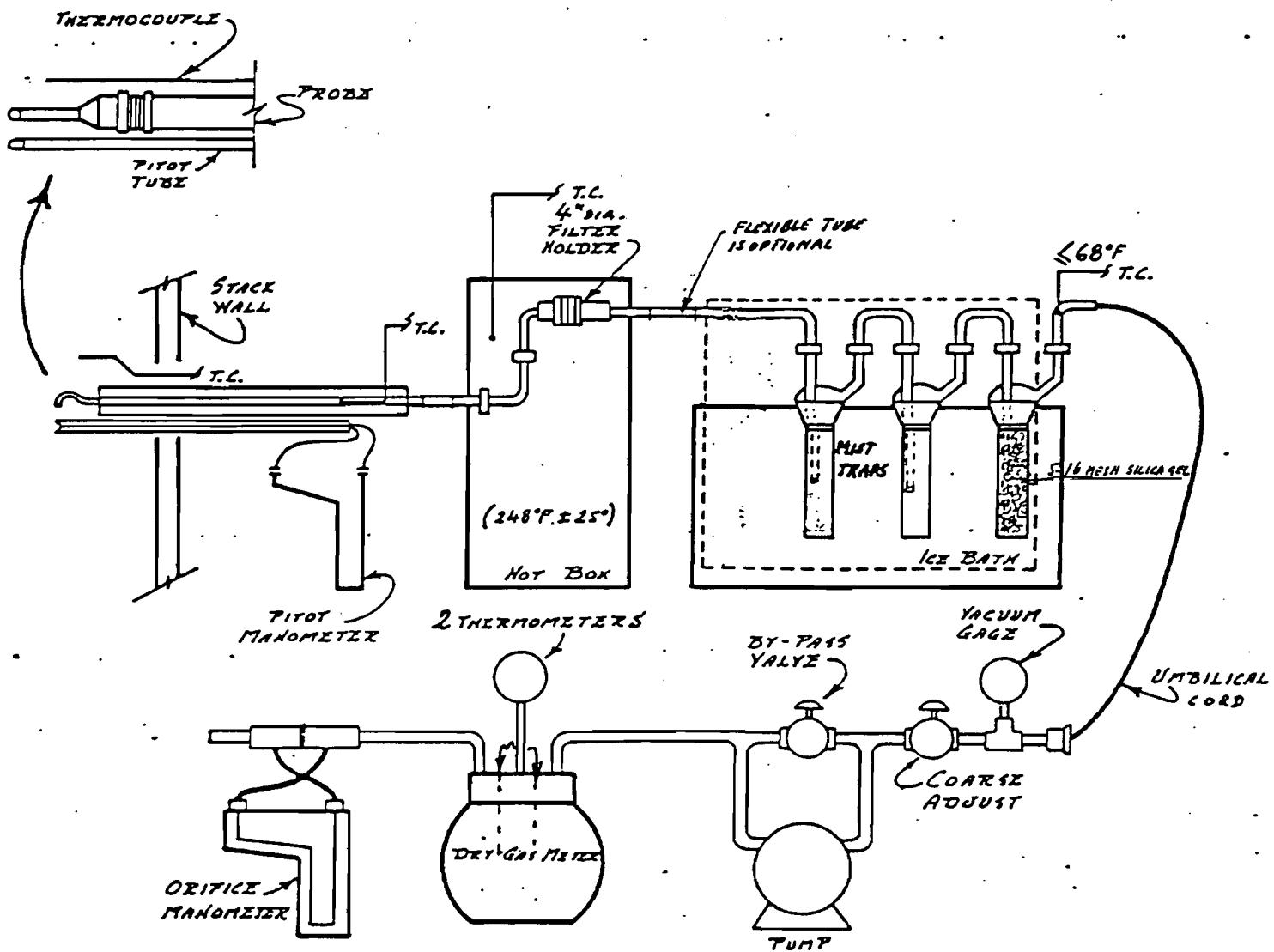
H2Osg (std) 11.100 g

Ts = 670.83 deg.R

Ps = 29.90 "Hg STACK

Time = 1.00 /hr.

Vm (std) =	45.518 DSCF
Vw c (std) =	1.506 SCF
Vw sg (std) =	0.523 SCF
Vw (std) =	2.030 SCF
Bws	= 0.043 MOISTURE
Ms	= 28.530 MASS
Vs	= 35.49 FPS
Qstd	= 1477 DSCFM
%I	= 90.27 %
	88620 DSCFH



### SEMINOLE FERTICIDE, STACK SAMPLING TRAIN

#### METHOD 5 SAMPLING TRAIN

ENVIRONMENTAL ENGINEERING

ANDERSEN
UNIV. #1283
SEPT. 1985
BARTOW
FLORIDA

BEST AVAILABLE COPY

## LOCATION OF TRAVERSE POINTS IN CIRCULAR STACKS

(PERCENT OF STACK DIAMETER FROM  
INSIDE WALL TO TRAVERSE POINT)

