STATE OF FLORIDA

DEPARTMENT OF ENVIRONMENTAL REGULATION

TWIN TOWERS OFFICE BUILDING
2600 BLAIR STONE ROAD
TALLAHASSEE, FLORIDA 32301-8241

BOB GRAHAM
GOVERNOR

VICTORIA J. TSCHINKEL
SECRETARY

February 6, 1986

CERTIFIED MAIL-RETURN RECEIPT REQUESTED

Mr. L. C. Lahman
Plant Manager
Agrico Chemical Company
South Pierce Chemical Works
Post Office Box 1969
Bartow, Florida 33830

Dear Mr. Lahman:

Attached is one copy of the Technical Evaluation and Preliminary Determination, and proposed permit to construct a sulfur pellet handling and melting facility at the South Pierce Chemical Works in Bartow, Polk County, Florida.

Before final action can be taken on your permit, you are required by Florida Administrative Code Rule 17-103.150 to publish the attached Notice of Proposed Agency Action in the legal advertising section of a newspaper of general circulation in Polk County no later than fourteen days after receipt of this letter. The DER Bureau of Air Quality Management must be provided with proof of publication within seven days of the date the notice is published. Failure to publish the notice may be grounds for denial of the permit.

Please submit, in writing, any comments which you wish to have considered concerning the department's proposed action to Mr. Bill Thomas of the Bureau of Air Quality Management.

Sincerely,

for C. H. Fancy, P.E.
Deputy Chief
Bureau of Air Quality
Management

CHF/pa
Attachments
cc: William S. Hornbeck, P.E.
Edward de la Parte
Bill Thomas

P 408 533 738

RECEIPT FOR CERTIFIED MAIL

NO INSURANCE COVERAGE PROVIDED—
NOT FOR INTERNATIONAL MAIL

(See Reverse)

Sent to Mr. L. C. Lahman	
Street and No.	
P.O., State and ZIP Code	
Postage	$
Certified Fee	
Special Delivery Fee	
Restricted Delivery Fee	
Return Receipt Showing to whom and Date Delivered	
Return Receipt Showing to whom, Date, and Address of Delivery	
TOTAL Postage and Fees	$
Postmark or Date 2/6/86	

PS Form 3800, Feb. 1982

PS Form 3811, July 1983

SENDER: Complete items 1, 2, 3 and 4.

Put your address in the "RETURN TO" space on the reverse side. Failure to do this will prevent this card from being returned to you. The return receipt fee will provide you the name of the person delivered to and the date of delivery. For additional fees the following services are available. Consult postmaster for fees and check box(es) for service(s) requested.

1. ☐ Show to whom, date and address of delivery.
2. ☐ Restricted Delivery.

3. Article Addressed to:
Mr. L. C. Lahman
Agrico Chemical Company
Post Office Box 1969
Bartow, Florida 33830

4. Type of Service:
☐ Registered ☐ Insured
☒ Certified ☐ COD
☐ Express Mail

Article Number
P 408 533 738

Always obtain signature of addressee or agent and DATE DELIVERED.

5. Signature – Addressee
X

6. Signature – Agent
X

7. Date of Delivery
2-11-86

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

DOMESTIC RETURN RECEIPT

State of Florida
Department of Environmental Regulation
Notice of Proposed Agency Action
on Permit Application

The Department of Environmental Regulation gives notice of its intent to issue a permit to Agrico Chemical Company to construct a sulfur pellet handling and melting facility at their existing South Pierce Chemical Works in Bartow, Polk County, Florida. A determination of best available control technology (BACT) was not required.

Persons 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 conform to the requirements of Chapters 17-103 and 28-5, Florida Administrative Code, and must be filed (received) in the Office of General Counsel of the Department at 2600 Blair Stone Road, Twin Towers Office Building, Tallahassee, Florida 32301, within fourteen (14) days of publication of this notice. Failure to file a request for hearing within this time period constitutes a waiver of any right such person may have to request an administrative determination (hearing) under Section 120.57, Florida Statutes.

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 proposed agency action. Therefore, persons who may not wish to file a petition may wish to intervene in the proceeding. A petition for intervention must be filed pursuant to Model Rule 28-5.207, Florida Administrative Code, at least five (5) days before the final hearing and be filed with the hearing officer if one has been assigned at the Division of Administrative Hearings, Department of Administration, 2009, Apalachee Parkway, Tallahassee, Florida 32301. If no hearing officer has been assigned, the petition is to be filed with the department's Office of General Counsel, 2600 Blair Stone Road, Tallahassee, Florida 32301. Failure to petition to intervene within the allowed time frame constitutes a waiver of any right such person has to request a hearing under Section 120.57, Florida Statutes.

