ENVIRONMENTAL PROTECTION COMMISSION
OF
HILLSBOROUGH COUNTY

CONVERSATION RECORD

DATE 6/6/00 TIME 2:30 p.m.

SUBJECT BBTC response to the EPC's Incompletion Letter

MR/MS Stephen Smallwood, P.E. TELEPHONE NO.

REPRESENTING Freeport McMoRan (Air Quality Services)

TELEPHONED [ ] WAS CALLED [ ] SCHEDULED/UNSCHEDULED MEETING [X]

OTHER INDIVIDUALS INVOLVED IN CONVERSATION/MEETING Dennis Stotts, Jeff Stewart, Scott McCann, Larry Curtin, Ed Newberry, Alice Harman

MEETING/CONVERSATION The meeting was called by Steve Smallwood in order that he might discuss Big Bend Transfer Co.'s (BBTC) response to the Environmental Protection Commission's (EPC) February 10, 2000 Incompletion Letter. Dennis Stotts, stated that he did not believe that the emission factors used by BBTC for solid sulfur emission showed high enough emissions. He felt that there were better emission factors that can be used. Steve Smallwood stated that the AP-42 Factors are for outdoor storage piles. The AP-42 Factors take into account wind as a variable. Mr. Smallwood stated that there is no wind in BBTC Sulfur Storage Buildings or in the enclosed conveyors. Mr. Smallwood believed that the Lundgren equations is a better method. Dennis Stotts wants BBTC to calculate the emissions using the Lungren equation. Mr. Stotts states that the melters are very different from molten sulfur storage tanks. He stated that he did not know what the emissions were but that he believed that they were very different from molten sulfur storage tank emissions. Mr. Stotts wants BBTC to calculate the emission from road dust to be calculated using the AP-42 industrial road emission factor of 1.0 gr/m2.

Mr. Stotts believes BBTC should have modeling protocol approved by DEP as requested in the last incompletion letter.

Mr. Smallwood stated that sulfur pellets are sometimes stored in the same containers as other types of sulfur such as slate. He stated that some mixing of the different types of sulfur can occur.

Mr. Stotts stated that BBTC did not respond to the question regarding the collection efficiency of the scrubber.

SIGNATURE Noel Morera

TITLE Permit Engineer

IMC Emission Trading Co.

Sign in Sheet meeting 6-6-2000 2:30 pm

Name	Organization
Noel Morera	EPCHC
Dennis Stotts	Earl, Blake, Kavanaugh + Stotts for Faegre & Benson LLP
Stephen Smallwood	Air Quality Services
Jeff Stewart	IMC-(BBTC) Agrico
Scott McCann	Golder Associates (BBTC)
Larry Curtis	Holland + Knight, LLP BBTC
Ed Newberg	BBTC Project Coordinator
Alice H. Harman	EPCHC.

ENVIRONMENTAL PROTECTION COMMISSION
OF
HILLSBOROUGH COUNTY

CONVERSATION RECORD

DATE 6/1/00 TIME 1:34 p.m. SUBJECT meeting

MR/MS Jeffrey M. Stewart TELEPHONE NO. (813) 634-3922 x 3616

REPRESENTING IMC-Agrico Big Bend Terminal

TELEPHONED [ ] WAS CALLED [X] SCHEDULED/UNSCHEDULED MEETING [ ]

OTHER INDIVIDUALS INVOLVED IN CONVERSATION/MEETING

MEETING/CONVERSATION SUMMARY I called Jeffrey Stewart and let him know that we were meeting with Steve Smallwood and an attorney from Freeport and that the meeting would be held on Tuesday, June 6 at 2:30 p.m. The meeting is intended to discuss BBTC response to our incompletion letter.

CONTINUE ON BACK

SIGNATURE Noel Morera

TITLE Permit Engineer

ADMINISTRATIVE OFFICES, LEGAL &
WATER MANAGEMENT DIVISION
1900 - 9TH AVENUE
TAMPA, FLORIDA 33605
TELEPHONE (813) 272-5960
FAX (813) 272-5157

AIR MANAGEMENT DIVISION
TELEPHONE (813) 272-5530

WASTE MANAGEMENT DIVISION
TELEPHONE (813) 272-5788

WETLANDS MANAGEMENT DIVISION
TELEPHONE (813) 272-7104

June 9, 2000

CERTIFIED MAIL #7099 3400 0004 3915 3285

Hermann H. Wittje
Authorized Representative
IMC Big Bend
2100 Sanderon Road
Northbrook, IL 60062-6146

Re: Hillsborough County - AP
DEP File No. 0571244-001-AC

Dear Mr. Wittje:

Please be advised that the Environmental Protection Commission of Hillsborough County (EPC) staff, as delegated by the Florida Department of Environmental Protection (DEP), has completed their initial review of the additional information received on April 12, 2000 and May 10, 2000 and found it to be incomplete. In order to complete the review process the following additional information is being requested pursuant to Chapter 62-4.055, F.A.C. The following questions are regarding your response to our incompletion letter received on April 12, and May 10, 2000:

1. Response #3 - In your response, you stated that lime will be hard piped to the tube conveyors feeding the melters, and that there will be no PM emissions. However, in your response to EPC Comment #52, you state the emissions will be negligible. Please explain. Is the tube conveyor under negative pressured and is it sealed? Our experience shows that, if the tube conveyor is not sealed or under negative pressure, there will be some emissions. Please explain. If there are emissions, please revise your application accordingly, including Table I-5 (see previous EPC Comment #48).

2. Response #13 - It appears that the MSDS is incomplete. Under Hazardous ingredients it cites "trade secrets". Please state whether there are Hazardous Air Pollutants in this product. Please provide a revised MSD Sheet for this product, along with any other MSD sheet for the products you plan to use.

3. Response #3 & #16 - You state that there will be no emission from the unloading of lime and diatomaceous earth silos. Please provide a detailed diagram of the diatomaceous earth and transfer operation into the melters and a diagram of the lime transfer to the tube conveyor. It is our belief that there may be some emissions from these source.

4. Response #17 & #18 - While we agree that the emissions are a function of grain loading and exhaust flow rate, we disagree with your statement that is not a function of the silo loading rate. It is our belief that the emissions are effected by the loading rate, and it is our intent to include a maximum transfer rate in the permit to limit the potential to emit.

5. Response #23 -

   A) You state that the maximum sulfur transfer rate into the storage tank is 288 ton/hr. (600 gpm), which is equivalent to 80 cfm. You also state that a design factor was applied to obtain an evacuation rate of 250 cfm from the tanks. Please explain how the design rate was obtained and submit calculations supporting the evacuation rate.

   B) You state the maximum truck loading rate is 576 tons/hr (1200 gpm) which is equivalent to 160 cfm. You also state that a design factor was applied to obtain an evacuation rate of 350 cfm from the truck loading station. Please explain how the design rate was obtained and submit calculations supporting the evacuation rate.

6. Response 24 - IMC-Agrico has agreed to lease a portion of its Big Bend Terminal to Big Bend Transfer Company, LLC (BBTC) which is controlled by IMC-Big Bend, Inc., Cargill, Inc. and CF Industries. You further state that IMC-Agrico Co. is not a participant in BBTC, however, under Rule 62-210.200(126), F.A.C. a facility is defined as all of the emission units which are located on one or more contiguous or adjacent properties and which are under control of the same person (or persons under common control). Please provide a list of corporate officers, including General Managers and Plant Managers. In addition, please include an organizational charts for IMC-Agrico Company and IMC-Big Bend, Inc. in order for the EPC staff to determine if all the emissions units are under the control of the same person or person under common control. Please provide documentation to demonstrate that Douglas A. Pertz, President and Chief Operating officer of IMC Global, Inc. is authorized to designate Hermann H. Wittje

as an "authorized representative" of Big Bend Transfer Co., LLC., and clarify that Big Bend Transfer Co., LLC with IMC Global, Inc. as its sole member, is not the alter ego of IMC-Agrico Company.

7. Response #29 - The 5 lbs/hr you use in the Part B-Report, Table 307 has not been approved by the EPC, therefore, the wording should be resubmitted with the current allowables of 11.27 lbs/hr. In addition, the modeling should be resubmitted using the 11.27 lb/hr. currently allowed IMC-Agrico.