(as per F.R., Vol. 42, No. 160 Aug. 18, 1977)

stack int ber a ster	Number of traverse points on a diameter											
	2	4	6	8	10	12	14	16	18	20	22	24
1	14.6	6.7	4.4	3.3	2.5	2.1	1.8	1.6	1.4	1.3	1.1	1.1
2	85.4	25.0	14.7	10.5	8.2	6.7	5.7	4.9	4.4	3.9	3.5	3.2
3		75.0	29.5	19.4	14.6	11.8	9.9	8.5	7.5	6.7	6.0	5.5
4		93.3	70.5	32.3	22.6	17.7	14.6	12.5	10.9	9.7	8.7	7.9
5			85.3	67.7	34.2	25.0	20.1	16.9	14.6	12.9	11.6	10.5
6			95.6	80.6	65.8	35.5	26.9	22.0	18.8	16.5	14.6	13.2
7	-	%		89.5	77.4	64.5	36.6	28.3	23.6	20.4	18.0	16.1
8				96.7	85.4	75.0	63.4	37.5	29.6	25.0	21.8	19.4
9					91.8	82.3	73.1	62.5	38.2	30.6	26.1	23.0
0					97.5	88.2	79.9	71.7	61.8	58.8	31.5	27.2
1						93.3	85.4	78.0	70.4	61.2	39.3	32.3
2						97.9	90.1	83.1	76.4	69.4	60.7	29.8
3							94.3	87.5	81.2	75.0	68.5	60.2
4							98.2	91.5	85.4	79.6	73.9	67.7
5								95.1	89.1	83.5	78.2	72.8
6								98.4	92.5	87.1	82.0	77.0
7									95.6	90.3	85.4	80.6
8									95.6	93.3	88.4	83.9
9										96.1	91.3	86.8
0										98.7	94.0	89.5
1											96.5	92.1
2											98.9	94.5
3												96.8
4												98.9

Plant and city	Run date
SEMINOLE FERTILIZER CORPORATION	03/13/1973

Sampling location	Clock time
New SulFur P-7 #47	8:54 AM

Run number	Operator	Amb. temp. °F	Bar press. in. Hg	Static press. in. H <sub>2</sub> O
1AEB	BLANC	76°	29.89	.08

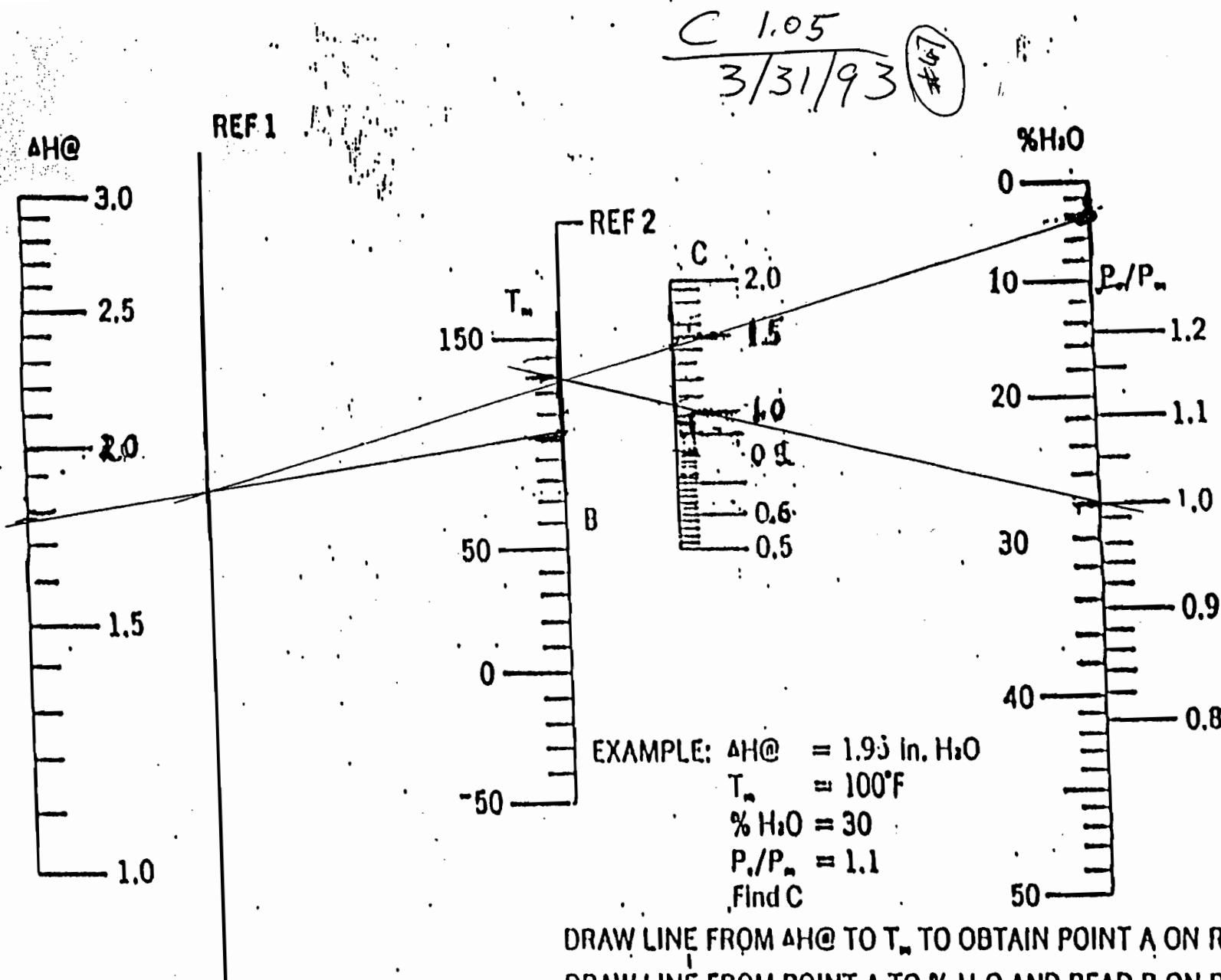
Molecular wt.	Stack inside dimension, in.		Pitot tube (Cp)
	Diam. or side 1	side 2	
1 1 1 1	1 1 1 1 1 3	1 1 1 1 1 3	-8 1 3 1 0

