AP42 Section:	11.16
Reference:	16
Title:	Written communication from M. Palazzolo, Radian Corporation, Durham, NC, to B. L. Jackson, Weston Consultants, West Chester, PA, June 19, 1980.

A-80-15

II-C-47

GYPSUM
MANUFACTURING //
AP-42 Section 8.14
Reference Number
16

RADIAN
CORPORATION

June 19, 1980

Mr. Barry L. Jackson
Project Manager
Weston Consultants
Westonway
West Chester, PA 19380

Dear Mr. Jackson:

As discussed during the emission testing at the U.S. Gypsum plant in Shoals, Indiana, I am providing you with the enclosed estimate of the uncontrolled emissions from the plant's board end-sawing operation. This estimate should allow an accurate calculation of the efficiency of the fabric filter dust collector tested on June 4, 1980.

If you have any questions, please contact me.

Very truly yours,

Michael A. Palazzolo
Chemical Engineer

Enclosure

MAP:pkk

Enclosure

cc: Tom Nelson, Radian
Glen DeWolf, Radian

3024 Pickett Road / Durham, North Carolina 27705 / (919) 493-4574

Calculation of Uncontrolled Emissions from Board End-Sawing Operation During Emission Testing at the U.S. Gypsum Plant in Shoals, Indiana

Data and Assumptions

1. Cut ¼" off each side of board
2. Board size: ½" X 4' X 12'
3. Board weight: 1.72 pounds per square foot
4. Board line speed at 158 feet per minute
5. 10 percent of sawed volume is voids

Calculation of Weight Removed per Board

Volume of dust = 2 (½") 1/12 X (½") 1/12 X 4'

$$\text{Density of board} = 1.72 \text{ lb/ft}^2 \times \frac{48 \text{ ft}^2}{2 \text{ ft}^3}$$

$$= 41.3 \text{ lb/ft}^3$$

$$\text{Weight of cuttings per board} = 0.0069 \text{ ft}^3 \ (0.90) \ (41.3 \text{ lb/ft}^3)$$

$$= 0.256 \text{ lb/board}$$

Calculation of Uncontrolled Emissions

$$\text{Board rate} = \frac{158 \text{ ft/min}}{12 \text{ ft/board}} = 13.2 \frac{\text{boards}}{\text{min}}$$

Emission rate = (0.256 lb/board) 13.2 board/min) (60 min/hr)

= 203 lb/hr