The application is available for public inspection during normal business hours, 8:00 a.m. to 5:00 p.m., Monday through Friday, except legal holidays, at:

Dept. of Environmental Regulation
Bureau of Air Quality Management
2600 Blair Stone Road
Tallahassee, Florida 32301

Dept. of Environmental Regulation
Southwest District
7601 Highway 301 North
Tampa, Florida 33610

Any person may send written comments on the proposed action to Mr. Bill Thomas at the department's Tallahassee address. All comments mailed within 30 days of the publication of this notice will be considered in the department's final determination.

BEFORE THE STATE OF FLORIDA
DEPARTMENT OF ENVIRONMENTAL REGULATION

In the Matter of Application for Permit by: Agrico Chemical Company Post Office Box 1969 Bartow, Florida 33830	))))))	DER File No. AC 53-111196

INTENT TO ISSUE

The Department of Environmental Regulation hereby gives notice of its Intent to Issue, and proposed order of issuance for, a permit pursuant to Chapter 403, Florida Statutes, for the proposed project as detailed in the application specified above. The Department is issuing this Intent to Issue for the reasons stated in the attached Technical Evaluation and Preliminary Determination.

The applicant, Agrico Chemical Company, applied on October 1, 1985, to the Department of Environmental Regulation for a permit to construct a sulfur pellet handling and melting facility at their South Pierce Chemical Works in Bartow, Polk County, Florida.

The Department has permitting jurisdiction under Chapter 403, Florida Statutes and Florida Administrative Code Rules 17-2 and 17-4. The project is not exempt from permitting procedures. The applicant was officially notified by the Department that an air construction permit was required for the proposed work.

This intent to issue shall be placed before the Secretary for final action unless an appropriate petition for a hearing pursuant to the provisions of Section 120.57, Florida Statutes, is filed within fourteen (14) days from receipt of this letter or

publication of the public notice (copy attached) required pursuant to Rule 17-103.150, Florida Administrative Code, whichever occurs first. The petition must comply with the requirements of Section 17-103.155 and Rule 28-5.201, Florida Administrative Code (copy attached) and be filed pursuant to Rule 17-103.155(1) in the Office of General Counsel of the Department of Environmental Regulation at 2600 Blair Stone Road, Tallahassee, Florida 32301.

Petitions which are not filed in accordance with the above provisions are subject to dismissal by the Department. In the event a formal hearing is conducted pursuant to Section 120.57(1), all parties shall have an opportunity to respond, to present evidence and argument on all issues involved, to conduct cross-examination of witnesses and submit rebuttal evidence, to submit proposed findings of facts and orders, to file exceptions to any order or hearing officer's recommended order, and to be represented by counsel. If an informal hearing is requested, the agency, in accordance with its rules of procedure, will provide affected persons or parties or their counsel an opportunity, at a convenient time and place, to present to the agency or hearing officer, written or oral evidence in opposition to the agency's action or refusal to act, or a written statement challenging the grounds upon which the agency has chosen to justify its action or inaction, pursuant to Section 120.57(2), Florida Statutes.

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 proposed agency action. Therefore, persons who may not wish to file a petition, may wish to intervene in the proceeding. A petition for intervention must be filed pursuant to Model Rule 28-5.207 at least five (5) days before the final hearing and be filed with the hearing officer if one has been assigned at the Division of

Administrative Hearings, 2009 Apalachee Parkway, Tallahassee, Florida 32301. If no hearing officer has been assigned, the petition is to be filed with the Department's Office of General Counsel, 2600 Blair Stone Road, Tallahassee, Florida 32301. Failure to petition to intervene within the allowed time frame constitutes a waiver of any right such person has to request a hearing under Section 120.57, Florida Statutes.

Executed the 6th day of February, 1986, in Tallahassee, Florida.

STATE OF FLORIDA DEPARTMENT
OF ENVIRONMENTAL REGULATION

for C. H. Fancy, P.E.
Deputy Chief
Bureau of Air Quality
Management

Copies furnished to:

Mr. L. C. Lahman
Mr. William S. Hornbeck, P.E.
Mr. Edward de la Parte, Jr.
Mr. Bill Thomas

CERTIFICATION

This is to certify that the foregoing Intent to Issue and all copies were mailed before the close of business on Feb. 6, 1986.

for C. H. Fancy, P.E.
Deputy Chief
Bureau of Air Quality
Management
2600 Blair Stone Road
Tallahassee, Florida 32301

FILING AND ACKNOWLEDGEMENT
FILED, on this date, pursuant to §120.52(9), Florida Statutes, with the designated Department Clerk, receipt of which is hereby acknowledged.

Patricia G. Adams — Clerk
Feb. 6, 1986 — Date

RULES OF THE ADMINISTRATIVE COMMISSION
MODEL RULES OF PROCEDURE
CHAPTER 28-5
DECISIONS DETERMINING SUBSTANTIAL INTERESTS

28-5.15 Requests for Formal and Informal Proceedings

(1) Requests for proceedings shall be made by petition to the agency involved. Each petition shall be printed typewritten or otherwise duplicated in legible form on white paper of standard legal size. Unless printed, the impression shall be on one side of the paper only and lines shall be double spaced and indented.

