July 9, 1957

Dr. D. W. Caldwell, Medical Director
Esso Research and Engineering Company
P.O. Box 45
Linden, New Jersey

Dear Doctor Caldwell:

Doctor Karl V. Kitzmiller has called my attention to your somewhat sharp letter of June 25 concerning the examination of a film of the blood of one of your Company's employees, Mr. Floyd Butler. I had occasion also, yesterday, when I was in New York, to see Dr. Emil C. Beyer, with whom Dr. Thomas R. Maloney is associated in his work for Ethyl Corporation. Since there seems to be some misunderstanding in your mind and that of your associate, Dr. W. Hausheer, with respect to both our examining procedures and our readiness to supply information from that source, I have thought it wise to write to you. My responsibility in the matter is a direct one, and my acquaintance with you suggests that we should not be at odds with each other in a matter of this type.

First let me say that members of our staff make every effort to cooperate with the physicians in your Company and other oil companies, out of primary interest in the welfare of the men examined as well as in the professional amenities.

So far as blood examinations are concerned, however, these consist of only two procedures in field examinations, namely, the determination of the hemoglobin content of the blood and the examination of a stained film by a well-standardized, semi-quantitative method for basophilic "stippling" of the erythrocytes. A differential leucocyte count is not carried out on such a film because of the specific method of staining, and also because, in most instances, this is not believed to be essential for our purposes. The films are not kept, but the result of the count is recorded on the chart of the patient. For the sake of uniformity, the counts are all done by one well trained person in this Laboratory, and reported to the physician who sent in the films. That is why Dr. Kitzmiller did not have the result.

If it is believed that further hematological (or other) examinations are indicated, the person concerned is referred to the refinery physician or to his personal physician.

I should point out to you, for your own information, that the determination of

the "stippling" is done partly in deference to the high but undue regard in which this test is held (with respect to lead absorption) in medical and medico-legal circles. Our failure to do this would result in serious criticism at times, and moreover, if someone else were to make such observations (this has occurred from time to time) and were to misinterpret them, we would find ourselves at a disadvantage. The fact is that there are no microscopic changes of any kind in the blood in response to the absorption of tetraethyl lead, but this fact is not generally known to physicians, and we have to establish the facts with respect to stippling among the mixing plant personnel in order to avoid ambiguous situations. We do not attempt to establish the entire blood picture, however, because of the practical difficulties which present themselves to our peripatetic physicians. It could be argued that this should be done, but it is fair to say that the regimen of the examinations established years ago has been fraught with very few serious difficulties.

I should, perhaps, make a few additional comments. Our purpose in carrying out the examinations of mixing plant personnel is to maintain a regimen of preventive medicine in relation to a specific hazard. We have never had a case of tetraethyl lead intoxication among the mixing personnel in this country. Indeed, several systematic investigations of the mixing personnel, made somewhat at random, have demonstrated that the absorption of tetraethyl lead among these men is negligible. This is as it should be, if the precautions advised and indoctrinated into the men are followed. Our principal purpose is to maintain this indoctrination. In addition, however, by a process of appropriate selection, we undertake to avoid the likelihood of the occurrence of disease that simulates tetraethyl lead poisoning. In this we have been generally successful, and it may interest you to know that there has been only one claim made in the United States of tetraethyl lead poisoning among the personnel of mixing plants. This one was obviously false and was the result of a grudge, which arose when the foreman of a mixing plant forcibly ejected one of the members of the mixing personnel. The claim was denied by the referee in the compensation case that arose out of this altercation.

We do, of course, pick up cases of illness that require attention, provided either through the physicians of the oil companies, or when no such intermediary is available (as was the case fairly generally in 1926 when this regimen of medical supervision was initiated), by private physicians in the community. Our examination are, obviously, limited in scope because of the necessity of carrying the armamentarian of the examinations around from place to place. This, however, has not been an insurmountable obstacle to the performance of a reasonably good physical examination. There are limitations from the aspect of the laboratory procedures, but I do not feel that we need apologize for the quality of the examinations that have been made. I do not hesitate to

say, however, that our primary concern has been to do a good job of preventive medicine, to keep alive in the men an awareness of the hazards of the job, and to keep them alert in their own protection, in the complete assurance that if they abide by the detailed instruction provided for their guidance, they will be secure from the specific dangers.

I understand from my conversation with Dr. Beyer yesterday, that Mr. Butler is the victim of some blood dyscrasia, presumably a form of leukemia. This unfortunately would not be picked up or even suspected, early in its development, on the basis of our type of blood examination. It might well be suspected in its later manifestations, although it might be missed completely. This, of course, is the type of problem which presents itself in the course of any type of examination which is not utterly comprehensive. We have recognized this over the years, as do all conscientious physicians who carry out examinations of a routine or prescribed type for specific purposes. There is, I fear, no answer to this problem. One has to design a procedure of examination in relation either to a specific problem, or on some general scheme based upon the probabilities. Unusual diseases, or diseases which present themselves in unusual patterns, are always likely to be missed in a general survey. This is one of the difficulties of all periodic examinations, and one which, I dare say, has given all of us in the field of occupational medicine some severe twinges from time to time.

If there is anything which we can do to be of assistance to you or to Mr. Butler, I trust that you will let me know. At the moment there does not seem to be such a possibility.

Sincerely yours,

Robert A. Kehoe, M. D.

RAK ef

Dictated but not read.

C.C.: Dr. K. V. Kitzmiller
Dr. Emil C. Beyer