

John



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DER-BAW

December 21, 1989

Mr. C. H. Fancy, P.E.  
Bureau of Air Regulation  
Florida Department of Environmental Regulation  
2600 Blair Stone Road  
Tallahassee, Florida 32399-2400

Re: Proposed Modification - Kiln 2 Coal Conversion  
PSD-FL-142; AC13-169901

Dear Mr. Fancy:

Mr. Barry Andrews of your staff has verbally requested additional information regarding the BACT analysis for the above referenced permit application. Barry requested that two items be addressed for the SO<sub>2</sub> BACT analysis. These items were:

1. Lower sulfur coal will provide a benefit since it is higher in heating value, thereby requiring less coal usage. This would translate into less SO<sub>2</sub> emissions and cost savings from coal purchases.
2. The effect of using lower sulfur coal on sulfuric acid emissions.

In regards to the first item, Barry has assumed that the heating value of coal is inversely related to the sulfur content; i.e., as sulfur content decreases heating value increases. This would imply additional benefits of less coal usage, lower coal costs, and lower SO<sub>2</sub> emissions. Barry stated that these additional benefits of lower sulfur coal should be addressed in the BACT analysis.

To investigate Barry's concerns, Tarmac has analyzed their coal analysis data for the period January 1987 through December 1989. Tarmac took weekly coal samples during this period. As part of the coal analysis, sulfur content and heating value are measured.

**KBN ENGINEERING AND APPLIED SCIENCES, INC.**

1034 Northwest 57th Street Gainesville, Florida 32605 904/331-9000 FAX: 904/332-4189



Mr. C. H. Fancy, F.E.  
Fla. Dept. of Env. Regulation  
Proposed Modification -Kiln 2 Coal Conversion  
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Page 2

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Presented in the attached figure is a plot of coal sulfur content versus coal heating value. As indicated, there is essentially no correlation between sulfur content and heating value. In fact, some of the lowest heating values occur with the lowest sulfur contents. This occurs because heating value is affected by other parameters as well, such as moisture and ash contents. As a result, there is no basis for concluding that lower sulfur coal will be higher in heating value. Therefore, it is not proper to assume this for the BACT analysis.

In regards to sulfuric acid mist, reduction in coal sulfur content will presumably result in proportionately less sulfuric acid mist emissions. In the application, sulfuric acid mist emissions were estimated as 3% of the SO<sub>2</sub> emissions. For various sulfur content coals utilized in K2, the sulfuric acid mist emissions would be as follows:

2.0% S coal	-	12.0 lb/hr.	, 52.6 TPY
1.5% S coal	-	9.5 lb/hr.	, 41.6 TPY
1.0% S coal	-	7.0 lb/hr.	, 30.7 TPY

Thank you for the opportunity to submit this information. Please call if you have any questions.