(2) All petitions filed under these rules should contain:

(a) The name and address of each agency affected and each agency's file or identification number, if known;

(b) The name and address of the petitioner or petitioners;

(c) All disputed issues of material fact. If there are none, the petition must so indicate;

(d) A concise statement of the ultimate facts alleged, and the rules, regulations and constitutional provisions which entitle the petitioner to relief;

(e) A statement summarizing any informal action taken to resolve the issues, and the results of that action;

(f) A demand for the relief to which the petitioner deems himself entitled; and

(g) Such other information which the petitioner contends is material.

Technical Evaluation
and
Preliminary Determination

Agrico Chemical Company
South Pierce Chemical Works
Polk County, Florida

Sulfur Pellets Handling and Melting Facility

Permit Number: AC 53-111196

Florida Department of Environmental Regulation
Bureau of Air Quality Management
Central Air Permitting

January 29, 1986

I. Application

A. Applicant

Agrico Chemical Company
P. O. Box 1969
Bartow, Florida 33830

B. Project and Location

The applicant proposes to modify a permit to construct a sulfur pellet handling and melting facility at their existing South Pierce Chemical Works (SPCW). The project will involve receiving a maximum of 600,000 long tons per year (LTPY) of sulfur pellets by rail-cars or trucks, unloading into an underground hopper, conveying to a 150 ton (T) surge bin, feeding to two out of three 900 long tons per day (LTPD) static melters, and then supplying the molten sulfur to their existing, on-site, sulfuric acid plant.

The UTM coordinates of the facility are:

Zone: 17
Easting: 407.6 km
Northing: 3071.3 km

C. Sources Reviewed

The main sources reviewed in this technical evaluation are:

(a) Railcar/Truck unloading
(b) Hopper to conveyor-belt transfer
(c) Conveyor-belt to surge bin transfer
(d) Vapor Scrubber

Agrico Chemical Company applied for the modification of their current permit on October 1, 1985. The application was deemed complete on December 2, 1985.

D. Facility Category

The facility at SPCW is classified under the Standard Industrial Classification (SIC) Code as Group No. 20, Chemical and Allied Products, and Industry No. 2819, Sulfuric Acid Contact Process. The proposed modified project will be a new minor source in an existing major facility.

II. Project

A. Process and Controls

Standard sulfur pellets will be received in covered hopper railroad cars, or covered hopper trucks, and will be positioned

over the unloading hopper within an unloading shed. The unloading hopper will be a below grade small hopper which will receive material from only one hopper section of a railcar at a time. The unloading hopper will be equipped with high efficiency water sprays around the periphery, which will collect 85% of the particulate generated by this free fall. The spray water will contain a surfactant.

Under normal unloading conditions the unloading hopper will be full, and the flow from the hopper car or hopper truck will be under choked conditions.

The sulfur pellets will be transferred from the belt feeder, at the bottom of the unloading hopper, to the unloading conveyor belt and conveyed to the 150 ton surge hopper. The transfer point of the material to the surge hopper will be hooded and equipped with water sprays containing a surfactant.

The sulfur pellets will be metered and conveyed by feed screws to two of three sulfur melters, from which the molten sulfur will flow by gravity to an existing sulfur pit. The sulfur melters will be completely enclosed. The capacity of the melters will be 900 long tons per day each, with one of the melters serving as an installed spare. The vent gases from the melter will contain steam produced by the vaporization of the water content of the sulfur, a small amount of H_2S and an even smaller amount of sulfur vapor. These off gases from the melters will be collected in a duct system, into which heated air will be introduced to prevent the condensation of sulfur vapor in the duct work, leading to the vapor scrubber.

The vapor scrubber system will consist of a Venturi spray tower scrubber, vapor scrubber circulation pumps, and a vapor scrubber fan. The sulfur melter vapors will be scrubbed by circulating a solution of sodium hydroxide with the hydrogen sulfide being converted to sodium sulfide. The scrubber system will be designed towards 98% removal of hydrogen sulfide and 95% removal of condensed sulfur. The circulating solution is spent when essentially all of the sodium hydroxide is converted to sodium sulfide (24 hour period). When this occurs, the nearly spent solution will be pumped to the spent caustic treater while the vapor scrubber will be replenished with fresh caustic solution.

The spent caustic will be treated on a batch basis by the slow addition of hydrogen peroxide and sulfuric acid into the circulating solution to convert the sodium sulfide to sodium sulfate and elemental sulfur.

The effluent from the spent caustic treatment and water spray drainage will be collected in the effluent surge tank. The liquid will then be pumped to the sulfur recovery filter. Sulfur will be removed and the remaining liquid consumed in the

phosphoric acid plant reactor, used as process water. The recovered sulfur will be discharged to the surge hopper.

