

ETHYL GASOLINE CORPORATION

CHRYSLER BUILDING  
405 LEXINGTON AVENUE

NEW YORK

10-10-41

Dear Dr. Kehoe: —

I mentioned having  
written this short summary of  
tank cleaning to Bill Machle.

While it seems to have no  
immediate virtue from any angle  
Bill seemed to think that you  
and he might like to read it  
over.

Very best regards to you  
and to all my friends in  
the laboratory.

Cordially,

Alfred Jones.



## THE TANK CLEANING PROBLEM

Since the growth to major proportions of the tank cleaning inspection activity, many unforeseen angles have presented themselves. The activity has become far larger than was at first anticipated. It has encroached, in many cases, on time which field representatives might have been giving to their normal sales projects. Moreover, it has become an extremely expensive affair.

No one who is familiar with the reasons for the program and who appreciates the tremendous value to our company of this preventive effort will begrudge for a moment either the time or the money. Moreover, there are few of us who question the need for indefinite continuation of this work with unrelaxed vigilance. We should, however, examine periodically the current status of the program, review what it has accomplished, and determine what its future course is to be and what improvements might be made from efficiency and economy standpoints.

At present the tank cleaning inspection work is being carried on substantially in the same way in which it was started. This consists of educational and missionary efforts among notification and authority men, coupled with actual inspection throughout each cleaning. The reports covering the various calls and inspections are reviewed at the Division headquarters and are carefully studied and coordinated in the New York Office. This method has proven quite satisfactory and is entirely thorough and efficient.

A network of contacts has been built up and hundreds of friendly and cooperative relations with our customer companies have been established. As a result the number of tank cleanings inspected is nearly the same as the number occurring. Our efforts have brought the leaded

gasoline tank hazard forcibly to the attention of gasoline suppliers.

Conformance to our suggestions has inevitably caused a tremendous improvement in gasoline tank cleaning technique throughout the industry. Moreover, our campaign has resulted in the purchase and proper maintenance of suitable tank cleaning safety equipment by nearly all persons and firms engaged in this work. Safety meetings and personal calls have served to improve the safety-mindedness of oil company executives generally.

The cost of this work to the Ethyl Gasoline Corporation has been very large, not only in money but also in man-hours. Had the expenditure been twice or three times as large, it would still have been thoroughly justified in the light of the really remarkable results obtained. We should now consider the feasibility of utilizing the accomplishments of the campaign as a possible means of reducing the expenditure without jeopardizing in any way the continued safety of men engaged in tank cleaning work.

It has been pointed out that the tank cleaning campaign has created an increased safety-mindedness among gasoline suppliers, that it has created an understanding of the scope and character of the lead hazard in tank cleaning, that it has been the means of improving gasoline tank cleaning technique generally, and that it has been instrumental in obtaining proper and well cared for safety equipment for most tank cleaning crews. These beneficial improvements are more apt to be permanent in the organizations of our large customers, commonly referred to as the "major" companies. It is also likely that these companies carry out the majority of tank cleaning work, because their appropriations for care and maintenance of equipment are generally large. Also the ownership and control of a very large percentage of the country's gasoline storage facilities is vested in this so-called major group.

Many of the large companies have highly organized safety de-

16  
partments under the leadership of able and conscientious men. Some of them are implemented with considerable authority and are empowered to exercise rigid control over the methods used for carrying out hazardous work. If properly educated on the subject of the lead hazard in tank cleaning, and if properly composed codes of procedure were adopted by them, such companies would be perfectly capable of preventing the occurrence of accidents resulting from residual lead in gasoline storage tanks.

One of the reasons for the initial institution of our present method of procedure was that the potentiality of the lead hazard, and in many cases its very existence, was not recognized by the owners of gasoline storage equipment. Until the character of the hazard and the means of combatting and eliminating it could be analysed, and a thorough knowledge circulated throughout the industry, it naturally fell to the Ethyl Gasoline Corporation, for humanitarian reasons as well as for the protection of its own good name, to undertake whatever steps were needed to prevent the occurrence and recurrence of accidents from this source. When our tank cleaning activity was initiated few, if any, oil company safety orders, and probably no semi-public codes (such as that issued by the API) recognized the existence of a hazard from residual lead in the cleaning of gasoline storage tanks. Sporadic cases of well defined lead intoxication occurred and would probably have multiplied rapidly with the increase in leaded gasoline gallonage had we not taken immediate and drastic action.

KE 0022367  
The present situation, however, is a very different one. A majority of those oil companies which make use of a formal safety code have incorporated therein adequate instruction for protection against lead hazard. Those which have not yet revised their codes could probably be persuaded to do so. A new API code (shortly to be issued) will be so composed as to cover the lead danger thoroughly. Our own tank cleaning field

cooperation. Certain companies would probably improve more rapidly if made wholly responsible for the proper protection of their employees, and thus were forced to depend to a lesser extent upon our field observers and on Ethyl Gasoline Corporation equipment.

