

November 10, 1931

Mr. C. A. Riley,  
Insurance Department,  
Ashland Refining Co.,  
Ashland, Ky.

Dear Sir:

I have your letter of November 6 with its enclosures concerning one [REDACTED] who claims to have been poisoned in connection with his work at the refinery.

I do not know whether any further information is available beyond that contained in the enclosures in the letter. However, the following facts concerning the contacts that my assistants have had with Mr. [REDACTED] are pertinent.

Mr. [REDACTED] was accepted for work in the handling of ETHYL fluid, on October 11, 1930. At that time physical examination done by Dr. Kitzmiller, indicated that there was no evidence of disease processes. Examination of men engaged in this work is made twice annually, but [REDACTED] was absent on a vacation in July 1931, and was not examined. Thus our record does not show any evidence of any illness at any time in the case of this employee.

Under conditions of normal operation of the plants at which ETHYL fluid is mixed with gasoline, there is very little opportunity for exposure to lead. Mixing is not carried out every day, but at intervals of one month to one week, so that any slight exposure which may be brought about occurs at such intervals that there is no appreciable danger. Our observations on these men over a period of years have indicated no appreciable exposure to lead in this work. There are really only two situations in which any danger is present.

(1) At the time the drums are opened there may be an escape of vapor from the drums, containing fairly high concentration of lead. This danger is obviated by having the men wear masks at the time the drums are opened and until the Fluid begins to be sucked into the mixing system. From this time on the drum is under a negative pressure, and there is no escape of fume. The masks take up the vapors quantitatively, so that in doing this in this way the operator experiences no opportunity of lead absorption. (2) In the event of any spill of Fluid the operator may receive skin contact with a lead compound which is readily absorbed through the skin. At the same time, if the Fluid is spilled over the system at any point there will be varying quantities of vapor in the air about it, thus giving rise to the opportunity of inhaling the vapors of the lead compound.

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It should be clearly understood that after the lead is mixed with gasoline, there is no chance of inhaling the vapors of the lead from the gasoline except as the gasoline is completely evaporated. That is to say, that unless the gasoline is spilled, in which case all the gasoline and all of the fluid is permitted to evaporate, there is little or no chance for exposure to lead. The reason for this is that the gasoline is so much more volatile than the lead, that no lead is found in vapors arising from ordinary gasoline containing lead in commercial quantities. In fact, one must evaporate 15 to 20% of the gasoline before any appreciable quantity of lead begins to come from the vapor. Thus the inhalation of lead from a tank of Ethyl Gasoline is impossible. Furthermore, there is no evidence that in the low concentration in which lead occurs in Ethyl Gasoline, that there is any absorption of lead through the skin out of the gasoline.

The above facts dispose of this aspect of Mr. [REDACTED] claim. In so far as the vapors in the washroom are concerned, I think it may be stated with reasonable safety that these vapors at no time contain appreciable quantities of lead. The equipments which are used in mixing Ethyl Gasoline are under the continual inspection of representatives of the Ethyl Gasoline Corporation. The equipment is kept clean, and no spills of Fluid are permitted at any time to remain, but are carefully washed up and disposed of. Thus the opportunity to be exposed to lead from this source is definitely negligible.

Any symptoms or signs which might develop as a consequence of exposure to lead in this work would be exactly like those arising in the course of other lead trades. There is no specific effect upon an illness, and there are no effects which are in any way different than the usual signs and symptoms of lead poisoning. Thus the symptoms which Mr. [REDACTED] describes as his beginning symptoms are quite obviously unrelated to lead poisoning. His statement that he had "weak lungs" is entirely without meaning. The suspicion is raised, of course, that the man may have a bronchitis, or an asthmatic condition, or indeed that he may have early tuberculosis. In any case, a careful physical examination should be done in order to find out what may really be the matter with him. It would appear from the examinations of the several doctors mentioned in the statement, that Mr. [REDACTED] has a tuberculous involvement of the lungs. In any case, there is no reason whatever for associating his illness with his inhalation of ETHYL Fluid or Ethyl Gasoline.

I do not know that the above will contribute any very important information in this case. However, I should be

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glad to be of any assistance possible, and if I can give any further information I shall be glad to do so. It will probably be a matter of some interest to know that since 1925 some hundreds of men have been engaged in this work under our supervision, and that there has not been a case of lead poisoning in the entire group. This is undoubtedly due to the fact that the actual exposure to lead under the conditions of this work is practically negligible due to the character of the equipment used.

Very truly yours,

Robt. A. Kehoe, M. D.

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