B. Operating Times and Rates

The maximum operating times and rates of the sulfur handling and melting project will be:

- Continuous operation i.e., 8760 hours per year
- 1800 LTPD sulfur pellets received
- 150 T sulfur pellets surge capacity (surge bin)
- 1800 LTPD sulfur melted (900 LTPD/melter)
- 600,000 LTPY sulfur processed

III. Rule Applicability

The proposed modified project will emit the pollutants sulfur particulate matter (PM), and hydrogen sulfide (H_2S). The project is therefore subject to preconstruction review under Chapters 17-2 and 17-4 of the Florida Administrative Code (FAC) and Chapter 403 of the Florida Statutes.

The project will be located in an area designated as attainment for all pollutants, in Polk County, in accordance with Rule 17- 2.420, FAC. The proposed project will be a minor new source in an existing major facility. It is not subject to Prevention of Significant Deterioration (PSD) Review in accordance with Rule 17-2.500(2)(d)1, FAC.

The project will be subject to the Source Specific New Source Review Requirements in accordance with Rule 17-2.540(2), FAC, Sulfur Storage and Handling Facilities. The requirements include Preconstruction Ambient Air Quality Analysis, Preconstruction Sulfur Deposition Analysis, Postconstruction, Ambient Air Monitoring and Postconstruction Sulfur Deposition Monitoring. Emission estimates have to be made using methods specified in Rule 17-2.215, FAC.

The project shall comply with Specific Source Emission Limiting Standards, in accordance with Rule 17-2.600(11)(a), FAC, for molten sulfur handling, and Rule 17-2.600(11)(b), FAC, for solid sulfur handling. These rules specify reasonable measures to be implemented, and a 10% opacity limit for visible emissions from any emission point in the sulfur handling facility.

Only the handling of standard sulfur pellets shall be allowed at the facility in accordance with Rule 17-2.600(11), FAC.

The applicant will show compliance with emission standards using DER Method 5, Determination of Particulate Emissions from Stationary Sources (by liquid impingement), in accordance with

Rule 17-2.700(6)(a)5, FAC, for emissions from the vapor scrubber.

The applicant will conduct annual compliance tests using DER Method 9, Visual Determination of the Opacity of Emissions from Stationary Sources, in accordance with Rule 17-2.700(6)(a)9, FAC, for all sources in the sulfur facility.

The applicant will conduct compliance tests using EPA Method 15, in accordance with Rule 17-2.700(6)(b)15, FAC, Determination of H_2S in the gas stream exiting from the scrubber.

The applicant shall file reports of compliance tests in accordance with Rule 17-2.700(7), FAC.

IV. Ambient Air Quality and Deposition Analysis

A. Introduction

The Agrico Chemical Company is proposing to construct a prilled sulfur (a type of sulfur pellet) handling and melting facility at their existing South Pierce Chemical Works facility located in southern Polk County, Florida. The proposed facility will have the capacity of receiving and melting 672,000 tons of prilled sulfur per year. The construction of this facility is subject to Rule 17-2.540, FAC, Source Specific New Source Review Requirements. These requirements include:

- Preconstruction Ambient Air Quality Analysis;
- Preconstruction Sulfur Deposition Analysis, and;
- Postconstruction Monitoring.

The applicant has submitted the required preconstruction analyses. Based on these analyses, the department has reasonable assurance that the proposed sulfur handling and melting facility, as described in this report and subject to the conditions of approval proposed herein, will not cause or contribute to a violation of any ambient air quality standard or prevention of significant deterioration (PSD) increment. A discussion of the modeling methodology and required analysis follows.

B. Modeling Methodology

The EPA-approved Industrial Source Complex (ISC) models were used to predict 24-hour average and annual average particulate sulfur ambient concentrations, and monthly and annual average sulfur deposition. The ISC short-term (ISCST) model was used to estimate the 24-hour maximum concentrations using sequential, hourly meteorological data. The ISC long-term (ISCLT) model was used to predict annual average ambient concentrations, and monthly and annual average sulfur deposition using joint

frequencies of wind direction, wind speed, and atmospheric stability.

The ISC models allow for various options to be selected to make the model more accurately depict the specific geography and source characteristics of the subject facility. These options include: distinguishing between point, area, and volume type sources; urban or rural geography; building induced downwash; and gravitational settling of large particulates. These options were used by the applicant (except downwash) in completing the required modeling analyses.

The individual sources of particulate sulfur associated with the proposed project are listed in Table 1. The initial plume dispersion for the volume type sources were calculated in accordance with the guidelines contained in the ISC Users Manual. All of the sources associated with the handling of prilled sulfur were modeled as volume type sources. Only the sources associated with the proposed sulfur handling were modeled. Table 2 lists the sulfur particulate matter emission rates used in the models. The detailed calculation of these rates, for both the wet and air formed prills, can be found in the permit application.