212/134

## Field data

Traverse point number	Position, in.	Velocity head $(\Delta p_{st})$ in. H <sub>2</sub> O	Stack temp. °F	Cyclonic flow determination	
				$\Delta p_s$ at 0° reference	Angle ( $\alpha$ ) which yields a null $\Delta p$
1	.30	NE	129		
2	.33		132		
3	.35		135		
4	.32		135		
5	.33		132		
6	.30		3D		
A 19.71					
Average angle ( $\alpha$ )°					

Average of ( $\alpha$ ) must be < 10 degrees to be acceptable.



DRAW LINE FROM  $\Delta H @$  TO  $T_a$  TO OBTAIN POINT A ON REF. 1.

DRAW LINE FROM POINT A TO  $\% H_2O$  AND READ B ON REF. 2.

DRAW LINE FROM POINT B TO  $P/P_a$ , AND OBTAIN ANSWER OF 0.74 FOR C.

Figure 9. Correction factor for C for Figure 8.

SEMINOLE FERTILIZER CORP., BARTOW PLANT

$Y = 0.973$ , Meter Delta H = 1.80, C Factor = 1.05

STACK TESTED # 47 East SULFUR PIT; RUN # 1-A

DATE 03/31/93

Stack Dia. 13"; Est. Moisture 4.0%; Barom. Press. 29.89"; Time Start 11:30

Leak Check @ 15" Hg=0.01/cu.ft. and @ max. vacuum used=0.00 Time Stop 12:00

Nozzle Dia. 0.310"; Stk. Static Press. 0.08" H<sub>2</sub>O; Operator: David Ch. Blanc

\*\*\*\*\*

Pt. No.	Sample Time min.	Meter Volume Vm ft <sup>3</sup>	Velocity Head Vp "H <sub>2</sub> O	Orifice Differ. ^H "H <sub>2</sub> O	Stack F Ts	Meter F Tm	Box F	Exit F	Pump Vacuum "Hg
1	5.0	375.5 ✓	0.30	1.90	209	89	246	68	5.00
2	5.0	379.5	0.33	2.10	211	94	254	62	5.50
3	5.0	383.7	0.31	2.00	210	100	259	61	6.00
4	5.0	388.0	0.34	2.20	211	105	263	60	7.00
5	5.0	392.4	0.33	2.10	210	108	260	62	7.00
6	5.0 ✓	396.8	0.31	2.00	210	112	256	62	7.00

END 401.0 ✓

✓

SEMINOLE FERTILIZER CORP., BARTOW PLANT

$Y = 0.973$ , Meter Delta H = 1.80; C Factor = 1.05,  
 STACK TESTED # 47 East SULFUR PIT ; RUN # 1-A DATE 03/31/93  
 Stack Dia. 13"; Est. Moisture 4.0%; Barom. Press. 29.89"; Time Start 11:30  
 Leak Check @ 15" Hg=0.01/cu.ft. and @ max. vacuum used=0.00 Time Stop 12:00  
 Nozzle Dia. 0.310"; Stk. Static Press. 0.08" H2O; Operator: David Ch. Blanc  
 \*\*\*\*