It has been mentioned above that the rather startling increase in tank cleaning notifications in many of our Divisions has made it necessary to impress many sales representatives into this work, often for extended periods. Thus the tank cleaning work has prevented the initiation of projects that would have required the uninterrupted attention of field men. Up to now this sort of thing has been an unfortunate necessity. If it is possible to work out some means of simplifying our share of the problem, the Corporation will benefit by being able to re-direct the efforts of the field staff into normal channels.

Another problem in connection with the tank cleaning work, particularly that portion of it which has to do with the actual observation and inspection work on the job itself, must be recognized. In spite of the unquestioned importance of field inspection and the occasional need for prompt action and sound judgement, the bulk of such work is monotonous to a degree, and frequently demands little or nothing of the inspector except his presence. Such work rapidly becomes irksome to a technically trained man accustomed to action and to work demanding the use of his knowledge and skill. There are indications that this difficulty is already making itself felt in some quarters, and we certainly should do anything we can to prevent its growth to large proportions in the next few years. Should this happen, and should we find ourselves with a group of unhappy and dissatisfied people on our staff, it would be too late to do anything effective about it. Moreover, it would appear to be poor economy to use comparatively well paid men, many of them with university training, for work of this sort indefinitely, if any satisfactory alternate could be

What, then, can be done? A serious hazard in the cleaning of tanks that have been used for the blending or storage of gasoline treated with tetraethyl lead will exist so long as such gasoline is manufactured and distributed. The seasonal need to change the product in tanks at bulk terminals, the normal accumulation of residue, and the periodic need for repair and inspection will always make it necessary for men to enter tanks from time to time. Much work has been done on the development of methods and equipment designed to make possible the cleaning of tanks, particularly the smaller sizes, without need for the actual entrance of men. Unfortunately much still remains to be done before a thoroughly satisfactory means is developed. Excellent methods of mechanical ventilation have been developed in the last several years. But, while such devices shorten tank cleaning jobs and lessen the danger, they do not and cannot eliminate the need for men to enter tanks occasionally.

There is, however, one method that might serve to lessen the Corporation's tank cleaning investment and responsibility. That is by taking advantage of the educational work that has been done and of the accompanying improvement in technique and equipment, by turning over the actual responsibility of field inspection and supervision to certain "major" companies that are capable of handling it and that can be depended upon to carry on adequately and conscientiously. It is not claimed that such a transition can be made suddenly or even within any specified period. A foundation of mutual understanding and agreement would have to be established. Any company with which the responsibility was to be shared would need to have not only a suitable code but also an organization so arranged as to implement the code through well trained field inspectors and tank cleaning crews. Much preparatory ground work would have to be done by our safety staff in collaboration with that of the customer.

It is believed that such a program could be started with a series

of personal calls by one of our N.Y. staff men on a selected group of our larger customers. All phases of the problem should be discussed and an expression of opinion solicited as to whether the customer would be willing to assume the burden. If he would, all codes and safety orders should be carefully studied to determine their adequacy. A delegation of responsibility should be made and suitable training given. Finally a system of records should be placed in use so that proper and complete tank histories would be maintained.

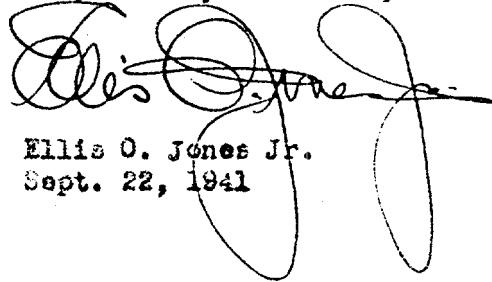
It is not the intention of this suggestion to stop all tank cleaning communication between our company and any customer. On the contrary, frequent visits should be made on those persons in the customer company to whom responsibility for supervision and maintenance of records has been delegated. Actually the only change would consist in a shifting of the field inspection from our organization to that of the customer. An understanding would have to exist to the effect that any relaxation of vigilance on the part of the customer would make necessary a reinstatement of the present method. For the time being, at least, we should continue our present service unchanged for any customer who specifically requests it.

If these ideas are thought to be at all meritorious, it is suggested that the details be worked out and a trial made with one large customer such as The Texas Company or one of the "Standard" groups.

There are necessarily many small refiners and contractors who have organizations so loosely knit, or who have no safety personnel whatever, that we would never wish to give the responsibility for carrying on without notification and observation by a member of our own staff. It is further recognized that no such policy as that outlined herein should or will contribute to the lessening or cessation of this Corporation's interest or vigilance in connection with the cleaning of leaded gasoline storage tanks. It has as its goal merely such savings in money and man-hours as may properly

be effected as a logical result of the very large investment in, and the excellent results of, our campaign so far.

Respectfully submitted,

A large, stylized handwritten signature in dark ink, likely belonging to Ellis O. Jones Jr. The signature is written over the typed name and date.

Ellis O. Jones Jr.  
Sept. 22, 1941

RE 0022971