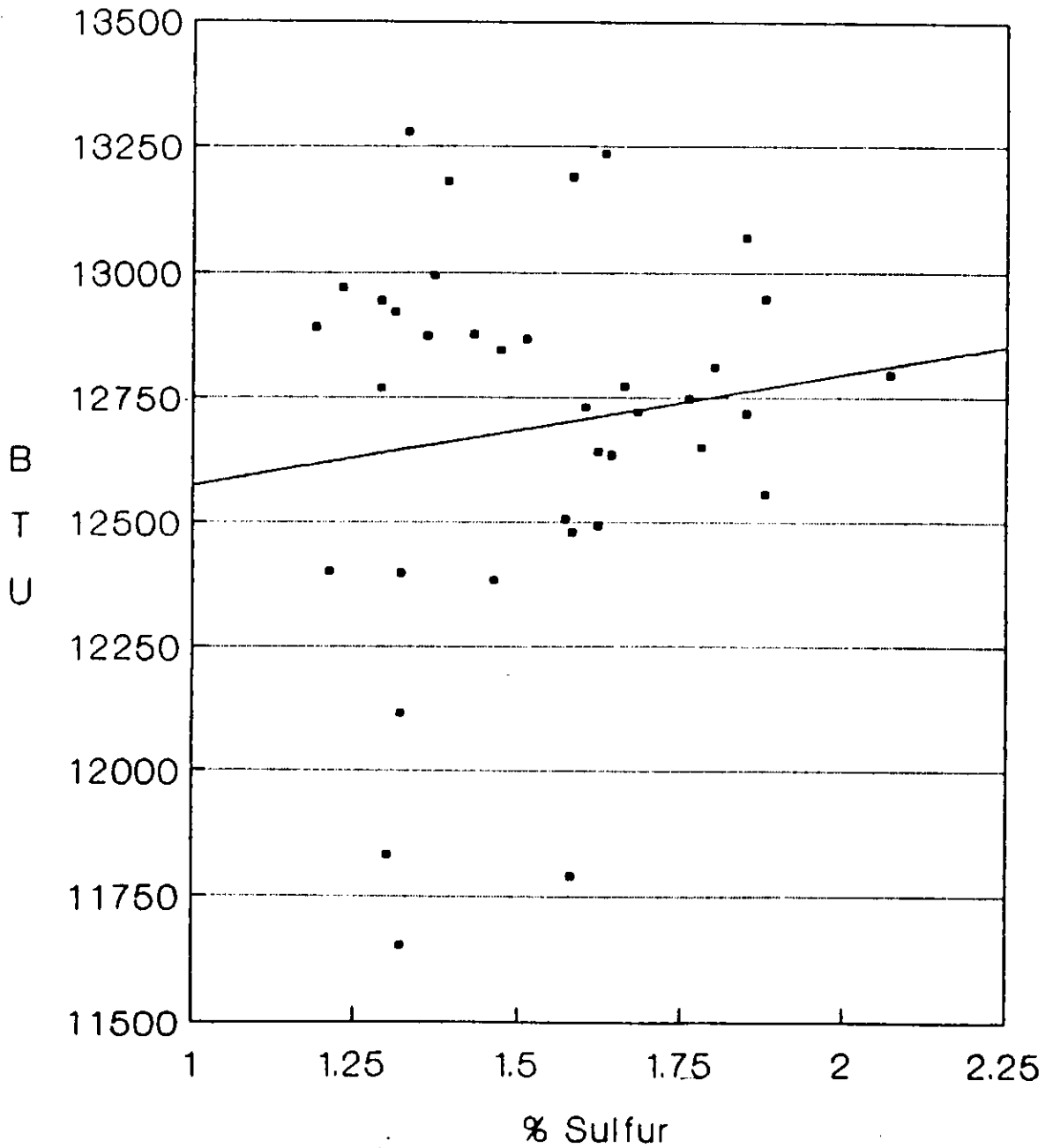
Sincerely,

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

David A. Buff., M.E., P.E.  
Principal Engineer

cc: Al Townsend

# COAL (as fired) BTU vs % Sulfur



Weekly Average (Jan. 1987-Dec. 1989)



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION IV

345 COURTLAND STREET, N.E.  
ATLANTA, GEORGIA 30365

DEC 13 1989

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DEC 18 1989  
DER-BAQM

Mr. Clair Fancy, P.E., Chief  
Bureau of Air Regulation  
Florida Department of Environmental  
Regulation  
Twin Towers Office Building  
2600 Blair Stone Road  
Tallahassee, Florida 32399-2400

RE: Tarmac Florida, Inc. (PSD-FL-142)

Dear Mr. Fancy:

We have received the November 13, 1989, letter and enclosures thereto from Mr. David A. Buff of KBN Engineering and Applied Sciences, Inc., transmitted to us by your Agency. As you are aware, this submittal by KBM was intended to address EPA's concerns with the application for Tarmac's proposed kiln 2 coal conversion project.

Applicability Determination

In reviewing this submittal, it is obvious to us that certain very basic concepts of the Prevention of Significant Deterioration (PSD) rules continue to be misapplied by KBN. In our October 18, 1989 letter to Ms. Patricia Adams of your agency, we raised several concerns with the applicant's determination of historical baseline emissions for several pollutants. In the applicant's November 13, 1989, response to these comments, KBN has dismissed our concerns as being inconsistent with the PSD rules.

KBN has agreed that baseline emissions for determining the amount of potential emissions increases as a result of the kiln modification should be based on actual historical emissions. However, their calculations for determining these actual emissions are based on fictitious allowable operating hours and production rates. This in no way represents actual emissions. KBN has used these allowable operating hours and production rates in the calculations based on their statement that "an increase in the operating hours or in the production rate of a source does not constitute a physical change in the source or change in the method of operation." The issue here is not whether the kiln, prior to coal conversion, can operate at its allowable production and operational limits without triggering PSD, but the physical modifications to the kiln to accommodate the conversion to coal. This coal conversion is the change which has triggered possible applicability to PSD. Because a physical change

Agree

will be occurring, applicability to PSD is determined by calculating the net emissions increase of the change. A "net emissions increase" is defined as:

"the amount by which the sum of the following exceeds zero: Any increase in actual emissions from a particular physical change or change in method of operation at a stationary source; and Any other increases and decreases in actual emissions at the source that are contemporaneous with the particular change and are otherwise creditable."

Major modifications are, therefore, determined by examining changes in actual emission levels. Actual emissions are defined as:

"the actual rate of emissions of a pollutant from an emissions unit, as determined in accordance with sub-paragraph (ii)-(iv) below

- (ii) In general, actual emissions as of a particular date shall equal the average rate, in tons per year, at which the unit actually emitted the pollutant during a two-year period which precedes the particular date and which is representative of normal source operation. The Administrator shall allow the use of a different time period upon a determination that it is more representative of normal source operation. Actual emissions shall be calculated using the units actual operating hours, production rates and types of materials processed, stored, or combusted during the selected time period.
- (iii) The Administrator may presume that source specific allowable emissions for the unit are equivalent to the actual emissions of the unit.
- (iv) For any emissions unit which has not begun normal operations on the particular date, actual emissions shall equal the potential to emit of the unit on that date."