The meteorological data used for the analysis consisted of the five-year period (1974-1978) of hourly surface weather observations from the National Weather Service station in Orlando, Florida. The upper air data for this same period were obtained from Tampa, Florida. Since five years of data were used, the highest, second-high short-term predicted concentrations were compared with the appropriate standards. For the long-term (monthly and annual) predicted concentrations and deposition, these same data were processed into joint frequency distributions of wind speed, wind direction, and atmospheric stability.

The particulate sulfur deposition rate analysis required the applicant to define the particle size distribution (see Table 3). The applicant separated the total particulate emissions into 10 size categories, each of equal mass. The gravitational settling velocity and surface reflection coefficient for each size category were calculated as specified in the ISC Users Manual. The ISCLT model used this information to estimate the maximum monthly and annual deposition. Only one year of deposition modeling was completed, based on the year in which maximum annual ambient concentrations were predicted.

A post-processing computer program, CALMPRO, was used to adjust the predicted short-term average concentrations when calm wind conditions occurred within the averaging period. The purpose of this post-processing was to adjust for the artificial persistence of wind direction in the processed hourly meteorological data set.

Table 1

Agrico South Pierce Sulfur Pellet Handling Facility
Source Data

Source	Type	Relative Location X(m)	Relative Location Y(m)	Height (m)	Initial Plume Dispersion Vertical (m)	Initial Plume Dispersion Horizontal (m)
Railcar to Hopper	Ground-based volume	68	0	3.8	3.5	2.0
Hopper to Conveyor Belt	Ground-based volume	68	0	3.8	3.5	2.0
Conveyor Belt to Surge Hopper	Elevated volume	0	0	14.6	2.3	1.4

Table 2

Agrico South Pierce Sulfur Pellet Handling Facility
Emissions Data

Source	Pellet Type(1)	Suspended Particulate (lb/hr)	Suspended Particulate (ton/yr)	Total Particulate (lb/hr)	Total Particulate (ton/yr)
Railcar to Hopper	Wet-Formed	0.00454	0.01815	0.00953	0.03812
	Air-Formed	0.0145	0.0581	0.0305	0.1220
Hopper to Conveyor Belt	Wet Formed	0.00605	0.02420	0.01271	0.05082
	Air-Formed	0.0193	0.0773	0.0405	0.1623
Conveyor Belt to Surge Hopper	Wet-Formed	0.01360	0.05445	0.02856	0.11435
	Air-Formed	0.0435	0.1741	0.0914	0.3656
Total	Wet-Formed				0.20329
	Air-Formed				0.6499

(1) Wet-Formed pellet at 2.0 percent moisture
Air-Formed pellet at 0.5 percent moisture

Table 3

Agrico South Pierce Sulfur Pellet Handling Facility
Particle Size Distribution

Class	Mass-Median Diameter (um)	Percent Weight in Class	Settling Velocity(cm/s)	Reflection Coefficient
1	2	10	0.013	0.95
2	6	10	0.11	0.90
3	11	10	0.37	0.85
4	18	10	0.98	0.77
5	26	10	2.04	0.70
6	37	10	4.14	0.64
7	52	10	8.14	0.54
8	64	10	11.7	0.45
9	110	10	29.0	0.025
10	160	10	52.0	0.0

The receptor grid used for the short-term ambient concentration analysis consisted of 288 receptors located along 36 radials spaced in ten degree intervals surrounding the proposed facility. Each radial had receptors at 200, 300, 400, 600, 800, 1000, 1500, and 2000 meters from the center point. A refined analysis was completed for the day predicted to give the highest, second-high concentration using a 100 meter resolution. The long-term analyses used the same receptor grid as the short-term analyses except that no refined runs were made.

In the above modeling analyses, two types of prilled sulfur, wet-formed and air-formed, were evaluated. Both types of sulfur will potentially be received at the facility. In general, the air-formed prill, with its lower moisture content, has greater emissions. Therefore, the predicted concentrations and deposition summarized in this report are based on the air-formed prilled sulfur.

C. Analysis of Existing Air Quality

The total ambient impact to an area is determined by adding the maximum predicted modeled impacts to the existing background concentrations. The existing background level is often estimated from air quality monitoring data located near the proposed new or modified facility. The background concentration should account for all sources not included in the dispersion modeling calculations.

The two closest particulate matter monitors to the Agrico facility are 5.7 and 7.2 kilometers away. The state site codes are 3680-011 and 3680-012, respectively. The most recent year of data (1984) showed the maximum concentrations from either of these two monitors to be 46 ug/m^3, annual mean, and 90 ug/m^3, 24-hour average.

D. PSD Increment Analysis

The Agrico South Pierce facility is located in an area designated as "attainment" for meeting the ambient air quality standards for particulate matter. As such, increased emissions of this pollutant occurring after the baseline date must not cause ambient concentrations to increase beyond specified amounts known as PSD increments. The new sulfur handling emissions at this facility are subject to this limitation.