Pt. No.	Sample Time min.	Meter Volume Vm ft <sup>3</sup>	Velocity Vp "H2O	Orifice Differ. ^H "H2O	Stack F Ts	Meter F Tm	Box F	Exit F	Pump Vacuum "Hg
1	5.0	375.5 ✓	0.30	1.90	209	89	246	68	5.00
2	5.0	379.5	0.33	2.10	211	94	254	62	5.50
3	5.0	383.7	0.31	2.00	210	100	259	61	6.00
4	5.0	388.0	0.34	2.20	211	105	263	60	7.00
5	5.0	392.4	0.33	2.10	210	108	260	62	7.00
6	5.0 ✓	396.8	0.31	2.00	210	112	256	62	7.00

END 401.0 ✓

✓

SEMINOLE FERTILIZER CORP., BARTOW PLANT

$Y = 0.973$ ; Meter Delta H = 1.80; C Factor = 1.05

STACK TESTED # 47 East SULFUR PIT ; RUN # 1-B DATE 03/31/93  
 Stack Dia. 13"; Est. Moisture 4.0%; Barom. Press. 29.89"; Time Start 12:10  
 Leak Check @ 15" Hg=0.01 cu.ft. and @ max. vacuum used=0.00 Time Stop 12:40 ✓  
 Nozzle Dia. 0.310"; Stk. Static Press. 0.08" H2O; Operator: David Ch. Blanc  
 \*\*\*\*

Pt. No.	Sample Time min.	Meter Volume Vm ft <sup>3</sup>	Velocity Head Vp "H2O	Orifice Differ. ^H "H2O	Stack F Ts	Meter F Tm	Box F	Exit F	Pump Vacuum "Hg
1	5.0	401.0 ✓	0.32	2.10	210	102	257	61	7.00
2	5.0	405.2	0.34	2.20	210	107	260	63	7.50
3	5.0	409.6	0.33	2.10	209	109	262	64	7.50
4	5.0	413.8	0.31	2.00	211	115	266	64	7.50
5	5.0	417.9	0.32	2.10	212	117	263	65	7.50
6	5.0	422.2	0.30	1.90	210	119	260	64	7.00

END 426.2 ✓

✓

SEMINOLE FERTILIZER CORP., BARTOW PLANT

$\gamma = 0.973$ ; Meter Delta H = 1.80; C Factor = 1.05

STACK TESTED # 47 East SULFUR PIT ; RUN # 2-B DATE 03/31/93  
 Stack Dia. 13"; Est. Moisture 4.0%; Barom. Press. 29.89"; Time Start 01:50  
 Leak Check @ 15" Hg=0.00 cu.ft. and @ max. vacuum used=0.00 Time Stop 02:20 ✓  
 Nozzle Dia. 0.310"; Stk. Static Press. 0.08" H2O; Operator: David Ch. Blanc  
 \*\*\*\*

Pt. No.	Sample Time min.	Meter Volume Vm ft <sup>3</sup>	Velocity Vp "H2O	Orifice Differ. ^H "H2O	Stack Ts	Meter Tm	Box F	Exit F	Pump Vacuum "Hg
1	5.0	452.9 ✓	0.33	2.10	211	103	253	62	6.50
2	5.0	455.1	0.34	2.20	210	109	259	63	7.00
3	5.0	459.4	0.32	2.10	211	114	262	64	7.00
4	5.0	463.6	0.31	2.00	210	117	267	64	7.00
5	5.0	467.7	0.33	2.10	207	118	260	66	7.00
6	5.0 ✓	471.9	0.30	1.90	209	119	258	66	6.50

END 475.9 ✓

SEMINOLE FERTILIZER CORP., BARTOW PLANT

Y = 0.973; Meter Delta H = 1.80; C Factor = 1.05

STACK TESTED # 47 East SULFUR PIT ; RUN # 3-A

DATE 03/31/93

Stack Dia. 13"; Est. Moisture 4.0%; Barom. Press. 29.89"; Time Start 03:15

Leak Check @ 15" Hg=0.00 cu.ft. and @ max. vacuum used=0.00 Time Stop 03:45 ✓

Nozzle Dia. 0.310"; Stk. Static Press. 0.08" H2O; Operator: David Ch. Blanc

\*\*\*\*\*

Pt. No.	Sample Time min.	Meter Volume Vm ft <sup>3</sup>	Velocity Vp "H2O	Orifice Differ. ^H "H2O	Stack F Ts	Meter F Tm	Box F	Exit F	Pump Vacuum "Hg
1	5.0	478.0 ✓	0.30	1.90	214	89	227	64	5.50
2	5.0	482.0	0.32	2.10	210	98	239	62	6.50
3	5.0	486.3	0.32	2.10	212	103	249	62	6.50
4	5.0	490.5	0.34	2.20	211	107	253	62	6.50
5	5.0	494.8	0.33	2.10	209	109	260	61	6.50
6	5.0	499.0	0.30	1.90	211	112	261	60	6.00

