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September 7, 1972

Dr. Bob Rolle
Johnson & Johnson
West Research
501 George Street
New Brunswick NJ 08903

Dear Dr. Rolle:

In compliance with a request from Dr. Goudie I have made X-Ray diffraction studies on the sample of talc product (shower to shower) which he sent. The objective of these studies was to determine the nature of a reported double X-Ray diffraction peaks in the vicinity of 7 to 7.5 angstroms. More specifically he wanted to determine if the reported data resulted from the occurrence of chrysotile. The enclosed X-Ray diffraction scan for the sample indicates the presence of talc and chlorite. Since the major peaks of chrysotile occur near the chlorite peaks, step scanning was used in order to better determine if any chrysotile peaks occur. The enclosed three charts show the results of these scans. I first scanned the vicinity of the second order chlorite peak (7.0-7.2 angstroms) since a major chrysotile peak occurs at about 7.4 angstroms. As may be seen on chart 1, a chlorite peak occurs at 7.1 angstroms. This peak contains a shoulder which occurs at about 7.22 angstroms. The position of this peak indicates that it is also a chlorite peak (the variety of chlorite called penninite contains a diffraction peak in this vicinity). Chrysotile should give a peak representing about 7.36 angstroms (about 12.0° 2θ). However, realizing that X-Ray diffraction equipment alignment and compositional variations are critical, the area around the first order chlorite peak (6.0 to 6.5° 2θ) was also step scanned. If the 7.22 angstrom peak (shown in chart 1) results from a second order chlorite peak then its first order peak should occur at about 14.4 angstroms. Chrysotile does not have a peak of these dimensions. As may be seen in chart 2, a major peak representing 14.1 angstroms occurs which is the first order peak of the major chlorite peak shown in chart 1 (at 7.1 angstroms). However, this peak also has a shoulder which occurs at about 14.47 angstroms. This indicates that the shoulder (7.22Å or 12.25° 2θ) shown in chart 1 is probably chlorite and not chrysotile.

In order to be more complete, the region in the vicinity of 3.7 to 3.5 angstroms (24° to 25.5° 2θ) was step scanned. As shown on chart 3 two peaks occur. One at 3.54 angstroms, which is the fourth order of the 14.1 angstrom chlorite peak. The other occurs at 3.61 Å which would be the fourth

order of the 14.47 Å peak which is also likely to be chlorite. No peak was observed in the vicinity of 3.66 angstroms where the ASTM file card shows the fourth order chrysotile peak.

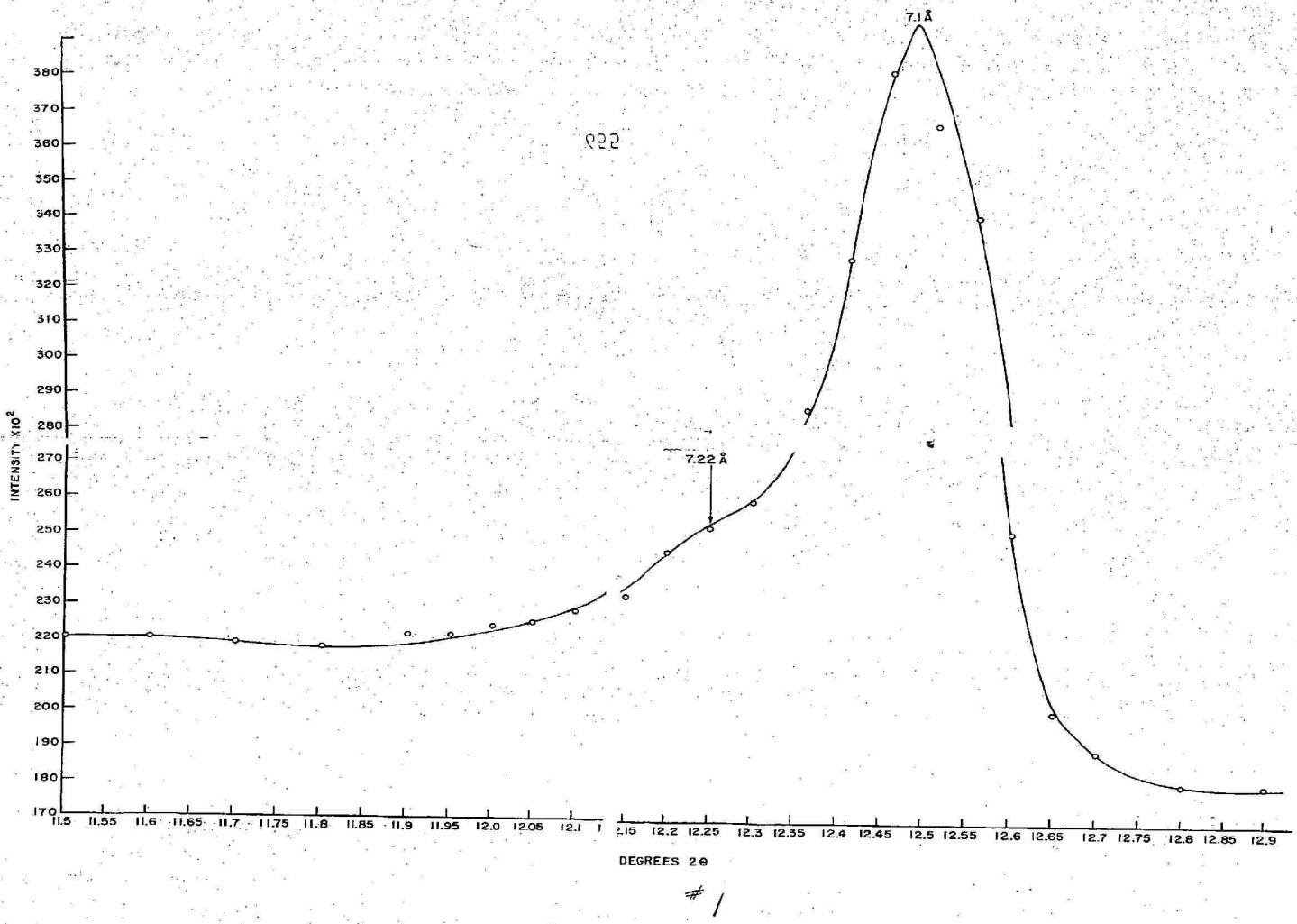
The above data does not indicate the presence of chrysotile.