The modeling results, taking into account only the net emissions increase from the proposed new facility, show that the highest, second-high 24-hour average predicted concentration is 2.3 ug/m^3. The maximum annual average predicted concentration is 0.33 ug/m^3. Both of these values are less than the significant impact levels defined in Chapter 17-2 of the Florida

Administrative Code. Since the predicted impacts are less than these levels, no further analysis is required.

E. Ambient Air Quality Standards Analysis

Given the existing air quality in the area of the Agrico South Pierce facility, and given the insignificant increases in predicted ambient concentrations, emissions from the proposed sulfur handling and melting operation are not expected to cause or contribute to a violation of an ambient air quality standard. The results of the modeling and the ambient air quality standards are given in Table 4.

F. Additional Air Quality Impacts

The melting of solid sulfur will result in the release of hydrogen sulfide (H_2S) gas. The vapor scrubber system proposed for H_2S removal will be designed towards a 98% removal efficiency. A conservative estimate of H_2S released from the sulfur pellets (H_2S at 250 ppm) translates to an hourly uncontrolled emission rate of 42 lb/hr, and a controlled hourly rate of 0.84 lb/hr (3.36 TPY). These emissions are well below the significant emission levels listed in 17-2.500 Table 1, FAC, of 10 TPY.

G. Particulate Sulfur Deposition Analysis

The results of the sulfur particulate deposition analysis are contained in Table 5. The maximum monthly deposition predicted was 0.079 g/m^2 (1.79 lb/hectare). The maximum annual deposition was 0.32 g/m^2 (7.05 lb/hectare). The above results are based on 100 percent air-formed prill being handled at the facility. Wet-formed prill, with its lower emissions, result in less deposition.

V. Conclusion

The Agrico Chemical Company has applied for a permit to construct a solid sulfur handling and melting facility. The new facility will be located at Agrico's South Pierce Chemical Works facility in southern Polk County, Florida. The applicant currently receives sulfur in molten form. The proposed project allows the applicant to additionally receive sulfur in a solid (prilled, pellet) form.

The applicant has submitted, along with the application, an analysis of the impacts predicted to occur on the ambient air and surrounding grounds as a result of the proposed new facility. The analysis addressed the requirements of Rule 17-2.540, FAC for an air quality impact analysis.

Based on this analysis, submitted by Agrico Chemical Company, the department has reasonable assurance that the

Table 4

Agrico South Pierce Sulfur Pellet Handling Facility
Ambient Air Quality Impacts

Pollutant	Averaging Time	Maximum Impact of Proposed Project (ug/m^3)	Significant Impact Level (ug/m^3)	Florida AAQS (ug/m^3)
Particulate Matter	24-hour	2.3 (1)	5	150
	Annual	0.33 (1)	1	60

(1) Impact of Air-Formed pellets; Wet-Formed impacts are less.

Table 5

Agrico South Pierce Sulfur Pellet Handling Facility
Deposition Analysis (1)

Pollutant	Averaging Time	Pellet Type	Maximum Deposition (g/m^2)	(lb/hectare)
Particulate Sulfur	Monthly	Wet-Formed	0.025	0.55
		Air-Formed	0.79	1.74
		Wet-Formed	0.099	2.18
	Annual	Air-Formed	0.320	7.05

(1) Based on 1974 meteorological data

construction of the new sulfur handling and melting facility, as described in this report and subject to the conditions of approval proposed herein, will not cause or contribute to a violation of an ambient air quality standard or PSD increment, or any other provision of Chapter 17-2, FAC.

STATE OF FLORIDA

DEPARTMENT OF ENVIRONMENTAL REGULATION

TWIN TOWERS OFFICE BUILDING
2600 BLAIR STONE ROAD
TALLAHASSEE, FLORIDA 32301-8241

BOB GRAHAM
GOVERNOR

VICTORIA J. TSCHINKEL
SECRETARY

PERMITTEE:
Agrico Chemical Company
P. O. Box 1969
Bartow, Florida 33830

Permit Number:AC 53-111196
Expiration Date: April 1, 1988
County: Polk
Latitude/Longitude: 27° 45' 45"N/ 81° 56' 28"W
Project: Sulfur Pellet Handling and Melting Facility

This permit is issued under the provisions of Chapter 403, Florida Statutes, and Florida Administrative Code Rule(s) 17-2 and 17-4. The above named permittee is hereby authorized to perform the work or operate the facility shown on the application and approved drawings, plans, and other documents attached hereto or on file with the department and made a part hereof and specifically described as follows:

For the construction of a sulfur pellets handling and melting facility consisting of a receiving underground hopper, conveyor belts, 150 ton surge bin, screw conveyors, three 900 tons per day sulfur static melters, a scrubber system, and a water spray system.

Construction shall be in accordance with the attached permit application unless otherwise stated in the General and Specific Conditions herein.

