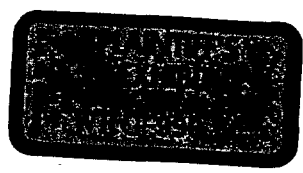


FEB 13 1984



GRACE

Construction Products Division

TO: R. Frohlich

DATE: February 10, 1984

FROM: J. C. Yang

SUBJECT: Air Cassette Samples  
from J. W. Wolter's  
Office

CC: S. H. Ahern  
R. J. Bettacchi  
H. C. Duecker  
R. C. Walsh  
J. W. Wolter  
File 1182

Three air cassette samples collected in J. W. Wolter's office were sent to Arthur D. Little for transmission electron microscopic evaluation of the respirable asbestos fiber content.

Dr. E. Peters' report is attached. The results indicated no evidence of any asbestos fibers.

*Julie C. Yang*  
Julie C. Yang

JCY/ph  
Attachment

10002140

---

 Arthur D. Little, Inc.

February 9, 1984

Dr. Julie Yang  
Manager, Research Technologies  
W.R. Grace & Company  
62 Whittemore Avenue  
Cambridge, MA 02140

Dear Julie:

In accordance with your letter of January 4, 1984, we have prepared and analysed the three submitted air cassette samples for the presence and concentration of asbestos by transmission electron microscopy. You also requested that we prepare fiber size distribution histograms.

#### PROCEDURE AND RESULTS

Evaluation samples were prepared in two ways: A. Jaffee wick - a portion of the sample was carbon coated after which small 2x2 mm pieces were incised and placed coated side down on 200 mesh electron microscope grids. The filter matter was removed by the Jaffee wick vapor solvent washing method, using acetone, B. Jaffee wick (NIOSH modified) - a 8 mm circle of the sample was taped to a glass slide with a gummed binder ring and briefly exposed to acetone vapors to collapse the membrane filter, producing a smooth, fused surface. The samples were then carbon coated, incised from the binder rings and placed particle side down on carbon-coated 200 mesh grids. The filter matter was then removed by Jaffee wick washing with acetone.

The prepared samples were individually analysed by transmission electron microscopy. Any particles that broadly met the characteristics of a fiber were sized and examined by selected area electron diffraction (SAED). About twenty random pore openings were examined for each sample.

The results for the two sets of analysis were the same. Referring to the Group B samples, the following results were obtained:

---

|             |                |            |           |
|-------------|----------------|------------|-----------|
| Brussels    | Madrid         | São Paulo  | Wiesbaden |
| Houston     | Paris          | Tokyo      |           |
| London      | Rio de Janeiro | Toronto    |           |
| Los Angeles | San Francisco  | Washington |           |

10002141

February 9, 1984

-2-

Dr. Julie Yang  
W.R. Grace & Company

| <u>Sample</u> | <u>Fibers</u>       |                                         | <u>Fiber Bundles</u> |   |
|---------------|---------------------|-----------------------------------------|----------------------|---|
|               | <u>No. Observed</u> | <u>Average Size (<math>\mu</math>m)</u> |                      |   |
|               |                     | <u>L</u>                                | <u>D</u>             |   |
| JW-1          | 6                   | 1.4                                     | 0.20                 | 4 |
| JW-2          | 6                   | 1.3                                     | 0.12                 | 7 |
| JW-3          | 5                   | 1.1                                     | 0.15                 | 2 |

Fiber bundles were actually clumps of material about 5  $\mu$ m in extent from which numerous (50-100) fibers stuck out, somewhat like a thistle. For every case, the fibers exhibited low contrast and failed to produce a selected area diffraction pattern. It is felt that the fibers (both individual and those in bundles) are organic in origin, probably cellulosic. There was no evidence whatsoever for chrysotile or any other form of asbestos fibers.

Please call me if you have any questions or require further information.

Very truly yours,



Edward T. Peters