8. Response #37 - In your response you stated that the results of the SUCID Stress Level II test preformed on a composite sample of sulfur will be submitted to the EPC for each shipment of solid sulfur product destined for BBTC Terminal. However, 62-4.070(1) and (2) F.A.C. state that a permit shall be issued only if the applicant provides reasonable assurance that the construction complies with all applicable rules. In order to continue processing the application, we are, therefore, requesting that the information be submitted on all the potential source of prilled sulfur.

9. Response #38 - You state that a bobcat will be required to move solid sulfur to the bucket reclaimer when the supply is low in the ship's hold. You also state that, when the sulfur load is low in the shiphold, the bucket reclaimer will offset any additional emissions from the bobcat and, there will be standing water in the shiphold's that will minimize particulate matter emissions. However, we do not agree that the bucket reclaimer will offset any particulate emissions from the bobcat and that there will always be standing water in the shiphold. Since the material will be double handled by the bobcat and the reclaimer, and the emissions are a function of the tons of material handled, we are, therefore, requesting that you provide emission estimates for the bobcat, and revise the application accordingly.

10. Response #41 - Your response to our comment #41 references your response to #38. However, you do not address whether a bobcat or some other type of equipment will be used to maintain the storage pile. Please respond.

11. Response #43 and #44 - In the revised Table I-5, you list a scrubber control efficiency of 95% for particulate matter in the size range between 0-2.5 microns. However, Appendix H of the application sites a 95% collection efficiency for particulates 3 microns or larger at a pressure drop of 5 inches. Please explain how you plan to achieve 95% control efficiency when the pressure drop required for particulates <3 microns is between 10-30 inches of water.

12. Response #49 - The design information we requested was not submitted. Rule 62-4.070(1) and (2), F.A.C. state that a permit be issued only if the applicant provides reasonable assurance that the construction complies with all applicable rules. In order to continue processing the application, we are, therefore, requesting that the information be submitted on all the potential sources of prilled sulfur.

13. Response #63-66 Air Quality impact analysis - The background concentrations Table 8 indicates that PM_{10} monitoring data for two of the monitors, Eishenhower and Gardineier Park, does not exist for 1998. However, this information is available. Please revise your modeling and include the information.

14. We have also received comments from Cleve Holiday of the FDEP and a third party interested in the application and have included them as an attachment to our comments. Please respond.

"NOTICE! Pursuant to the provisions of Chapter 62-4.070, F.A.C. and Section 120.600 F.S., if the EPC does not receive a response to this request for information within 90 days of the date of this letter, the EPC will issue a final order denying your application. You need to respond within 30 days after you receive this letter, responding to as many of the information requests as possible and indicating when a response to any unanswered question will be submitted. If the response will require longer than 90 days to develop, an application for new construction should be submitted when completed information is available. Or for operating permits, you should develop a specific time table for the submission of the requested information for EPC review and consideration. Failure to comply with a time table accepted by the EPC will be grounds for the EPC to issue a Final Order of Denial for lack of timely response. A denial for lack of information or response will be unbiased as to the merits of the application. The applicant can reapply as soon as the requested information is available."

This staff assessment is preliminary and is designed to assist in the review of the application prior to final agency action. The comments provided herein are not the final position of the EPC and may be subject to revision pursuant to additional information and further review.

If you have any questions, please feel free to contact Noel Morera or either of us at (813) 272-5530.

Sincerely,

Alice H. Harman, P.E.
Chief, Air Permitting Section

Sincerely,

Sterlin K. Woodard, P.E.
Environmental Manager, Compliance Department

cc: Cleve Holliday - DEP
Jim McDonald - DEP
Kim Swark
Lynne Matson
Jerry D'Aquin

DEPARTMENT OF ENVIRONMENTAL PROTECTION COMMENTS

1. For purposes of an ambient PM10 background concentration for use in the AAQS part of the modeling analysis, a 24-hour average concentration should be used for the 24-hour PM10 AAQS analysis instead of an annual average. Cleve Holliday from DEP suggested the value of 35 ug/m3 for use in this analysis. This value is the 2nd highest 1999 24-hour concentration taken from the PM10 monitor located at Eisenhower Junior High School.

2. The applicant should address the impact on the PM10 Class II increments and the PM10 AAQS of quantifiable fugitive PM10 emissions due to vehicle traffic associated with this project.

SUMMARY LIST OF QUESTIONS ADDRESSING
BBTC'S RESPONSES TO FEBRUARY 10, 2000
REQUEST FOR ADDITIONAL INFORMATION

I. THE EMISSIONS FOR THE PROPOSED FACILITY REMAIN SUBSTANTIALLY UNDERESTIMATED

A. BBTC Used an Inapplicable Emission Factor for Estimating PM10 Emissions from Solid Sulfur Unloading, Storage and Handling.

Questions Needed to Clarify Remaining Issues

(1) Recalculate DTP PM10 Emissions. Account for all drop transfer points that would be part of the proposed sulfur terminal, and recalculate the solid sulfur emissions from all solid sulfur drop transfer points, using the sulfur specific emission factor equation as directed in EPC's February 10, 2000 request for additional information, as well as the sulfur-specific Lundgren drop transfer PM emissions factor equation, as presented in Dr. Lundgren's August 1984 report entitled "REGARDING SULFUR RULEMAKING, Summary Report on the Dust Emission Factor For Wet Prilled Sulfur." Calculate the probable maximum PM_{10} emissions from all DTP's for the maximum 24-hour case and the maximum annual average case.

If the BBTC thinks the "discharge rate" adjustment is appropriate, provide technical documentation that justifies the need for and the appropiate application of a materials discharge rate or dumping device capacity adjustment term. Describe the physics that explains the need for applying a "dumping device capacity" or "materials discharge rate" adjustment factor to the Lundgren dust measurement chamber sulfur particulate matter emissions data. Provide the laboratory studies and data referred to on page 47 of Dr. Lundgren's August 10, 1984 Emission Factor Report and any other relevant documentation on the basis or appropriate use of this type of adjustment factor.

If the BBTC thinks another DTP PM EF equation represents the best available data, provide the type of PM emission estimates requested above for the DTP PM EF equation the BBTC thinks should be used, in addition to the calculations requested above.

(2) After calculating the estimated emissions, for DTPs that are enclosed and vented through a particulate matter control device (water sprays, scrubber, etc.) prior to being emitted to the outside air, provide, for each DTP emissions point, a documented estimate of the capture efficiency (percent of the uncontrolled PM emissions, weight basis, that would enter the control device) and the control device collection efficiency (percent of the captured PM emissions, weight basis, that would be removed from the exit gas stream by the control device).

(3) Provide a copy of the published report(s) that document the need to used a materials discharge rate or device dumping capacity adjustment term as part of the Lundgren DTP PM emissions factor equation or any other DTP PM emissions factor equation.

Does this type adjustment factor apply only to batch drop operations? If not, how should it be applied to adjust the Lundgren test chamber data to a continuous drop transfer emissions factor?

(4) Why should the HCEPC Air Division not conclude that the sulfur specific emission factor included in FDEP's February 1984 Sulfur Report or the August 1984 sulfur specific Lundgren PM emissions factor equation represents the best available data for the purpose of estimating the PM10 emissions from the drop transfer points (DTP) that would be part of the BBTC's solid sulfur storage & handling facility? If the BBTC thinks another DTP PM EF equation represents the best available data, provide a detailed discussion of the basis of that conclusion.

B. BBTC Underestimated PM10 Emissions from Solid Sulfur Melting.

Questions

(1) Calculate the quantify of steam generated in the melter. Provide data on moisture levels in commercial shipments of bulk sulfur to establish the sulfur moisture level as received. Account for the number of water spray devices used to control dust and water flow rates to be used in each device. Compute the moisture level in the bulk sulfur to be stored in the proposed sulfur storage building.

(2) Describe the process controls to maintain the sulfur melter scrubber vent stack temperature at 97° F as stated in Table 3-6 of the application. If BBTC intends to add processed water to the scrubber to control the scrubber temperature as mentioned in the response to Item 49, provide an engineering estimate of the water rate required. Account for the condensation of the steam generated in the melter.