EPA is confusing actual emissions (as of a particular date) with "baseline" emissions (as of baseline date - 12/31/81). Any increase occurring after the baseline date is not included in baseline emissions and must affect PSD increment (max. allowable increase).

Although the regulations provide a presumption for the use of allowable emissions when source specific limits are established, the preamble at 45 FR 52718 (August 7, 1980) states that:

"The presumption that Federally enforceable source specific requirements correctly reflect actual operating conditions should be rejected by EPA or a State, if reliable evidence is available which shows that actual emissions differ from the level established in the SIP or permit."

It is clear from the above discussion of the PSD rules that actual operating hours, production rates, etc., must be used in determining a net emissions increase. Since this data was not included in KBN's submittal, the application should be considered incomplete. ★

We also are concerned about KBN's choice of the representative time period in determining historic actual emissions. We would agree that the year 1982 could be eliminated since the kiln was shut down. The remaining years, however, appear normal and we see no reason to not use the 1980-1981 two year period for determining baseline emissions. ★

BACT Determination for SO<sub>2</sub>

We disagree with the applicant's BACT determination for SO<sub>2</sub> in a number of respects. It is understandable that SO<sub>2</sub> emission reductions observed from kiln 3 would not necessarily be identical to the future reductions on kiln 2. To choose an emission limit for kiln 2 that is 247% higher than the allowable SO<sub>2</sub> emission limit for kiln 3 based on this uncertainty does not, however, comply with the "top-down" BACT approach. If the SO<sub>2</sub> removal inherent in kilns 2 and 3 are similar when burning oil or gas, why would it not be expected that the SO<sub>2</sub> removals when burning coal would be similar? Regarding the use of lower sulfur coal, we find the estimated cost of between \$983-\$1,784 per ton of SO<sub>2</sub> removed to be reasonable. The 730 ton per year reduction in SO<sub>2</sub> by utilizing 1% sulfur coal is a significant reduction in annual emissions. Furthermore, although the amount of data contained in the BACT/LAER Clearinghouse is limited for this source type, coal of 1% sulfur (annual average) has been required as BACT from as early as 1978. KBN's conclusory statements about the competitive nature of the open market for their product should be supported by showing that no PSD cement plants were required to use low sulfur coal and/or oil/gas as fuel. This information, coupled with an examination of the fuels from non-PSD cement kilns, would support KBN's statements.

If you have any questions concerning this letter, please contact Mark Armentrout of my staff at (404) 347-2864.

Sincerely yours,

*Bruce P. Miller*

Bruce P. Miller, Chief  
Air Programs Branch  
Air, Pesticides, and Toxics  
Management Division

*copied: J. Reynolds  
E. Anderson  
M. Linn*

*J. Balderson, SE Dist  
P. Wong, E.P.M.  
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METROPOLITAN DADE COUNTY, FLORIDA



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November 17, 1989

Clair Fancy, P.E.  
Bureau of Air Regulation  
Florida Department of Environmental Regulation  
2600 Blair Stone Road  
Tallahassee, Florida 33299

RE: Tarmac Florida, Inc., Proposed Modification Kiln 2 Coal Conversion,  
PSD FL-142, AC13-169901

Dear Mr. Fancy:

We have reviewed the subject application submitted by Tarmac Florida, Inc., for the conversion of Kiln #2 to coal fuel. We offer the following comments:

DERM fully supports EPA's position on this application as outlined in Bruce Miller's October 18, 1989 letter to Patricia Adams of your office. Of major significance is the position stated that baseline emissions needs to be recalculated using a two year average of actual emissions. Also, the increase in fugitive emissions from additional stockpiling and handling of coal fuel should be accounted for in the calculations, specifically in relation to potential impact on the nearby Class I area.

In regards to Sulphur Dioxide emissions, Dade County standards are as follows:

1. Ambient Air Quality Standards
  - a. Annual Arithmetic Mean  
25 micrograms per cubic meter
  - b. Twenty-four Hour Concentration  
110 micrograms per cubic meter
  - c. Three-Hour Concentration  
350 micrograms per cubic meter
2. Emission Standards  
Stationary combustion source solid fuel with two-hundred-fifty million or less BTU per hour heat input 1.5 pound per million BTU heat input.

SO2

This application should demonstrate the sources ability to meet these standards.

We look forward to receiving a copy of the amended application for further review.

Sincerely,

Ewart L. Anderson, P.E.  
Air Permitting Engineer  
Environmental Monitoring Division

cc: G. Reynolds  
E. Anderson  
M. Smith  
A. [unclear], EPA  
E. [unclear], DPS  
J. [unclear], SE Dist  
BT