Sincerely,

W. T. Caneer
Assistant Manager
Mining Division

WTC/psk

cc: Mr. Bill Ashton (without enclosures)
Dr. Goudie (with enclosures)



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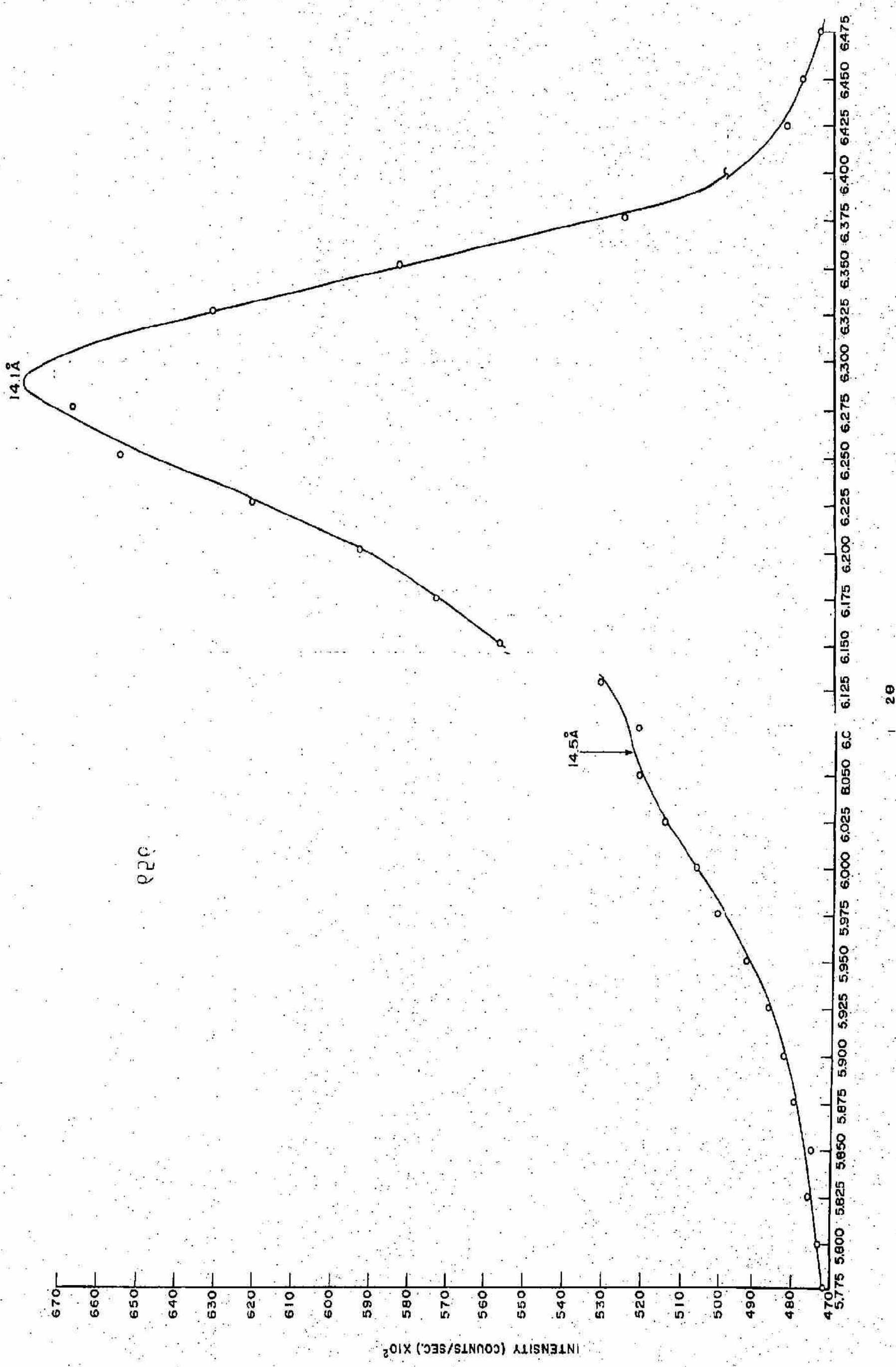

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