(3) Provide an engineering estimate of the quantity of wastewater generated in the melter scrubber and describe the means for disposing of the wastewater. Provide an estimate of the sulfur particulate in the wastewater and any chemicals added to control scrubber pH. If BBTC intends to truck the water to a disposal site, estimate the quantity of trucks required to dispose of the wastewater and the emissions generated by the truck traffic. If BBTC intends to dispose of the wastewater on site, provide a plan for disposing of the wastewater and the status of the water disposal permit.

(4) Recalculate the PM10 emissions from the melter scrubber taking into account the additional ventilation produced by the quantity of steam generated in the melter.

C. BBTC Substantially Underestimates PM10 Emissions from Road Dust Reentrained by On-Site Truck Traffic

Question

(1) Recalculate the estimated amount of the fugitive PM30 and PM10 emissions that will occur as the result of the proposed facility's onsite truck traffic, using the estimating procedures in AP-42, Section 13.2, including an appropriate silt loading value of at least 1 g/m^2 for industrial facilities.

II. THE AIR QUALITY IMPACT ANALYSIS MODELING DOES NOT ACCOUNT FOR ALL POTENTIAL EMISSIONS, CONTAINS FLAWED ASSUMPTIONS, AND HAS NOT INCORPORATED FDEP'S EMISSIONS INVENTORY

Questions

(1) Using the estimated emissions derived from the sulfur-specific emission factor equations discussed above, determine the amount of the PM10 PSD Increments and the amount of PM10 ambient air quality standards that will be consumed by the proposed project.

(2) Prior to redoing the ambient air quality modeling, submit a proposed air modeling protocol to the permitting office, and obtain FDEP approval of the protocol.

(3) Use the highest of the fourth highest predicted 24 hour concentration in each rolling 3 year period as the concentration to compare with the 24 hour PM10 National Ambient Air Quality Standard since this is the specific concentration used to determine compliance with this standard (40 CFR Part 50, Appendix K).

(4) Follow the mandate in the U.S. EPA Guideline on Air Quality Models (40 CFR Part 51, Appendix W, U.S. EPA, Guideline on Air Quality Models, Section 8.2.2, p. 409) to include in the air quality modeling receptors where the highest predicted PM10 concentrations are expected to occur.

(5) Include in the air quality modeling analysis the reasonable estimates of PM10 emissions from reentrained dust from the truck traffic into and out of the proposed facility in a manner consistent with EPA guidance for industrial roads.

(6) Rather than using the lowest measured annual average PM10 concentration in the vicinity of the proposed facility as the background 24 hour PM10 concentration to be added to the applicable highest predictions, follow the Guideline on Air Quality Models which mandates the use of the average concentration occurring under the same meteorology as the applicable highest predictions (Ibid. Section 9.2.2, p. 415), under which the applicable highest measured 24 hour concentrations occur when the sources being modeled are not impacting the monitoring site.

(7) Use in your air quality modeling the comprehensive Florida DEP particulate matter emissions inventory being prepared for your use in the air quality analysis, rather than incomplete inventory apparently utilized.

III. ADDITIONAL ISSUES

A. Documentation that Shipments Meet Definition of Standard Sulfur Pellet

Questions

(1) In response to Item 5 of the February 10, 2000 Request for Additional Information, BBTC proposes testing each shipment of solid sulfur, utilizing the two SUDIC test methods prescribed in the definition of standard sulfur pellets found at Rule 62-212.200 (274), F.A.C. How does BBTC propose to insure compliance with the third element of the definition (i.e., no non-spherical forms)? What would BBTC do with any shipments of solid sulfur containing non-spherical forms of sulfur?

(2) Will BBTC certify that only pretested specific brands of manufactured solid sulfur will be imported to the proposed facility?

B. Emissions Contol Efficiencies

Questions

(1) What is the basis for the 0.033 grains/dscf exhaust loading? What scrubber inlet grain loading is it based on? How did you calculate the scrubber inlet grain loading?

(2) Provide design calculations for the scrubber to be used that demonstrate that the scrubber design can handle the high heat loads so that the scrubber water will not boil, that the fan design can handle the pressure drop needed to maintain the scrubber's design collection efficiency, and that adequate scrubber water blow down has been provided.

(3) Provide documentation to support the fractional particulate matter collection efficiencies for the types of control devices or measures to be used (enclosures, water sprays at transfer points, where the wet scrubber for the melter, etc.), as those efficiencies relate to control of solid sulfur particulate.

(4) Use documented collection efficiencies for the 0-10 micron range of the intervals listed in Tables I-1 through 6, for the scrubber to be used, to calculate the probable controlled emission rate of PM10 emissions from the scrubber stack.

(5) Based on the revised particulate emissions estimates and the appropriate documented fractional collection efficiencies for the particle-size intervals listed in Table I-1 through 6, recalculate the controlled emission rate for each particle-size interval for each source of sulfur

particulate emission (point and fugitive, annual and 24-hour maximum), and then recalculate the maximum 24-hour, monthly, and annual deposition rates based on this updated data.

C. Dust Pickups

Question

Is the dust pickup point for each solid sulfur transfer point vented though its own stack? What are the stack exit diameters, heights, and actual flow rates? Are any of the transfer points vented through the stack on the solid sulfur storage building? Is so, which ones?

D. Emissions From the Stacker/Reclaimer

Question

Have the PM emissions from the constant operation of the stacker/reclaimer been accounted for in the application?

ADMINISTRATIVE OFFICES, LEGAL & WATER MANAGEMENT DIVISION
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WASTE MANAGEMENT DIVISION
TELEPHONE (813) 272-5788

WETLANDS MANAGEMENT DIVISION
TELEPHONE (813) 272-7104

ENVIRONMENTAL PROTECTION COMMISSION
of Hillsborough County

FAX Transmittal Sheet

DATE: 6/12/00

TO: Jeff Stewart - IMC

FAX Phone: 863-428-2619 **Voice Phone:** _____

TOTAL NUMBER OF PAGES INCLUDING THIS COVER PAGE: 12

EPC FAX Transmission Line: (813) 272-5605
For retransmission or any FAX problems, call: (813) 272-5530

FROM: Alice H. Harman

(Circle applicable section below)

Air Division

-Compliance -Enforcement/Analysis

-Monitoring/Toxics (-Permitting)

SPECIAL INSTRUCTIONS: _____

6/12 completed

ADMINISTRATIVE OFFICES, LEGAL &
WATER MANAGEMENT DIVISION
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WETLANDS MANAGEMENT DIVISION
TELEPHONE (813) 272-7104

M E M O R A N D U M

Date: June 7, 2000

To: Noel Morera

From: Leroy Shelton LS

Subject: **Big Bend Transfer Company - Modeling**

I have reviewed the subject modeling. I am not an expert on modeling, nor do I have the time and resources to confirm that all the details of the modeling (i.e., facilities included or not included, emissions, etc.) have been modeled correctly. However, the following comments are offered:

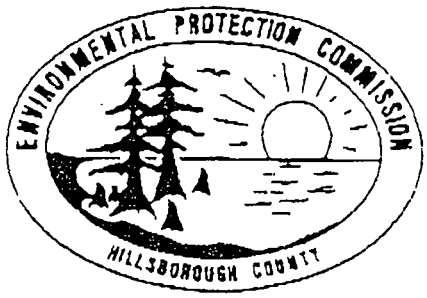
The ISC3 model used is an approved EPA model.

The CALPUFF model used has been proposed by EPA for approval in the Federal Register.

The significant impact levels, AAQS levels, and PSD levels are consistent with Florida regulations. If the correct facilities and emissions were used, the modeled results do appear to be less than the allowable AAQS and PSD levels.

The only error I noted, which will probably not affect the results significantly, is in the background concentrations. Table 8 indicates that PM_{10} monitoring data for two of the monitors, Eisenhower and Gardinier Park, does not exist for 1998. That is not true. The information does exist.

If you have any questions, please see me.



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WETLANDS MANAGEMENT DIVISION
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ENVIRONMENTAL PROTECTION COMMISSSION
of Hillsborough County

FAX Transmittal Sheet

DATE: 6/8/00

TO: Noel Morris

FAX Number: 272-5605 VOICE Number: _____

TOTAL NUMBER OF PAGES INCLUDING COVER PAGE: _____

EPC FAX Number: (813)272-5157 EPC VOICE Number: (813)272-5960

FROM: Sara Stamoulos, Esq.

