

*Louis Gilbert Arndt*

June 22, 1948

Dr. E. P. Luongo, Medical Director,  
General Petroleum Corporation,  
108 West Second Street,  
Los Angeles, California. (12)

Dear Doctor Luongo:

Your letter of May 26 has gone without reply thus far because of my absence from my office on several necessary trips. However, I am very glad to reply as fully as I can to your letter concerning the hazards associated with the cleaning of mobile equipment.

I think that our difficulty in dealing with this problem is due to a failure to differentiate clearly between the hazards related to the handling of gasoline of any kind, and those concerned with the hazards of dealing with leaded gasoline. This difficulty has been with us throughout the years, and I have no hope that we shall be able to eliminate it completely. It is important, however, to recognize that these are two different problems, and that they have to be dealt with in separate terms. This distinction is not made clear even in Dr. Johnstone's report. However, I have seen Dr. Johnstone since this report was made, and on discussing this with him, I find that he is talking about the hazard of dealing with the gasoline vapors and not with the lead hazard. In any case, let me cite the evidence that relates to the lead hazard.

Mr. Chenault of Ethyl Corporation has been entirely right in the position that he has taken with reference to the lead hazard, and your Mr. McKenzie is right, I believe, in the position he has taken in accepting the opinion expressed by Mr. Chenault. A very careful study has been made of the deposits that may be found in gasoline tank cars in the United States. So long as the current practices are continued, and, more importantly, so long as the lead concentration in leaded gasoline is maintained strictly within present limits, we need have no fear that these deposits will have any very great significance. Unquestionably the gasoline vapors arising from gasoline tank cars will contain appreciable quantities of lead. However, the lead concentration is so low that there is no risk attached to its inhalation, provided the gasoline vapors are diluted by ventilation to the point where they give rise to no symptoms. This means, of course, that the individual who goes into such a tank car needs protection from gasoline vapors. This is so obvious as to be a truism, and therefore it is common practice in the petroleum industry, and, in our opinion, wise practice, to require that no man is to enter a gasoline tank car at any time, without the protection of an airline mask. If this simple rule were followed uniformly throughout the industry, a considerable number of accidents and fatalities would be prevented. After a gasoline tank car has been emptied, and after it has been so thoroughly aired out and dried out that there is no gasoline vapor in it, it will be found that there is no very significant quantity of lead remaining. Under these circumstances

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only the minutest traces of tetraethyl lead could be present, and in our experience these traces are too small to be detected by the careful examination of the scale. However, the scale does contain a low concentration of decomposition products of tetraethyl lead, and these may be suspended in the air by any operation which is designed to remove the scale from sides or ends of the tank. Moreover, if a repairman undertakes to do hot operations inside the tank car, some small quantities of lead will be volatilized during this operation, just as a deposit of paint will be volatilized by a welding or flame-cutting operation. Actually the quantities of lead in the scale are very small, and therefore the average tank car which has been swept out from time to time will yield very little material containing lead. We have never found sludge, of the kind that is found in gasoline storage tanks, within gasoline tank cars, and we feel quite certain that this is not a problem. If we had any reason to doubt this, we would certainly have advised the petroleum industry of our findings.

In the cleaning of tank cars that have transported leaded gasoline there is no reason whatever for the use of protective clothing against lead absorption, since there is no hazard of any such absorption. Therefore, there is no point in using any protective measures with respect to clothing that go beyond those required in relation to ordinary gasoline. In short you should set up the same regimen for cleaning gasoline tank cars in leaded gasoline service, as are those employed in cleaning tank cars in ordinary gasoline service.

I do agree with Dr. Johnstone in feeling that it is wise, by and large, to require the use of airline masks for men who enter gasoline tank cars. There may be times when such a procedure is wholly unnecessary. Unfortunately the judgment of the men who have to perform this work cannot be trusted in this regard, and therefore if this regulation is relaxed from time to time it is very likely that someone will take a chance and enter a car without a mask when he should be so equipped.

Cordially yours,

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Robert A. Kehoe, M. D.

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C.C.: Dr. Rutherford Johnstone

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