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April 1, 1959

A. C. Knight, M.D.
Acting Superintendent
Montana State Tuberculosis Sanitarium
RFD No. 1
Deer Lodge, Montana

Dear Dr. Knight:

There has been some delay in answering your letter of March 10, but we have been trying to gather together some definite information to send you.

The minerals which we process in our mill have been classified as follows:

1. Diopside, $\text{CaO} \cdot \text{MgO} \cdot 2\text{SiO}_2$
2. Augite, $\text{CaO} \cdot 3(\text{Fe}, \text{Mg})\text{O} \cdot \text{Al}_2\text{O}_3 \cdot 4\text{SiO}_3$
3. Vermiculite, $10(\text{Mg}, \text{Fe})\text{O} \cdot 4(\text{Al}, \text{Fe})_2\text{O}_3 \cdot 10\text{SiO}_3 \cdot 7\text{H}_2\text{O}$
4. Plagioclases (the group), $\text{Mg}_2\text{O} \cdot \text{Al}_2\text{O}_3 \cdot 6\text{SiO}_2$ to $\text{CaO} \cdot \text{Al}_2\text{O}_3 \cdot 2\text{SiO}_2$
5. Orthoclases (mainly microcline) $\text{K}_2\text{O} \cdot \text{Al}_2\text{O}_3 \cdot 6\text{SiO}_2$
6. Biotite $(\text{K}, \text{H})_2\text{O} \cdot (\text{Mg}, \text{Fe})\text{O} \cdot (\text{Al}, \text{Fe})_2\text{O}_3 \cdot 3\text{SiO}_2$
7. Actinolite, $\text{CaO} \cdot 3(\text{Mg}, \text{Fe})\text{O} \cdot 4\text{SiO}_2$
8. Tremolite, $2\text{CaO} \cdot 5\text{MgO} \cdot 8\text{SiO}_2 \cdot \text{H}_2\text{O}$
9. Traces of other minerals (magnetite, titanite, opatite, and quartz) have been detected at various times.

To answer your specific questions:

1. The dust in our mill has never been analyzed as such. It would probably be some combination of all the above minerals.
2. Items 7 and 8 are commonly asbestiform which is an extremely short fibre asbestos.

We hope that this information is of value to you in your study.

Very truly yours

ZONOLITE COMPANY

By:

E. D. Lovick

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