Special
Instructions: _____

Noel Morera

OK, so you faxed it instead. Now that I know the format of your questions, I suggest the following:

6. Response 24 - Section 62-210.200 (126) FAC defines "facility" as all of the emission units which are located on one or more contiguous or adjacent properties and which are under control of the same person (or persons under common control). Since IMC-Agrico is leasing a portion of its Big Bend Terminal to Big Bend Transfer Company, LLC controlled by IMC-Big Bend, Inc., Cargill, Inc. and CF Industries, and since Douglas Pertz, of IMC Global, Inc. authorized Mr. Hermann Wittje by letter to act as representative for Big Bend Transfer Co., LLC., confusion continues. Please provide documentation to demonstrate that Douglas A. Pertz, President and Chief Operating Officer of IMC Global, Inc. is authorized to designate Hermann H. Wittje as an "authorized representative" of Big Bend Transfer Co., LLC., and provide lists of corporate officers, including General Managers and Plant Managers, and organizational charts for IMC-Agrico Company and IMC Big Bend, Inc. to demonstrate whether they are under the control of the same person or person under common control.

From: SARA FOTOPULOS
To: Morera
Date: Thursday, June 8, 2000 1:13 pm
Subject: IMC

I didn't get anything from you.

We have a letter from Douglas Pertz, IMC Global, Inc., authorizing Mr. Hermann Wittje to act as representative for Big Bend Transfer Co., LLC. The question is "representative of whom?" Certainly IMC Global, Inc., but how do we know that IMC Global, Inc. is authorized to speak for Big Bend Transfer Co., LLC?

The letter states that IMC Global Inc. is the sole member of Big Bend Transfer Co., LLC. If that is so (and we don't have any independent knowledge of that) then the letter is sufficient.

One question I would include in the request for additional information is:

Please provide documentation to demonstrate that Douglas A. Pertz, President and Chief Operating Officer of IMC Global, Inc. is authorized to designate Hermann H. Wittje as an "authorized representative" of Big Bend Transfer Co., LLC., and clarify that Big Bend transfer Co., LLC, with IMC Global, Inc. as its sole member, is not the alter ego of IMC-Agrico Company.

EARL, BLANK, KAVANAUGH & STOTTS
PROFESSIONAL ASSOCIATION
ATTORNEYS AT LAW
ONE BISCAYNE TOWER, SUITE 3760
TWO SOUTH BISCAYNE BOULEVARD
MIAMI, FLORIDA 33131
(305) 358-3000
FAX (305) 358-5079
EMAIL: ebks@aol.com

June 6, 2000

Mr. Noel Morera, P.E.
Air Permitting Section
Hillsborough County Environmental
Protection Commission
1410 N. 21st Street
Tampa, FL 33605

RE: Big Bend Transfer Company Solid Sulphur Handling
Air Pollution Construction Permit Application

Dear Mr. Morera:

This letter is written on behalf of our clients, Freeport-McMoRan Sulphur, L.L.C., and Freeport-McMoRan Development Company, L.L.C ("Freeport-McMoRan"). As you may know, Freeport-McMoRan has been in the sulphur business since 1912 and is more experienced in handling all forms of sulphur than any company in the world. This sulphur handling experience, and the knowledge Freeport-McMoRan has regarding the actual impacts of solid sulphur handling[1], as well as its concern with fair application of the Florida Sulphur Rule and other applicable air permitting regulations, enable it to provide your agency with a unique and we hope useful perspective and valuable technical information on the impacts of the first proposed solid sulphur importation into Tampa since the 1960s.

In general, it appears that the application is not fully responsive to EPC's request for additional information. Consultants who have reviewed the responses provided to EPC have advised Freeport-McMoRan that the predicted emissions from the proposed facility are underestimated. They also report that, despite EPC's requirement to recalculate solid sulphur emissions using a sulphur specific emission factor equation, BBTC continues to rely on an emission factor equation which is

[1] To our knowledge, permit applicants for all pending solid sulphur permit applications have no direct experience shipping, storing and handling manufactured forms of solid sulphur with their unique biological dust related properties.

not sulphur specific, is designed for outdoor stockpiles rather than enclosed sulphur transfers, and is clearly not the best available methodology for estimating solid sulphur emissions. Further, our clients have also been advised that construction of the proposed facility will result in violations of the PM10 ambient air quality standard and the PSD increment applicable to minor sources under Rule 62-212.300(1)(c), Florida Administrative Code.

Thus, while BBTC has responded to many issues raised in EPC's prior request for additional information, significant issues remain unaddressed or are inadequately addressed. This appears to result in a failure to provide reasonable assurance that the proposed facility will not violate rules and standards of EPC and the Florida Department of Environmental Protection. Attached for your convenience is a more detailed discussion of issues raised by BBTC's response, and questions which Freeport-McMoRan's consultants believe must be answered before the application can be properly deemed complete or responsive to EPC's original questions.

Please call should you have any questions.

Sincerely,

EARL, BLANK,
KAVANAUGH & STOTTS, P.A.

Dennis M. Stotts
For the Firm

/mws
Attach.

cc: Mr. Jim McDonald
Florida Department of
Environmental Protection
Tampa District

ISSUES WHICH SHOULD BE ADDRESSED IN RESPONSE TO ADDITIONAL INFORMATION SUPPLIED BY BBTC IN RESPONSE TO FEBRUARY 10, 2000 REQUEST FOR ADDITIONAL INFORMATION

I. THE EMISSIONS FOR THE PROPOSED FACILITY REMAIN SUBSTANTIALLY UNDERESTIMATED

A. BBTC Used an Inapplicable Emission Factor for Estimating PM10 Emissions from Solid Sulfur Unloading, Storage and Handling.

In the HCEPC Air Division's February 10, 2000 Request for Additional Information, Item 39, the Division noted that the AP-42 emissions factors referenced in the FDEP Sulfur Rule are for fugitive emissions from paved and unpaved roads, construction activities, and outdoor stockpiles of aggregate materials such as shale, coal ,and gravel, and that none of those emissions factors are applicable to enclosed drop transfer points, such as the ones proposed in the BBTC's application to construct a solid sulfur marine terminal.

As part of that item, the BBTC was asked to account for all drop transfer points that would be part of the proposed sulfur terminal and to recalculate the solid sulfur PM emissions from all solid sulfur drop transfer points, using the sulfur specific Lundgren drop transfer emission factor that is in the February 1984 FDEP Sulfur Report, the best available data for solid sulfur emissions estimates.

In the response to Item 39, the BBTC chose not to do the requested recalculation. Instead, BBTC provided a portion of Dr. Lundgren's August 1984 report entitled "REGARDING SULFUR RULEMAKING, Summary Report on the Dust Emission Factor For Wet Prilled Sulfur," and a copy of a memo from Dr. Lundgren to Mr. Jeffery Stewart of IMC Agrico, in which Dr. Lundgren said "Although . . . [the equation the BBTC was requested to use to recalculate the drop transfer points ("DTP") emissions] . . . did fit [the laboratory data in the February 1984 FDEP Sulfur Report] . . . it is not an appropiate field emission factor equation and it is not the field emissions factor equation developed by me and presented in my [August] 1984 report. . . . A field emission factor equation should include moisture content, silt content, wind speed, drop height, a particle size multiplier, and a materials discharge rate." (emphasis supplied).

HCEPC Air Division's February 10, 2000 Request for Additional Information, Item 46, directed that BBTC use the Lundgren drop transfer emission factor to calculate the maximum annual and 24-hour uncontrolled particulate matter emissions generated by transferring sulfur from the storage building to the sulfur melter. In the response to Item 46, the BBTC chose not to do the calculation requested. Instead, BBTC referred to its response to Item 39, and recalculated the DTP emissions based on the outdoor stockpile loading emission factor in the 1995 version of AP-42.

Thus, BBTC disregarded the clear opinion of its own expert, Dr. Lundgren, and relies on the AP-42 emission factor equation for outdoor storage piles which is inapplicable and inappropriate for estimating fugitive PM emissions from the types of enclosed transfer and storage operations proposed. Nor does it incorporate silt content or drop height, as recommended by Dr. Lundgren.