END 503.0 ✓

## SEMINOLE FERTILIZER CORP., BARTOW PLANT

Y = 0.973; Meter Delta H = 1.80; C Factor = 1.05  
 STACK TESTED # 47 East SULFUR PIT; RUN # 3-B DATE 03/31/93  
 Stack Dia. 13"; Est. Moisture 4.0%; Barom. Press. 29.89"; Time Start 04:00  
 Leak Check @ 15" Hg=0.00 cu.ft. and @ max. vacuum used=0.00 Time Stop 04:30 ✓  
 Nozzle Dia. 0.310"; Stk. Static Press. 0.08" H2O; Operator: David Ch. Blanc  
 \*\*\*\*

Pt. No.	Sample Time min.	Meter Volume Vm ft <sup>3</sup>	Velocity Vp "H2O	Orifice Differ. ^H "H2O	Stack Ts	Meter F Tm	Box F	Exit F	Pump Vacuum "Hg
1	5.0	503.0 ✓	0.32	2.10	209	101	257	64	6.50
2	5.0	507.2	0.33	2.10	211	107	260	62	7.00
3	5.0	511.4	0.33	2.10	208	111	266	61	7.00
4	5.0	515.7	0.31	2.00	212	112	263	61	6.50
5	5.0	519.8	0.32	2.10	211	115	264	60	7.00
6	5.0	524.0	0.30	1.90	212	116	251	60	6.50

END 528.0 ✓

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SEMINOLE FERT. CO.Environmental Control Lab Report

## PARTICULATE DETERMINATION

Date Sampled	3/31/93					
Sample Description	FILT. PAPER SULFUR PIT 000705	000706	000707	000708	2 BLANK	
Gross Weight, g	0.9643	0.9788	0.9444	0.9577	.....	.....
Tare Weight, g	0.9439	0.9630	0.9268	0.9578		
Net wt. of Solids, mg	20.4	15.8	17.6	0.0		
Total Volume, ml						
Aliquot, ml						
Total Solids, mg	20.4	15.8	17.6	0.0		
Total Solids, mg/l						
	DRY BULB	WET BULB	REL. HUMID.			
3/12/93	79°	65°	47%			
4/1/93	88°	73°	49%			

Analyst's name JiongDate of analysis 4/1/93



DEPARTMENT OF ENVIRONMENTAL AFFAIRS  
SEMINOLE FERT. & CO. BARTOW WORKS

CHAIN OF CUSTODY

Stack Sampled: No. SULFUR STACK PIT

Date of Sample: 3/31/93

Sampled by: DAVID, RICHARD, ARI

Items left in DEA laboratory by DAVID  
(name)

Date: 3/31/93

Time: 3:30 P.M.

- a) 3 filters (in Petri dishes)
- b) 3 probe wash bottles
- c) 3 bottles of impinger water, for F only.

All of the above items were received on 3/31/93 3:30 P.M.  
(date and time)  
and analyzed on 4/1/93  
(date)

Water level on the above jars was checked by the Chemist and found:  
changed; X unchanged.

Filter paper checked for damage X YES;    NO  
CaSO<sub>4</sub>; color Blue

W.T. Tjiong  
W. T. Tjiong, DEA Chemist

**TYPE S PITOT TUBE INSPECTION DATA**

Date: 3/31/93

Pitot Tube Designation: ANDERSON

Pitot Tube Length: 3'

Pitot tube assembly level? Yes yes \_\_\_\_\_

Pitot tube openings damaged? No Yes (explain below) \_\_\_\_\_

$a_1 = \checkmark (< 10^\circ)$ ,  $a_2 = \checkmark (< 10^\circ)$ ,  $B_1 = \text{_____} (< 5^\circ)$

$b_2 = \checkmark (< 5^\circ)$

$\gamma = \text{_____}^\circ$ ,  $\theta = \text{_____}^\circ$ ,  $A = \text{_____}$  (in.)

$z = A \sin \gamma = \frac{< 1/8}{\text{_____}} \text{ (in.)}; < 0.32 \text{ cm } (1/8 \text{ in.})$

$w = A \sin \theta = \frac{< 1/32}{\text{_____}} \text{ (in.)}; < 0.08 \text{ cm } (1/32 \text{ in.})$

$P_A = \frac{1/32}{\text{_____}} \text{ (in.)}$

$P_b = \text{_____}$  (in.)

