October 12, 1944

MEMORANDUM

Re: Dust Problems

Dr. Gardner paid an unexpected call on me this afternoon and we discussed several matters on which I made a few notes, as follows:

1. Diatomaceous Earth Experiments -

A room has not been available up to the present time for conducting the dust-settling experiments with the calcined material. However, the experiments will commence next Monday and will require several weeks, since Dr. Gardner desires to have them conducted on a series of days of high and low atmospheric humidity.

If the calcined dust behaves in the same manner as the natural earth, Dr. Gardner is inclined to believe it will be unnecessary to conduct further animal experiments with the calcined dust. This is because he feels that the failure of the natural earth to produce any marked results was due to the tendency of the material to flocculate and to be excluded from the lungs because of the moisture in the respiratory tract. However, if this material does not behave the same as the natural earth during the settling experiments, it will probably be desirable to conduct another series of animal experiments. In this event it may be necessary to supplement our original $5,000 contribution so as to cover the cost of the additional work.

2. Asbestos Experiments -

The samples taken by Mr. Fehnel at Manville have been analyzed for the purpose of determining (a) the total number of particles of all types; (b) the number of particles of fibre and the number of non-fibrous particles; and (c) the sizes of the particles of each type.

The samples to be taken by Mr. Fehnel at the Asbestos Factory will be analyzed in a similar manner at Saranac and a comparison obtained which Dr. Gardner hopes will throw some light on the relatively small number of films at Asbestos showing marked fibrosis in comparison with the films of employees at Manville.

Incidentally, Dr. Gardner indicated he thought a very good job of dust elimination had been done at Manville, since very few of the dust samples showed any very high concentrations.

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3. California State Industrial Accident Commission's Proposed Safety Orders relating to "Injurious Substances"-

I showed Dr. Gardner proposed Order No.4, which would require the following label upon any materials containing as high as 1% of asbestos or silica where they were to be used under conditions likely to give rise to dust:

"WARNING: This Material may give Rise to Poisonous or Injurious Dust. AVOID BREATHING IT."

Dr. Gardner's initial reaction was, like mine, to say "absurd". These dusts are not like mineral poisons and can only be called "poisonous" in a figurative sense which distorts the meaning of that word in its usually accepted sense. Mineral poisons produce an immediate harmful result, whereas dusts require exposure to exceedingly high concentrations over long periods of time. He thinks that the use of any such label as the proposed order would frighten a great many people and do absolutely no good. He stated that he would consider such a label not only useless but also misleading even if applied to a material containing 100% quartz, which is the worst of the non-metallic dusts.

When I suggested that perhaps in making our objections we suggest a reasonable compromise he stated that he could see no reason why any such label or one approximating it should be applied to materials containing these dusts in any percentage, to say nothing of 1%. When I told him that it would probably call for a label on asbestos-cement sheets, which are sometimes sawed with the resultant production of a little dust, he stated that this example pointed up the absurdity of the proposal.

If any such Order should issue, however, silica, slate, talc and asbestos should certainly not be lumped together with the other substances mentioned under proposed Order #4, some of which are true poisons. He stated that there was no reason for including them along with true poisons such as chromic acid, lead and some of the others referred to in Order No.4. He further pointed out that since the "injury" produced by asbestos dust is a mechanical irritation, with no chemical reaction (as occurs in the case of silica) it could not possibly be called a poison. Talc he considers non-injurious under any circumstances and I believe he has conducted experiments and made surveys upon which he bases this opinion.

Vandiver Brown.