Further, in response to Item 6, BBTC itself states, "[t]he physical characteristics of solid sulfur that could affect the generation of fugitive particulate matter emissions are the moisture content **and the silt content.**" (emphasis supplied).

Citing various references to FDEP workshops and the February 27, 1985 ERC rule adoption hearing, BBTC apparently concludes that AP-42 emission factors are the only emission factors allowed by the ERC adopted sulfur rule. BBTC quotes Mr. Smallwood in a sulfur rule workshop as stating, ". . . what I am getting at is that the staff [the Department's staff] has talked in the past about the idea that we feel we should use the published emission factors that are included in EPA's document called, Compilation of Air Pollution Factors . . . **whenever those factors are clearly applicable to the case** . . . ." (emphasis supplied). Further, BBTC notes that Mr. Smallwood stated to the ERC that "we [the Department] believe that the emission factors that EPA has published for solid materials handling [the AP-42 emission factors, supplement 14, May 1983] are generally applicable to sulfur. **We also have put in the rule that we will use the best available information.**" (emphasis supplied).

BBTC ignores these clear statements of FDEP's intent to use best available data and to use AP-42 only "whenever those factors are clearly applicable to the case." Even a cursory reading of the quotes cited by BBTC and the ERC adopted sulfur rule reveals that DEP intended to use best available data, and to only use AP-42 where clearly applicable. Mr. Smallwood has confirmed that the sulfur rule was intended to require that best available data be used. Mr. Smallwood has also further confirmed that AP-42 is not applicable in this case to enclosed solid sulfur transfers as proposed by BBTC.

In summary, the sulfur storage and handling rule, as adopted by the ERC in 1985, requires use of the applicable emission factors in Supplement 14 of AP-42, Section 11.2, Fugitive Dust Sources, only if better data is not available. If, as in this case, the AP-42 emission factors are not applicable to a particular emissions unit at a sulfur storage and handling facility, the rule requires use of the best data that is available. In this case, that would appear to be, according to BBTC's own expert Dr. Lundgren, a sulfur-specific emission factor developed at the University of Florida.

Dr. Lundgren states that a drop transfer point (DTP) PM emissions factor equation should include moisture content, silt content, wind speed, drop height, and a particle size multiplier term. On page 47 of his August 1984 report, Dr. Lundgren said that "laboratory tests have shown that the dust release rate varies inversely as the cube root of product discharge rate, and that this relationship is also shown and used in the EPA (Supplement 14) batch drop equation."[1] On page 47, Dr. Lundgren concludes that his test chamber determined that sulfur PM emission factors needed to be adjusted by this product discharge rate factor to reflect the rates that would occur under field conditions (i.e. higher product batch drop rates).

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[1] Actually, the AP-42 equation uses the dumping device capacity in cubic yards. On page 19 of his report, a footnote refers to this adjustment factor based on laboratory tests, but no reference is provided.

The sulfur drop transfer points proposed for the BBTC facility are continuous drop transfer points. The type of adjustment factor, discussed by Dr. Lundgren in his report, was applied by the EPA to the AP-42 Supplement 14 batch drop PM EF equation (i.e front-end loader dumping to an open stockpile). The EPA did not apply that type of adjustment factor to the continuous drop transfer equation (conveyor to conveyor drop transfer), obviously determining that it was not applicable to continuous drop transfers.

For the 1995 AP-42 PM EF equation (for loading to outdoor stockpiles), the EPA combined the previous continuous drop transfer data, with the previous batch drop data and developed a new equation that does not include the "dumping device capacity" adjustment factor.

Before a "dumping device capacity" or "materials discharge rate" "adjustment factor is used for permitting purposes, the permitting agency needs documentation from the applicant on the rationale for applying this kind of adjustment factor (the physics behind the factor) and the laboratory studies that demonstrate its validity. In the materials submitted to date, BBTC has not provided any documentation of the need for or the appropriate application of a materials discharge rate term.

Questions Needed to Clarify Remaining Issues

(1) Recalculate DTP PM10 Emissions. Account for all drop transfer points that would be part of the proposed sulfur terminal, and recalculate the solid sulfur emissions from all solid sulfur drop transfer points, using the sulfur specific emission factor equation as directed in EPC's February 10, 2000 request for additional information, as well as the sulfur-specific Lundgren drop transfer PM emissions factor equation, as presented in Dr. Lundgren's August 1984 report entitled "REGARDING SULFUR RULEMAKING, Summary Report on the Dust Emission Factor For Wet Prilled Sulfur." Calculate the probable maximum PM_{10} emissions from all DTP's for the maximum 24-hour case and the maximum annual average case.

If the BBTC thinks the "discharge rate" adjustment is appropriate, provide technical documentation that justifies the need for and the appropiate application of a materials discharge rate or dumping device capacity adjustment term. Describe the physics that explains the need for applying a "dumping device capacity" or "materials discharge rate" adjustment factor to the Lundgren dust measurement chamber sulfur particulate matter emissions data. Provide the laboratory studies and data referred to on page 47 of Dr. Lundgren's August 10, 1984 Emission Factor Report and any other relevant documentation on the basis or appropriate use of this type of adjustment factor.

If the BBTC thinks another DTP PM EF equation represents the best available data, provide the type of PM emission estimates requested above for the DTP PM EF equation the BBTC thinks should be used, in addition to the calculations requested above.

(2) After calculating the estimated emissions, for DTPs that are enclosed and vented through a particulate matter control device (water sprays, scrubber, etc.) prior to being emitted to the outside air, provide, for each DTP emissions point, a documented estimate of the capture

efficiency (percent of the uncontrolled PM emissions, weight basis, that would enter the control device) and the control device collection efficiency (percent of the captured PM emissions, weight basis, that would be removed from the exit gas stream by the control device).

(3) Provide a copy of the published report(s) that document the need to used a materials discharge rate or device dumping capacity adjustment term as part of the Lundgren DTP PM emissions factor equation or any other DTP PM emissions factor equation.

Does this type adjustment factor apply only to batch drop operations? If not, how should it be applied to adjust the Lundgren test chamber data to a continuous drop transfer emissions factor?

(4) Why should the HCEPC Air Division not conclude that the sulfur specific emission factor included in FDEP's February 1984 Sulfur Report or the August 1984 sulfur specific Lundgren PM emissions factor equation represents the best available data for the purpose of estimating the PM10 emissions from the drop transfer points (DTP) that would be part of the BBTC's solid sulfur storage & handling facility? If the BBTC thinks another DTP PM EF equation represents the best available data, provide a detailed discussion of the basis of that conclusion.

B. BBTC Underestimated PM10 Emissions from Solid Sulfur Melting.

Freeport-McMoRan has extensive experience learned through decades of actual sulfur melting and storage. Based on that experience, it knows that conditions within a melter are drastically different from those in a liquid sulfur storage tank because of factors such as moisture created turbulence, agitation of the liquid sulfur and other melter variables. As a result, it can be authoritatively stated that melters generate substantially higher particulate emissions than the emissions vented from sulfur storage tanks.

In addition to the sulfur emissions generated from the surface of the molten sulfur reservoir within the melter, great quantities of steam will be generated within the melter as the moisture in and on the solid sulfur contacts the molten sulfur. BBTC anticipates adding substantial moisture to the solid sulfur through the use of water sprays and surfactants in the handling and storage process. Such moisture on the sulfur pellets will be converted to steam on contact with the molten sulfur. The steam generated by the melter blows back through the melter and contacts the incoming solid sulfur. The steam evaporates surface moisture on the entering solid sulfur, allowing the silt initially trapped by the moisture to be stripped from the solid sulfur and carried out by the steam flow and melter emissions. This steam generated action will also increase emissions from the surface of the liquid sulfur reservoir.