$D_t = \frac{5/16}{\text{_____}} \text{ (in.)}$

Comments: PITOT TUBE NOT DAMAGED DURING  
TESTING

Calibration required? yes  no

Calibrating Personnel R. Peeks

## METER BOX CALIBRATION DATA AND CALCULATION FORM

(English units)

Date 1/24/93Meter box number A-2Barometric pressure,  $P_b = 30.35$  in. Hg Calibrated by WAKE

Orifice manometer setting ( $\Delta H$ ), in. $H_2O$	Gas volume		Temperature			Time (θ), min	$y_i$	$\Delta H@_i$ , in. $H_2O$		
	Wet test meter ( $V_w$ ), ft <sup>3</sup>	Dry gas meter ( $V_d$ ), ft <sup>3</sup>	Wet test meter ( $t_w$ ), °F	Dry gas meter						
				Inlet ( $t_{d_i}$ ), °F	Outlet ( $t_{d_o}$ ), °F	Avg ( $t_d$ ), °F				
0.5	5	5.427	70	102	75	89	12.78	9531 1.746		
1.0	5	5.402	70	113	79	96	9.22	9688 1.794		
1.5	10	10.815	70	122	83	103	15.08	9787 1.778		
2.0	10	10.897	72	128	87	106	13.2	975 1.814		
3.0	10	10.831	72	131	90	111	10.78	9838 1.805		
4.0	10	10.658	72	131	91	111	9.43	979.1 1.842		
						Avg	9731	1.797		

$\Delta H$ , in. $H_2O$	$\frac{\Delta H}{13.6}$	$y_i = \frac{V_w P_b (t_d + 460)}{V_d (P_b + \frac{\Delta H}{13.6}) (t + 460)}$	$\Delta H@_i = \frac{0.0317 \Delta H}{P_b (t_d + 460)} \left[ \frac{(t_w + 460) \theta}{V_w} \right]^2$
0.5	0.0368	$\frac{5 (30.35) 549}{5.427 (30.39) 530}$	$\frac{.0317 (.5)}{30.35 (549)} \left[ \frac{530 (12.78)}{5} \right]^2$
1.0	0.0737	$\frac{5 (30.35) 556}{5.402 (30.42) 530}$	$\frac{.0317 (1.0)}{30.35 (556)} \left[ \frac{530 (9.22)}{5} \right]^2$
1.5	0.110	$\frac{10 (30.35) 563}{10.815 (30.46) 530}$	$\frac{.0317 (1.5)}{30.35 (563)} \left[ \frac{530 (15.08)}{10} \right]^2$
2.0	0.147	$\frac{10 (30.35) 568}{10.897 (30.5) (532)}$	$\frac{.0317 (2.0)}{30.35 (568)} \left[ \frac{532 (13.2)}{10} \right]^2$
3.0	0.221	$\frac{10 (30.35) 571}{10.831 (30.57) 532}$	$\frac{.0317 (3.0)}{30.35 (571)} \left[ \frac{532 (10.78)}{10} \right]^2$
4.0	0.294	$\frac{10 (30.35) 571}{10.658 (30.64) 532}$	$\frac{.0317 (4.0)}{30.35 (571)} \left[ \frac{532 (9.43)}{10} \right]^2$

\* If there is only one thermometer on the dry gas meter, record the temperature under  $t_d$ .

PRE - TEST    CALIBRATION COEFFICIENT CHECK

Module No. \_\_\_\_\_

Date: 3-31-93Time: 705/AMInitial  $\gamma$  = .9731Initial  $A \cdot H \cdot G$  = 1.797

Adjusted

Dry Gas Meter Volume Sampled ( $m^3$ ) = 10.000Time Elapsed = 12.51 min.

$$\gamma_{ind} = \frac{(\text{Time min. } 10.75) \text{ cm}}{10}$$

$$\frac{(12.85)(0.75)}{10}$$

$$\% \text{ Deviation} = \frac{\gamma_{ind} - \gamma_{initial}}{\gamma_{initial}} \times 100$$

$$\underline{(.9638) - (.9731)} = 100$$

The  $\gamma_{ind}$  is within the allowable 3%: 0.9%

2 >

POSTTEST DRY GAS METER CALIBRATION DATA FORM (English units)

Test numbers 1A-BFC Date 2-27-93 Meter box number A-2 Plant \_\_\_\_\_  
 Barometric pressure,  $P_b$  = 29.87 in. Hg Dry gas meter number ANDERSON Pretest Y .9731

Orifice manometer setting, $(\Delta H)$ , in. $H_2O$	Gas volume		Temperature			Time ( $\theta$ ), min	Vacuum setting, in. Hg	$Y_i$	$Y_i$ $V_w P_b (t_d + 460)$
	Wet test meter ( $V_w$ ), ft <sup>3</sup>	Dry gas meter ( $V_d$ ), ft <sup>3</sup>	Wet test meter ( $t_w$ ), °F	Inlet ( $t_{d1}$ ), °F	Outlet ( $t_{d0}$ ), °F				
2.00	10	10.579	62/522	119	84	102/561	13.05	10"	1.011
2.00	10	10.812	62/522	122	85	104/564	12.55	10"	.9946
2.00	10	10.900	62/522	123	86	105/565	13.11	10"	.9888
									.9978-9731

$V_w$  = Gas volume passing through the wet test meter, ft<sup>3</sup>.

$V_d$  = Gas volume passing through the dry gas meter, ft<sup>3</sup>.