Attachments are as follows:

1. Agrico's application package dated October 1, 1985.

2. DER's letter dated October 31, 1985.

3. Agrico's response dated November 27, 1985.

PERMITTEE:
Agrico Chemical Company

Permit Number: AC 53-111196
Expiration Date: April 1, 1988

GENERAL CONDITIONS:

1. The terms, conditions, requirements, limitations, and restrictions set forth herein are "Permit Conditions" and as such are binding upon the permittee and enforceable pursuant to the authority of Sections 403.161, 403.727, or 403.859 through 403.861, Florida Statutes. The permittee is hereby placed on notice that the department will review this permit periodically and may initiate enforcement action for any violation of the "Permit Conditions" by the permittee, its agents, employees, servants or representatives.

2. This permit is valid only for the specific processes and operations applied for and indicated in the approved drawings or exhibits. Any unauthorized deviation from the approved drawings, exhibits, specifications, or conditions of this permit may constitute grounds for revocation and enforcement action by the department.

3. As provided in Subsections 403.087(6) and 403.722(5), Florida Statutes, the issuance of this permit does not convey any vested rights or any exclusive privileges. Nor does it authorize any injury to public or private property or any invasion of personal rights, nor any infringement of federal, state or local laws or regulations. This permit does not constitute a waiver of or approval of any other department permit that may be required for other aspects of the total project which are not addressed in the permit.

4. This permit conveys no title to land or water, does not constitute state recognition or acknowledgement of title, and does not constitute authority for the use of submerged lands unless herein provided and the necessary title or leasehold interests have been obtained from the state. Only the Trustees of the Internal Improvement Trust Fund may express state opinion as to title.

5. This permit does not relieve the permittee from liability for harm or injury to human health or welfare, animal, plant or aquatic life or property and penalties therefore caused by the construction or operation of this permitted source, nor does it allow the permittee to cause pollution in contravention of Florida Statutes and department rules, unless specifically authorized by an order from the department.

GENERAL CONDITIONS:

6. The permittee shall at all times properly operate and maintain the facility and systems of treatment and control (and related appurtenances) that are installed or used by the permittee to achieve compliance with the conditions of this permit, as required by department rules. This provision includes the operation of backup or auxiliary facilities or similar systems when necessary to achieve compliance with the conditions of the permit and when required by department rules.

7. The permittee, by accepting this permit, specifically agrees to allow authorized department personnel, upon presentation of credentials or other documents as may be required by law, access to the premises, at reasonable times, where the permitted activity is located or conducted for the purpose of:

a. Having access to and copying any records that must be kept under the conditions of the permit;

b. Inspecting the facility, equipment, practices, or operations regulated or required under this permit; and

c. Sampling or monitoring any substances or parameters at any location reasonably necessary to assure compliance with this permit or department rules.

Reasonable time may depend on the nature of the concern being investigated.

8. If, for any reason, the permittee does not comply with or will be unable to comply with any condition or limitation specified in this permit, the permittee shall immediately notify and provide the department with the following information:

a. a description of and cause of non-compliance; and

b. the period of noncompliance, including exact dates and times; or, if not corrected, the anticipated time the noncompliance is expected to continue, and steps being taken to reduce, eliminate, and prevent recurrence of the noncompliance.

GENERAL CONDITIONS:

The permittee shall be responsible for any and all damages which may result and may be subject to enforcement action by the department for penalties or revocation of this permit.

9. In accepting this permit, the permittee understands and agrees that all records, notes, monitoring data and other information relating to the construction or operation of this permitted source, which are submitted to the department, may be used by the department as evidence in any enforcement case arising under the Florida Statutes or department rules, except where such use is proscribed by Sections 403.73 and 403.111, Florida Statutes.

10. The permittee agrees to comply with changes in department rules and Florida Statutes after a reasonable time for compliance, provided however, the permittee does not waive any other rights granted by Florida Statutes or department rules.

11. This permit is transferable only upon department approval in accordance with Florida Administrative Code Rules 17-4.12 and 17-30.30, as applicable. The permittee shall be liable for any non-compliance of the permitted activity until the transfer is approved by the department.

12. This permit is required to be kept at the work site of the permitted activity during the entire period of construction or operation.

13. This permit also constitutes:

( ) Determination of Best Available Control Technology (BACT)
( ) Determination of Prevention of Significant Deterioration (PSD)
( ) Compliance with New Source Performance Standards.

14. The permittee shall comply with the following monitoring and record keeping requirements:

a. Upon request, the permittee shall furnish all records and plans required under department rules. The retention period for all records will be extended automatically, unless otherwise stipulated by the department, during the course of any unresolved enforcement action.

GENERAL CONDITIONS:

b. The permittee shall retain at the facility or other location designated by this permit records of all monitoring information (including all calibration and maintenance records and all original strip chart recordings for continuous monitoring instrumentation), copies of all reports required by this permit, and records of all data used to complete the application for this permit. The time period of retention shall be at least three years from the date of the sample, measurement, report or application unless otherwise specified by department rule.

c. Records of monitoring information shall include:

- the date, exact place, and time of sampling or measurements;
- the person responsible for performing the sampling or measurements;
- the date(s) analyses were performed;
- the person responsible for performing the analyses;
- the analytical techniques or methods used; and
- the results of such analyses.