In short, the steam generated turbulence within a solid sulfur melter is dramatic and turbulent. This steam generated turbulence has been directly observed by Freeport over decades of sulfur melting experience. There should be no question that the steam generated turbulence will result in increased emissions above those estimated by BBTC using molten sulfur storage tank emission levels. In response to Item 47 of EPC's February 10, 2000 Request for Additional Information ("RAI"),

BBTC merely stated that the emission estimates provided in the original application, which were based on measured particulate matter emissions from molten sulfur storage tanks, are conservative estimates. BBTC did not provide the revised estimate of emissions requested. In addition to being unresponsive, BBTC's position is contrary to industry experience and common sense.

Questions

(1) Calculate the quantify of steam generated in the melter. Provide data on moisture levels in commercial shipments of bulk sulfur to establish the sulfur moisture level as received. Account for the number of water spray devices used to control dust and water flow rates to be used in each device. Compute the moisture level in the bulk sulfur to be stored in the proposed sulfur storage building.

(2) Describe the process controls to maintain the sulfur melter scrubber vent stack temperature at 97° F as stated in Table 3-6 of the application. If BBTC intends to add processed water to the scrubber to control the scrubber temperature as mentioned in the response to Item 49, provide an engineering estimate of the water rate required. Account for the condensation of the steam generated in the melter.

(3) Provide an engineering estimate of the quantity of wastewater generated in the melter scrubber and describe the means for disposing of the wastewater. Provide an estimate of the sulfur particulate in the wastewater and any chemicals added to control scrubber pH. If BBTC intends to truck the water to a disposal site, estimate the quantity of trucks required to dispose of the wastewater and the emissions generated by the truck traffic. If BBTC intends to dispose of the wastewater on site, provide a plan for disposing of the wastewater and the status of the water disposal permit.

(4) Recalculate the PM10 emissions from the melter scrubber taking into account the additional ventilation produced by the quantity of steam generated in the melter.

C. BBTC Substantially Underestimates PM10 Emissions from Road Dust Reentrained by On-Site Truck Traffic

In item 61, EPC requested that BBTC calculate the amount of fugitive PM30 and PM10 emissions that will occur as a result of the truck traffic involved in distributing the liquid sulfur to the new terminal's customers using the estimating procedure in AP-42, Section 13.2. In its response, BBTC applied the AP-42, section 13.2.1 emission factor equation, which is a function of the road surface silt loading (g/m^2). BBTC assumed a silt loading value of 0.4 g/m^2, which is the AP-42 default silt loading for public paved roads, under normal conditions with low, average, daily traffic.

This silt loading factor is inappropriate because the processes which result in the deposition of particulate matter onto paved roads (i.e., vehicle related deposition, dust fall, mud and dirt carryout, errosion from adjacent areas, and spills) are more pronounced for industrial paved roads

such as those at BBTC's facility than with public paved roads. At least a 1 g/m^2 silt loading is reasonable and appropriate for industrial facilities such as BBTC and is conservatively below the lower range of average silt loadings listed in AP-42, Table 13.2.1-3.

Question

(1). Recalculate the estimated amount of the fugitive PM30 and PM10 emissions that will occur as the result of the proposed facility's onsite truck traffic, using the estimating procedures in AP-42, Section 13.2, including an appropriate silt loading value of at least 1 g/m^2 for industrial facilities.

II. THE AIR QUALITY IMPACT ANALYSIS MODELING DOES NOT ACCOUNT FOR ALL POTENTIAL EMISSIONS, CONTAINS FLAWED ASSUMPTIONS, AND HAS NOT INCORPORATED FDEP'S EMISSIONS INVENTORY

In response to Items 63 and 64 of EPC's February 10, 2000 Request for Additional Information, BBTC stated that it would perform modeling related to the proposed facility's impact on PSD increments and ambient air quality standards based upon an emissions inventory being developed by FDEP. The inventory included in BBTC's May 10, 2000 response is not based upon the FDEP emissions inventory, which has not been completed.

In Item 65, EPC directed BBTC to submit its proposed air modeling protocol for agency approval prior to redoing the modeling. This step, which appears to be required under FDEP's delegation to EPC, was apparently omitted in BBTC's response. Prior review and approval of the modeling protocol may properly address the model's inadequacies. Since prior review was not undertaken, several specific issues related to AAQS and PSD increment modeling are offered because the modeling submitted appears in some instances to be inconsistent with appropriate U.S. EPA guidelines and requirements:

1. Page 3 of the Air Quality Impact Analysis ("AQIA") states that the highest of the sixth highest (H6H) predicted PM10 concentration at any prediction location (receptor) over the five year period of air quality modeling is used to compare with the National Ambient Air Quality Standard (NAAQS) for 24 hour PM10 concentrations. While the Industrial Source Complex (ISC) Model does permit a user to calculate this concentration, U.S. EPA guidance on interpreting compliance with the NAAQS for PM10[2] specifically states that the fourth highest 24 hour PM10 concentration in any rolling three year period should be used for comparison with the 24 hour NAAQS. This is a different concentration than the sixth highest concentration over the five year period of modeling.

2. Pages 7 and 8 of the AQIA state that the receptor locations for the screening analysis consisted of a polar grid with 36 receptors at 10^0 intervals at the plant property line given in Table 6 and 202 additional off property receptors along each of these 10^0 radials at downwind distances of

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[2] 40 CFR Part 50, Appendix K.

0.3,0.4,0.7,1.0,1.3,1.5 and 2.0 kilometers from the plant center represented by the boiler stack. The AQIA also states that modeling refinements were performed by employing a polar receptor with a maximum spacing of 100 meters along each radial and an angular spacing of 2^0. The U.S. EPA Guideline on Air Quality Models is very clear on the mandate in air quality modeling to locate the highest predicted concentrations in relation to the applicable NAAQS.[3] For sources with tall stacks, the kind of receptor spacing used in the AQIA may be very appropriate because the predicted concentrations change little with small changes in location. However, for the ground level or close to ground level sources at the BBTC proposed facility, very large changes in predicted concentrations result from very small changes in prediction location. Thus, a much denser receptor grid must be used to find the highest predicted concentrations in relation to the NAAQS. A receptor grid of no more than 10 meter spacing along the property line is needed with additional receptors at 10 meter intervals along radials outward from the property line.

3. Pages 6 and 7 and Table 2 of the AQIA describe the emissions inventory of the proposed facility used in the air quality modeling. The AQIA omits any emissions from the reentrained dust from the truck traffic to be generated by the proposed facility. This is so even though BBTC's response to Item 61 of the February 10, 2000 request for additional information states that 12 tons per year of PM10 emissions will be generated from this truck traffic.

4. Pages 8 and 9 of the AQIA state that the measured annual average PM10 concentration at one of the three PM10 samplers closest to the proposed facility was used to represent the measured background to add to the predicted highest 24 hour and annual average PM10 concentrations. The lowest measured annual average concentration at these three samplers was selected as the background concentration. This concentration was 20 ug/m3. There is no precedent for using an annual average background concentration to add to the applicable highest predicted 24 hour concentration for comparison with the NAAQS. The U.S. EPA Guideline on Air Quality Models specifically recommends that the background concentrations to add to the predicted short term (e.g. 24 hour) concentrations are the average measured concentrations occurring under the same meteorological conditions under which the applicable highest predicted 24 hour concentrations occur when the sources being modeled are not impacting the monitoring site[4].

5. Pages 6 and 7 of the AQIA describe the sources other than the proposed facility included in the air quality modeling. This appears incomplete and inadequate because BBTC did not wait to receive the Florida DEP's comprehensive particulate matter emissions inventory for the PSD or NAAQS analysis.

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[3] 40 CFR Part 51, Appendix W, U.S. EPA, Guidelines on Air Quality Models, Section 8.2.2, p. 409.

[4] Ibid. Section 9.2.2, p. 415.

Questions

(1) Using the estimated emissions derived from the sulfur-specific emission factor equations discussed above, determine the amount of the PM10 PSD Increments and the amount of PM10 ambient air quality standards that will be consumed by the proposed project.

(2) Prior to redoing the ambient air quality modeling, submit a proposed air modeling protocol to the permitting office, and obtain FDEP approval of the protocol.

(3) Use the highest of the fourth highest predicted 24 hour concentration in each rolling 3 year period as the concentration to compare with the 24 hour PM10 National Ambient Air Quality Standard since this is the specific concentration used to determine compliance with this standard (40 CFR Part 50, Appendix K).