$t_w$  = Temperature of the gas in the wet test meter, °F.

$t_{d1}$  = Temperature of the inlet gas of the dry gas meter, °F.

$t_{d0}$  = Temperature of the outlet gas of the dry gas meter, °F.

$t_d$  = Average temperature of the gas in the dry gas meter, obtained by the average of  $t_{d1}$  and  $t_{d0}$ , °F.

$\Delta H$  = Pressure differential across orifice, in  $H_2O$ .

$Y_i$  = Ratio of accuracy of wet test meter to dry gas meter for each run.

$Y$  = Average ratio of accuracy of wet test meter to dry gas meter for all three runs;  
 tolerance = pretest  $Y \pm 0.05Y$

$P_b$  = Barometric pressure, in. Hg.

= 0.0259

### Thermometer Calibration.

Seminal Fert.  
P.C. 822 471  
Lewes, Fiend 33420

EXCELSIOR BLANC 3/31/93  
EXCELSIOR BLANC 3/31/93  
EXCELSIOR REVERSE 3/31/93

SARTORIUS PRESSURE 29 .89 Hg  
ABSCISSA. 80 °F

## NOZZLE CALIBRATION

Date 3/31Calibrated by Wade

Nozzle identification number	$D_1$ , in.	$D_2$ , in.	$D_3$ , in.	$\Delta D$ , in.	$D_{avg}$
Before 5/16	.310	.310	.310	0.000	.310
after 5/16	.310	.310	.311	0.001	.310

where:

$D_{1,2,3}$  = nozzle diameter measured on a different diameter, in.  
 Tolerance = measure within 0.001 in.

$\Delta D$  = maximum difference in any two measurements, in.  
 Tolerance = 0.004 in.

$D_{avg}$  = average of  $D_1$ ,  $D_2$ , and  $D_3$ .

Nozzle calibration data.

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Place New Sulfur P.T. Stack No. #47 Operator: BLANC Date 3-31-93  
 Run No. 3A & B Stack dia. 13"; Time: start 1515, 1545 end 1600, 1630 hrs., "C" Farter/los  
 Sample Box No. #3 Barom. ( $\frac{P}{A}$ ) at site (at meter box) 29.89 "g; Probe head setting + 3  
 Meter Box: A-2 Stack pressure  $\frac{P}{A}$  -0.8 "g, g; Probe length 3' ft. and C -1.3 30.  
 Meter  $\Delta H_3$  1,797  $\frac{\text{ft}^3}{\text{min}}$  9731 STACK: 2.3  $\frac{\text{ft}^3}{\text{min}}$  212 °F; W.E. — °F = Stack moisture 4%  
 Filter No. 707 Nozzle No. B-4 Nozzle dia. 3/10" - Probe leak case G 5" = 0.00 "  
 Ambient temp. 80 °F W.E. CHECK: Pre-case G 15 "g = 0.01 Post-case G 12 "g = 0.01 cm  
 Post-case nozzle inspection ✓; Post-case Probe tube inspection ✓

Lab Worksheets Summary: Stack No. SULFUR PIT: by Methods 5 & 138

Date sampled 3/31/93

Date analyzed 4/1/93

<u>PARTICULATES, mg</u>	<u>Run 1</u>	<u>Run 2</u>	<u>Run 3</u>
a) Probe Wash	51.7	84.2	31.9
b) Filter	20.4	15.8	17.6
c) Blank	(0.0)	(0.0)	(0.0)
<u>TOTAL</u>	<u>72.1</u>	<u>100.0</u>	<u>49.5</u>

<u>GASES, mg</u>	<u>Run 1</u>	<u>Run 2</u>	<u>Run 3</u>
F: a) Probe Wash	-	-	-
b) Filter	-	-	-
c) Impingers	--	-	-
d) Blank	-	-	-
<u>TOTAL</u>			

<u>N</u>	a) Probe Wash	---	-	---
b) Filter	-	-	-	-
c) Impingers	-	-	-	-
<u>TOTAL</u>				

<u>P<sub>2</sub>O<sub>5</sub></u>	a) Probe Wash	---	-	---
b) Filter	---	---	-	-
c) Impingers	-	-	-	-
<u>TOTAL</u>				

Chemist

Tjiong

Stack Moisture Determination by EPA Method 4

Scrubber: New Sy FUR P Stack No. #47 Date 3/3/93

<u>Run 1.</u> <u>Impinger</u>	<u>No. 1</u>	<u>No. 2</u>	<u>No. 3</u>	<u>Total</u>
Tare, g	100	100	0	200
Gross (final) g	113	105	10	228
Total gain, ml	13	5	10	28 = H <sub>2</sub> Oc

Silica Gel Bottle:

