

August 8, 1960

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Avon 1-2568

Dr. L. E. Curtis, Medical Director
Standard Oil Company of California
225 Bush Street
San Francisco 20, California

Dear Curt:

Thanks for your letter of August 4, and for its information concerning certain men. With respect to your other comments and questions, let me point out first, that I was out of the country from June 11 to July 12, and then out of town (in New York) from July 23 through July 29. I have had no chance, therefore, to inspect the results obtained until the past few days. The analytical work has proceeded, meanwhile, and the early results, from my point of vision, were so satisfactory that I only glanced at the last two reports. An occasional result on a sample of urine (██████████ in the report dated 6-24-60, and ██████████ as referred to by yourself in the report of 7-29-60) has been well above the general level of the other finding, or even (in the one instance of ██████████) above the extreme upper normal limit.

I do not believe there is any point in repeating at once the collection of a sample of urine that has been lost for any reason, or of a check sample following one that has given a high result, unless the result so obtained is clearly within the dangerous range. I shall be able to watch the results as they come through hereafter, and will notify you if anything further is required of you. In explanation of my statement that the checking of the results obtained thus far on the samples of urine is unnecessary, let me point out that, while you and I have every reason to be concerned about the status of any individual in this group who is, or may be, on the verge of trouble, no such a situation has developed, so far as analytical evidence from the urine is concerned.

The case of ██████████ is an example of this type, in that the urinary concentration of lead in a sample of modest volume was relatively high. The significance of this result as a threat of danger is, however, negligible. His blood lead is low, so that he cannot have absorbed any large quantity of inorganic lead recently. Furthermore, he can hardly, in this length of time, have absorbed a dangerous quantity of tetramethyl

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lead unless he has had some chance for contact with the concentrated material. On the other hand, a man who excretes a sample of urine containing as low a concentration of lead as 0.07 mg. per liter, can, through sweating and limitation of water intake, excrete another sample of three times that concentration in the course of the same day. Unless, therefore, there is reason for concern (as in the manufacturing operations, where one must follow up every significant deviation as promptly as possible, one simply waits for the next round of samples, to follow the trend. Since in this survey, you have the responsibility for the men, I suggest that you repeat the sampling of the urine whenever you feel it desirable to do so. I will suggest such a procedure to you when I, independently, think it desirable, for statistical or other reasons. It would satisfy you, I think, to resample Rios, and if you think it worth while, you might check the matter thoroughly by obtaining two samples within the same day - one in the morning and the other in the afternoon (or early or late in the 8-hour shift).

With respect to [REDACTED], the situation is different, and I hasten to give you my view of it, after having it brought to my attention by your letter. If the results on the blood can be believed (unfortunately the two results were obtained by the analysis of only one sample, which may have been contaminated), this man has sustained some comparatively recent exposure to inorganic lead. (The high result in the blood is not an expression of the absorption of tetraethyl or tetramethyl lead, while the low value in the urine is almost equally as strong evidence against the likelihood of significant exposure to organic lead. The results are fully compatible with exposure (almost certainly occupational) to inorganic lead. This man, therefore, should be resampled, and the nature of the work he has been (or may still be) doing should be carefully investigated in his own interest. This level of lead concentration in the blood is such that symptoms of intoxication may develop at any time, and while they would be expected to be mild, they might be more than usually severe. It is possible that this man has not been long in your Company's employ, and that he came to you from some occupation in which he was exposed hazardously to lead. But it is possible that his present work (at home or elsewhere, or even in your Company's employ) involves a significant degree of exposure; or his home conditions may involve significant exposure, although this is unusual. In any case, he is in danger, unless this sample of blood was contaminated, and his situation should be looked into carefully - carefully on his own behalf, and carefully to avoid any complications arising out of this new situation and its investigation. I would first investigate his status very carefully, and then resample his blood

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and urine, and then wait for further analytical results. If his exposure to lead was incurred in his former employment, you need not be unduly worried. I have never seen lead poisoning develop after the exposure had been terminated. If he is not incurring exposure to inorganic lead, such exposure should be discontinued at once.

Sincerely yours,

Robert A. Kehoe, M.D.

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P.S. I am open to serious criticism that I had not picked up this situation at once, but the other reports have been so innocuous, that they encouraged me, while deeply involved in catching up with my work, to delay my examination of the later reports. I'll not fail you hereafter.

R.A.K.

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