(4) Follow the mandate in the U.S. EPA Guideline on Air Quality Models (40 CFR Part 51, Appendix W, U.S. EPA, Guideline on Air Quality Models, Section 8.2.2, p. 409) to include in the air quality modeling receptors where the highest predicted PM10 concentrations are expected to occur.

(5) Include in the air quality modeling analysis the reasonable estimates of PM10 emissions from reentrained dust from the truck traffic into and out of the proposed facility in a manner consistent with EPA guidance for industrial roads.

(6) Rather than using the lowest measured annual average PM10 concentration in the vicinity of the proposed facility as the background 24 hour PM10 concentration to be added to the applicable highest predictions, follow the Guideline on Air Quality Models which mandates the use of the average concentration occurring under the same meteorology as the applicable highest predictions (Ibid. Section 9.2.2, p. 415), under which the applicable highest measured 24 hour concentrations occur when the sources being modeled are not impacting the monitoring site.

(7) Use in your air quality modeling the comprehensive Florida DEP particulate matter emissions inventory being prepared for your use in the air quality analysis, rather than incomplete inventory apparently utilized.

III. ADDITIONAL ISSUES

A. Documentation that Shipments Meet Definition of Standard Sulfur Pellet

In accordance with Florida's Sulfur Rule, all solid sulfur must meet the following definition:

62-210.200. Definition
(274) "Standard Sulfur Pellets" – Any generally spherical form of solid sulfur (such as air or waterformed pills, or granules, or hemispherical forms such as Sandvick rotoform, but not including

agglomerates, popcorn, slate or crushed bulk sulfur) that meets all of the following specifications. All required tests shall be performed on sulfur pellets that have been allowed to stand a minimum of 20 days after being formed. All test results shall be the arithmetic average of three test runs, each on a separate representative composite sample of the shipment or lot being tested.

(a) Not more than 20 percent retained on a 1/4 inch U.S. (6.33 mm) screen, determined in accordance with SUDIC Test Method S2-77; Sieve Analysis of Sulfur Forms, as adopted in Rule 62-297, F.A.C.

(b) Less than six percent additional fines (minus 50 U.S. screen) generated under SUDIC's standard Stress Level II test (Method S5-77: Determination of Friability of Sulfur Forms – 28 inch (700 mm) Diameter Tumbler Test).

The definition contains three performance criteria: 1) the physical form of the manufactured solid sulfur must be generally spherical and contain no agglomerates, popcorn, slate or crushed bulk sulfur, 2) the particle size, and 3) the fines content.

Experience with international shipping and handling of manufactured solid sulfur has shown that various forms of solid sulfur (prilled, rotoform, crushed bulked, and/or slate) are often commingled at major solid sulfur shipping terminals and it is often difficult to obtain spherical solid sulfur that is not contaminated with non-spherical forms. For this reason, there is a need to certify that only a specific form of manufactured solid sulfur will be imported after pretesting or a requirement to test each shipment of solid sulfur, at either the point of loading or receipt, to ensure compliance with Florida's standard sulfur pellet definition and thereby ensure that no non-spherical (e.g, bulk or slate sulfur) forms are being imported into the state.

Questions

(1) In response to Item 5 of the February 10, 2000 Request for Additional Information, BBTC proposes testing each shipment of solid sulfur, utilizing the two SUDIC test methods prescribed in the definition of standard sulfur pellets found at Rule 62-212.200 (274), F.A.C. How does BBTC propose to insure compliance with the third element of the definition (i.e., no non-spherical forms)? What would BBTC do with any shipments of solid sulfur containing non-spherical forms of sulfur?

(2) Will BBTC certify that only pretested specific brands of manufactured solid sulfur will be imported to the proposed facility?

B. Emissions Contol Efficiencies

1. In Item 46, EPC requested that BBTC use the Lundgren Drop Transfer EF to calculate particulate matter emissions generated by transferring solid sulfur from the storage building to the melter. In its response, BBTC chose not to use the required Lundgren Drop Transfer EF, and

stated that the controlled particulate matter emission rate is based on a dust loading of the exhaust from the loader of 0.033 grains/dscf.

Question

What is the basis for the 0.033 grains/dscf exhaust loading? What scrubber inlet grain loading is it based on? How did you calculate the scrubber inlet grain loading?

2. In Item 49, EPC requested that BBTC provide design calculations for the scrubber to be used that demonstrate that the scrubber design can handle the conditions expected. BBTC responded that the design will be adequate, without providing any design data.

Question

Provide design calculations for the scrubber to be used that demonstrate that the scrubber design can handle the high heat loads so that the scrubber water will not boil, that the fan design can handle the pressure drop needed to maintain the scrubber's design collection efficiency, and that adequate scrubber water blow down has been provided.

3. In Item 50, EPC requested that documentation be provided to support the fractional particulate matter collection efficiencies for the type of control devices and measures to be used, as those efficiencies relate to control of solid sulfur particulate. In its response, BBTC refers to Item 44, which merely refers to the inadequate information provided in the original application. Since no documentation was provided, the answer is not responsive.

Question

Provide documentation to support the fractional particulate matter collection efficiencies for the types of control devices or measures to be used (enclosures, water sprays at transfer points, where the wet scrubber for the melter, etc.), as those efficiencies relate to control of solid sulfur particulate.

4. In Item 58, EPC required that documented collection efficiencies be used to calculate the probable controlled emission rate of PM10 emissions from the scrubber stack. BBTC's response refers to the original application and includes what purports to be a control efficiency curve for the scrubbers. No origin or explanation for the curve is presented, and collection efficiencies are not documented.

Question

Use documented collection efficiencies for the 0-10 micron range of the intervals listed in Tables I-1 through 6, for the scrubber to be used, to calculate the probable controlled emission rate of PM10 emissions from the scrubber stack.

5. In Item 62, EPC directed that the controlled emission rate for each particle size interval for each source of sulfur particulate emission be recalculated based on the revised particulate emission estimates and appropriate documented fractional collection efficiencies, and required the recalculation of maximum 24-hour, monthly, and annual deposition rates based on this updated data. In its response, BBTC provided only part of the requested information, as described above in the preceding issues.

Question

Based on the revised particulate emissions estimates and the appropriate documented fractional collection efficiencies for the particle-size intervals listed in Table I-1 through 6, recalculate the controlled emission rate for each particle-size interval for each source of sulfur particulate emission (point and fugitive, annual and 24-hour maximum), and then recalculate the maximum 24-hour, monthly, and annual deposition rates based on this updated data.

C. Dust Pickups

In Item 15, EPC requested that BBTC explain what and where are the "dust pickups" mentioned on the bottom of Page 2-1 of the application. BBTC's response is not clear.

Question

Is the dust pickup point for each solid sulfur transfer point vented though its own stack? What are the stack exit diameters, heights, and actual flow rates? Are any of the transfer points vented through the stack on the solid sulfur storage building? Is so, which ones?

D. Emissions From the Stacker/Reclaimer

In response to Item 22, BBTC states that "[t]he stacker/reclaimer moves back and forth across the pile constantly during stacking and reclaiming adding or removing only a small layer at a time.

Question

Have the PM emissions from the constant operation of the stacker/reclaimer been accounted for in the application?

SUMMARY LIST OF QUESTIONS ADDRESSING BBTC'S RESPONSES TO FEBRUARY 10, 2000 REQUEST FOR ADDITIONAL INFORMATION

I. THE EMISSIONS FOR THE PROPOSED FACILITY REMAIN SUBSTANTIALLY UNDERESTIMATED

A. BBTC Used an Inapplicable Emission Factor for Estimating PM10 Emissions from Solid Sulfur Unloading, Storage and Handling.

Questions Needed to Clarify Remaining Issues

(1) Recalculate DTP PM10 Emissions. Account for all drop transfer points that would be part of the proposed sulfur terminal, and recalculate the solid sulfur emissions from all solid sulfur drop transfer points, using the sulfur specific emission factor equation as directed in EPC's February 10, 2000 request for additional information, as well as the sulfur-specific Lundgren drop transfer PM emissions factor equation, as presented in Dr. Lundgren's August 1984 report entitled "REGARDING SULFUR RULEMAKING, Summary Report on the Dust Emission Factor For Wet-Prilled Sulfur." Calculate the probable maximum PM_{10} emissions from all DTP's for the maximum 24-hour case and the maximum annual average case.

