

August 2, 1948

Dr. J. M. McDonald,
State Board of Health,
1217 Pearl Street,
Jacksonville, Florida.

Dear Doctor McDonald:

I have just had word that there is to be a meeting of the Florida Industrial Accident Commission in connection with the cause of death of [REDACTED], an employee of Tank Cleaners, Incorporated, in Jacksonville, Florida, on August 10, 1948. It has occurred to me that the evidence on which the death of this man might legally be established may seem scanty, and therefore I write to give you my opinion and to cite, very briefly, some of the evidence on which it is based. Because of certain peculiarities in the case I had some initial skepticism as to the cause of death, but as the facts developed there is now no occasion for any doubt. [REDACTED] died unquestionably as the result, primarily, of a massive respiratory exposure to the vapors of tetraethyl lead. We have undertaken to establish just which one of the tanks which were entered for cleaning was responsible for the deadly conditions of lead exposure. This has not been done as yet to our complete satisfaction, but the evidence of the presence of tetraethyl lead in the sludge of several of the tanks is unquestionable.

Our diagnosis is based on the history of exposure, the evidence of tetraethyl lead in the sludge, the clinical course of disease, the non-fatal episode of intoxication in an associate, and the evidence of high concentrations of lead in the urine of the three men who suffered exposure. The lead concentration in the urine of [REDACTED] is of the order of magnitude which we have found in association with fatal cases of lead intoxication. (For your information I should point out that the lead concentration in the blood, following serious exposure to tetraethyl lead is usually quite low. Something in the metabolism of tetraethyl lead results in the failure of the absorption of the lead compound into the red blood corpuscles, and therefore the lead concentration in the blood is only slightly elevated, and in cases of short duration it may not be elevated at all. In the instance of [REDACTED] the lead concentration found in the blood post-mortem was 0.04.) The urinary lead concentration in the case of [REDACTED] was 0.56 mg. per liter. (The lead concentration in the urine of his associates in this work, who were much less seriously exposed, were respectively 1.8 mg. per liter at the outset, and 0.065 mg. per liter six days later; 0.46 initially.) The foregoing facts establish exposure without any question.

We have obtained the tissues of [REDACTED] for analysis, and in due course we shall have the analytical results. Unfortunately, we have been swamped with analytical work at this, our vacation period, and therefore the results are not available at this writing. There is no question

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in our mind that the diagnosis of fatal occupational lead exposure is justified in the case of [REDACTED]. By the same token the episode of illness of [REDACTED] can be accepted as having been a characteristic case of tetraethyl lead intoxication. Fortunately, this man's exposure, while serious, was brief, and therefore, with adequate treatment, he survived.

I trust that this information will be satisfactory for your purposes. It can be substantiated by documentary evidence if need be, and it will be supported by further proof when our work on the case has been completed. If we can be of any service to you in this connection, please do not hesitate to call upon us.

Cordially yours,

Robert A. Kehoe, M. D.

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P.S. The results are coming through on the tissues of [REDACTED]. I have two only, which, because of their size and composition, came through first. The lead concentration in the muscle (ordinary striate muscle) was 0.34 mg. per 100 grams, which is remarkably high for this tissue. The concentration in the bile was 2 mg. per 100 grams. From this one may assume that the lead concentration in the liver will be very high indeed. We believe, from the rapid course of this illness, that this was one of the more severe cases of exposure.

R.A.K.

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