15. When requested by the department, the permittee shall within a reasonable time furnish any information required by law which is needed to determine compliance with the permit. If the permittee becomes aware that relevant facts were not submitted or were incorrect in the permit application or in any report to the department, such facts or information shall be submitted or corrected promptly.

SPECIFIC CONDITIONS:

1. The sulfur pellets handling and melting facility may operate continuously i.e., 8760 hours per year.

2. The maximum sulfur handling and melting rates shall not exceed 1800 long tons per day (LTPD), or 600,000 LTPY.

PERMITTEE:
Agrico Chemical Company

Permit Number: AC 53-111196
Expiration Date: April 1, 1988

SPECIFIC CONDITIONS:

3. The emissions of sulfur particulate (PM) and hydrogen sulfide (H_2S) from the sulfur facility shall not exceed 1 ton per year (TPY) for PM, and 5 TPY for H_2S.

Summary of Emissions

Source	Emissions lb/hr	Emissions TPY	Pollutant
a) Unloading hopper	0.03	0.12	PM
b) Hopper-conveyor belt transfer	0.04	0.16	PM
c) Belt-surge bin transfer	0.09	0.37	PM
d) Vapor scrubber (i)	0.02	0.08	PM
(ii)	0.84	3.36	H_2S

4. Visible emissions from any source in the sulfur facility shall not exceed 10% opacity, as determined by DER Method 9, Visual Determination of the Opacity of Emissions from Stationary Sources.

5. Initial compliance tests shall be conducted using:

a) DER Method 5, Determination of Particulate Emissions from Stationary Sources (by liquid impingement), for PM emissions from the vapor scrubber.

b) DER Method 9, for all sources in the sulfur facility.

c) EPA Method 15, Determination of H_2S, in the gas stream from the vapor scrubber.

6. Annual compliance tests shall be conducted for all sources in the sulfur facility using DER Method 9, unless other tests are also deemed necessary by the results obtained in the initial compliance tests.

7. All applicable emission limiting precautions and procedures specified in this permit application, and in Rule 17-2.600(11), FAC, shall be followed at all times.

8. All compliance tests shall be conducted at 90-100% of the permitted equipment capacities.

9. A 15 day prior notice shall be given to DER's Southwest District office, of the compliance testing date(s).

SPECIFIC CONDITIONS:

10. The permittee shall submit a Sulfur Deposition and an Ambient Air Monitoring Plan to the Central Air Permitting (CAPS) office for approval, within 90 days of issuance of this permit. These monitoring plans shall be implemented for a minimum of 2 years from the date of issuance of the initial operating permit. Monitoring may be required beyond the initial 2 years should the department deem it necessary at the end of the initial monitoring period.

11. The following shall be submitted for approval to DER's District office within 45 days of completion of compliance tests, and a minimum of 90 days before the expiration date of this permit (copy to CAPS):

a) Compliance test results of DER Method 5, DER Method 9 and EPA Method 15.

b) Initial sulfur deposition monitoring report conducted according to Rule 17-2.753(2), FAC (DER Reference Method for Monitoring the Deposition of Sulfur Particulate).

12. The construction shall reasonably conform to the plans and schedule submitted in the application. If the permittee is unable to complete construction on schedule, the Department must be notified in writing, 60 days prior to the expiration of the construction permit and submit a new schedule and request for an extension of the construction permit. (Rule 17-4.09, FAC)

13. To obtain a permit to operate, the permittee must demonstrate compliance with the conditions of the construction permit and submit a complete application for an operating permit, including the application fee, along with compliance test results and Certificate of Completion, to DER's District office 90 days prior to the expiration date of the construction permit. The permittee may continue to operate in compliance with all terms of the construction permit until its expiration date. Operation beyond the construction permit expiration date requires a valid permit to operate. (Rules 17-4.22 and 17-4.23, FAC)

14. If the construction permit expires prior to the permittee requesting an extension or obtaining a permit to operate, then all activities at the project must cease and the permittee must apply for a new permit to construct which can take up to 90 days to process a complete application. (Rule 17-4.10, FAC)

PERMITTEE:
Agrico Chemical Company

Permit Number: AC 53-111196
Expiration Date: April 1, 1988

SPECIFIC CONDITIONS:

15. Upon obtaining an operating permit the permittee will be required to submit annual reports, unless otherwise requested by DER, on the actual operation and emissions of the sources to the DER's District office.

16. Any change in the method of operation, equipment, or operating hours shall be submitted for approval to the DER's District office.

17. This permit shall replace all previous permits issued to the permittee for the construction of the sulfur pellet handling and melting facility.

Issued this_____day of_____, 19__

STATE OF FLORIDA DEPARTMENT OF ENVIRONMENTAL REGULATION

_____
VICTORIA J. TSCHINKEL, Secretary

____ pages attached.