Tare, g 703.0

Gross, g 715.7

Gain, g 12.7 = H<sub>2</sub>Osg

<u>Run 2.</u> <u>Impinger</u>	<u>No. 1</u>	<u>No. 2</u>	<u>No. 3</u>	<u>Total</u>
Tare, g	100	100	0	200
Gross (final) g	112	111	8	231
Total gain, ml	12	11	8	31 = H <sub>2</sub> Oc

Silica Gel Bottle:

Tare, g 672.0

Gross, g 689.5

Gain, g 12.5 = H<sub>2</sub>Osg

<u>Run 3.</u> <u>Impinger</u>	<u>No. 1</u>	<u>No. 2</u>	<u>No. 3</u>	<u>Total</u>
Tare, g	100	100	0	200
Gross (final) g	113	112	7	232
Total gain, ml	13	12	7	32 = H <sub>2</sub> Oc

Silca Gel Bottle:

Tare, g 703.7

Gross, g 714.8

Gain, g 11.1 = H<sub>2</sub>Osg

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Place <u>New Suffolk</u>		Stack No. <u>#47</u>	Seminole <u>SAFETY WORKS</u> , <u>TEST DATA FORM</u>
		operator: <u>BLANC</u>	Date <u>3/31/93</u>
Run No. <u>#2A&amp;B</u>	Stack dia. <u>13</u>	stack <u>115,145</u>	stack <u>150,200</u> revs. <u>"C"</u> Factor/105
Seminole Box No. <u>#2</u>	Barom. ( $P_b$ ) on stack (as meter box) <u>29.89</u>	deg. Probe heat swelling <u>3</u>	
Meter Box: <u>A-2</u>	Stack S.P. ( $P_s$ ) <u>.08</u>	deg. Probe length <u>3'</u> in., and C <u>-1.8</u>	<u>30</u>
Meter $\Delta H_3$ <u>1.797</u>	<u>.9731</u>	stack <u>2.3</u> , <u>212°F</u> , W.I. <u>-</u>	deg. Enclosure <u>4%</u>
Nozzle No. <u>706</u>	Nozzle dia. <u>3/10</u>	Probe leak case C <u>5</u>	<u>0.00</u> "
Ambient temp. <u>63</u> °F	W.L.C. CHECK: Pre-case C <u>15</u> " = <u>0.00</u>	Post-case C <u>10"</u> " = <u>0.00</u> cm	
Post-case nozzle inspection <u>✓</u>	Post-case Probe tube inspection <u>✓</u>		
		<u>0.5663</u>	<u>2.0067</u>
		<u>210.33</u>	<u>108.79</u>

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## Seminole SARTORIUS WORKS FIELD DATA FORM

Plant New Sulfur P.T. Stack No. #44 Operator: BLANC Date 3-31-93

Run No. 1A&B Stack dia. 13; Time: start 1130, end 1210, hrs.. "T" Factor/05

Sample Box No. #1 Barom. ( $P_0$ ) at site (ac meter box) 29.89 "Hg; Probe head spacing 3

Meter Box: A-2 Stack S.P. ( $P_1$ ) .08 "Hg; Probe length 3' in., and  $C = 1.3$  .30.

Meter  $\Delta H_3 = 1.797$  "Hg 9731 STACK: 0.3. 212 °F; U.L. - °F; + Zsc. moisture 4%

Filter No. 705 Nozzle No. B-4 Nozzle dia. .310 - Probe leak test @ 5.4 = 0.00 "

Ambient temp. 82 °F LEAK CHECKS: Pre-test @ 15 "Hg = 0.01 Post-test @ 10 "Hg = 0.00 CM -

Post-test nozzle inspection ✓; Post-test Probe tube inspection ✓  
0.5656    2.0583    210.25    105.96

Test no.	Sample time min	Gas Vol. C.L. Pt.	Veloc. at orifice P <sub>1</sub> , in. N.S.	Orifice H.in.	Vacuum in.deg	Stack Tempo.	Probe temp. ° in. out	Oven Tempo. °F	Lav °F
1	5	375.5	.30	1.90	5.0	209	87   89   85   246   68		
2		379.5	.33	2.10	5.5	211	94   102   86   254   62		
3		383.7	.31	2.00	6.0	210	100   112   87   259   61		
4		388.0	.34	2.20	7.0	211	105   119   90   263   60		
5		392.4	.33	2.10	7.0	210	108   123   92   260   62		
6	5	396.8	.31	2.00	7.0	210	112   129   94   256   62		
7									
8									
9									
10									
11									
12									
Final		401.0							
1	5	401.0	.32	2.10	7.0	210	102   112   92   257   61		
2		405.2	.34	2.20	7.5	210	107   119   94   260   63		
3		409.6	.33	2.10	7.5	209	109   123   95   262   64		
4		413.8	.31	2.00	7.5	211	115   131   98   266   64		
5		417.9	.32	2.10	7.5	212	117   134   99   263   65		
6		422.2	.30	1.90	7.0	210	119   137   101   260   64		
7	5								
8									
9									
10									
11									
12									
Final		426.2							