If the BBTC thinks the "discharge rate" adjustment is appropriate, provide technical documentation that justifies the need for and the appropiate application of a materials discharge rate or dumping device capacity adjustment term. Describe the physics that explains the need for applying a "dumping device capacity" or "materials discharge rate" adjustment factor to the Lundgren dust measurement chamber sulfur particulate matter emissions data. Provide the laboratory studies and data referred to on page 47 of Dr. Lundgren's August 10, 1984 Emission Factor Report and any other relevant documentation on the basis or appropriate use of this type of adjustment factor.

If the BBTC thinks another DTP PM EF equation represents the best available data, provide the type of PM emission estimates requested above for the DTP PM EF equation the BBTC thinks should be used, in addition to the calculations requested above.

(2) After calculating the estimated emissions, for DTPs that are enclosed and vented through a particulate matter control device (water sprays, scrubber, etc.) prior to being emitted to the outside air, provide, for each DTP emissions point, a documented estimate of the capture efficiency (percent of the uncontrolled PM emissions, weight basis, that would enter the control device) and the control device collection efficiency (percent of the captured PM emissions, weight basis, that would be removed from the exit gas stream by the control device).

(3) Provide a copy of the published report(s) that document the need to used a materials discharge rate or device dumping capacity adjustment term as part of the Lundgren DTP PM emissions factor equation or any other DTP PM emissions factor equation.

Does this type adjustment factor apply only to batch drop operations? If not, how should it be applied to adjust the Lundgren test chamber data to a continuous drop transfer emissions factor?

(4) Why should the HCEPC Air Division not conclude that the sulfur specific emission factor included in FDEP's February 1984 Sulfur Report or the August 1984 sulfur specific Lundgren PM emissions factor equation represents the best available data for the purpose of estimating the PM10 emissions from the drop transfer points (DTP) that would be part of the BBTC's solid sulfur storage & handling facility? If the BBTC thinks another DTP PM EF equation represents the best available data, provide a detailed discussion of the basis of that conclusion.

B. BBTC Underestimated PM10 Emissions from Solid Sulfur Melting.

Questions

(1) Calculate the quantify of steam generated in the melter. Provide data on moisture levels in commercial shipments of bulk sulfur to establish the sulfur moisture level as received. Account for the number of water spray devices used to control dust and water flow rates to be used in each device. Compute the moisture level in the bulk sulfur to be stored in the proposed sulfur storage building.

(2) Describe the process controls to maintain the sulfur melter scrubber vent stack temperature at 97° F as stated in Table 3-6 of the application. If BBTC intends to add processed water to the scrubber to control the scrubber temperature as mentioned in the response to Item 49, provide an engineering estimate of the water rate required. Account for the condensation of the steam generated in the melter.

(3) Provide an engineering estimate of the quantity of wastewater generated in the melter scrubber and describe the means for disposing of the wastewater. Provide an estimate of the sulfur particulate in the wastewater and any chemicals added to control scrubber pH. If BBTC intends to truck the water to a disposal site, estimate the quantity of trucks required to dispose of the wastewater and the emissions generated by the truck traffic. If BBTC intends to dispose of the wastewater on site, provide a plan for disposing of the wastewater and the status of the water disposal permit.

(4) Recalculate the PM10 emissions from the melter scrubber taking into account the additional ventilation produced by the quantity of steam generated in the melter.

C. BBTC Substantially Underestimates PM10 Emissions from Road Dust Reentrained by On-Site Truck Traffic

Question

(1) Recalculate the estimated amount of the fugitive PM30 and PM10 emissions that will occur as the result of the proposed facility's onsite truck traffic, using the estimating procedures in AP-42, Section 13.2, including an appropriate silt loading value of at least 1 g/m^2 for industrial facilities.

II. THE AIR QUALITY IMPACT ANALYSIS MODELING DOES NOT ACCOUNT FOR ALL POTENTIAL EMISSIONS, CONTAINS FLAWED ASSUMPTIONS, AND HAS NOT INCORPORATED FDEP'S EMISSIONS INVENTORY

Questions

(1) Using the estimated emissions derived from the sulfur-specific emission factor equations discussed above, determine the amount of the PM10 PSD Increments and the amount of PM10 ambient air quality standards that will be consumed by the proposed project.

(2) Prior to redoing the ambient air quality modeling, submit a proposed air modeling protocol to the permitting office, and obtain FDEP approval of the protocol.

(3) Use the highest of the fourth highest predicted 24 hour concentration in each rolling 3 year period as the concentration to compare with the 24 hour PM10 National Ambient Air Quality Standard since this is the specific concentration used to determine compliance with this standard (40 CFR Part 50, Appendix K).

(4) Follow the mandate in the U.S. EPA Guideline on Air Quality Models (40 CFR Part 51, Appendix W, U.S. EPA, Guideline on Air Quality Models, Section 8.2.2, p. 409) to include in the air quality modeling receptors where the highest predicted PM10 concentrations are expected to occur.

(5) Include in the air quality modeling analysis the reasonable estimates of PM10 emissions from reentrained dust from the truck traffic into and out of the proposed facility in a manner consistent with EPA guidance for industrial roads.

(6) Rather than using the lowest measured annual average PM10 concentration in the vicinity of the proposed facility as the background 24 hour PM10 concentration to be added to the applicable highest predictions, follow the Guideline on Air Quality Models which mandates the use of the average concentration occurring under the same meteorology as the applicable highest predictions (Ibid. Section 9.2.2, p. 415), under which the applicable highest measured 24 hour concentrations occur when the sources being modeled are not impacting the monitoring site.

(7) Use in your air quality modeling the comprehensive Florida DEP particulate matter emissions inventory being prepared for your use in the air quality analysis, rather than incomplete inventory apparently utilized.

III. ADDITIONAL ISSUES

A. Documentation that Shipments Meet Definition of Standard Sulfur Pellet

Questions

(1) In response to Item 5 of the February 10, 2000 Request for Additional Information, BBTC proposes testing each shipment of solid sulfur, utilizing the two SUDIC test methods prescribed in the definition of standard sulfur pellets found at Rule 62-212.200 (274), F.A.C. How does BBTC propose to insure compliance with the third element of the definition (i.e., no non-spherical forms)? What would BBTC do with any shipments of solid sulfur containing non-spherical forms of sulfur?

(2) Will BBTC certify that only pretested specific brands of manufactured solid sulfur will be imported to the proposed facility?

B. Emissions Contol Efficiencies

Questions

(1) What is the basis for the 0.033 grains/dscf exhaust loading? What scrubber inlet grain loading is it based on? How did you calculate the scrubber inlet grain loading?

(2) Provide design calculations for the scrubber to be used that demonstrate that the scrubber design can handle the high heat loads so that the scrubber water will not boil, that the fan design can handle the pressure drop needed to maintain the scrubber's design collection efficiency, and that adequate scrubber water blow down has been provided.

(3) Provide documentation to support the fractional particulate matter collection efficiencies for the types of control devices or measures to be used (enclosures, water sprays at transfer points, where the wet scrubber for the melter, etc.), as those efficiencies relate to control of solid sulfur particulate.

(4) Use documented collection efficiencies for the 0-10 micron range of the intervals listed in Tables I-1 through 6, for the scrubber to be used, to calculate the probable controlled emission rate of PM10 emissions from the scrubber stack.

(5) Based on the revised particulate emissions estimates and the appropriate documented fractional collection efficiencies for the particle-size intervals listed in Table I-1 through 6, recalculate

the controlled emission rate for each particle-size interval for each source of sulfur particulate emission (point and fugitive, annual and 24-hour maximum), and then recalculate the maximum 24-hour, monthly, and annual deposition rates based on this updated data.

C. Dust Pickups

Question

Is the dust pickup point for each solid sulfur transfer point vented though its own stack? What are the stack exit diameters, heights, and actual flow rates? Are any of the transfer points vented through the stack on the solid sulfur storage building? Is so, which ones?

D. Emissions From the Stacker/Reclaimer

Question

Have the PM emissions from the constant operation of the stacker/reclaimer been accounted for in the application?