

Handwritten: 2/27/56

February 27, 1956.

Mr. J. F. Daley, General Manager,
Organic Chemicals Department,
E. I. du Pont de Nemours & Company, Inc.,
Wilmington 98, Delaware.

Dear Mr. Daley:

Thank you for your letter of February 20 with respect to statements made by Mr. Chandler Phillips on the subject of tetraethyl lead in the Los Angeles smog situation.

We have been deeply concerned for some time over the statements which have been made by Mr. Phillips and others and by the general ignorance which seems to prevail as to the facts about tetraethyl lead.

Because of our concern we had asked Dr. Kehoe to go to Los Angeles and investigate the situation. I know that he plans to be there this week. When he returns I shall tell him of your letter and shall suggest that he get in touch with Dr. Rankin. I think we may look to these professional men to handle whatever problems of medical fact may be involved.

Thank you for the file enclosed with your letter. I am returning it herewith. I have made a copy for Dr. Kehoe's use.

Sincerely,

Encl.
ELS/m

bcc: Mr. J. E. Boudreau.

Dr. Robert A. Kehoe (Cincinnati).

Mr. F. P. Warne.

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E. I. DU PONT DE NEMOURS & COMPANY
INCORPORATED

612 SOUTH FLOWER STREET
LOS ANGELES 17, CALIFORNIA

January 4, 1956

ORGANIC CHEMICALS DEPARTMENT
PETROLEUM CHEMICALS DIVISION

MEMORANDUM TO THE FILE:

AIR POLLUTION - CHANDLER PHILLIPS

George L. Tyler and the writer attended a luncheon meeting of the Montrose-LaCrescenta Kiwanis Club at the Oakmont Country Club in North Glendale on December 27, 1955. We were able to attend this meeting through the cooperation of Mr. Don Sweeney of the Western Oil & Gas Association as he had arranged with a Mr. Lloyd Chambers, Chairman of the Kiwanis Club, for us to attend in order that we could hear the remarks of Mr. Chandler Phillips who was addressing the luncheon group that day. Approximately forty persons were present at this luncheon and listed below is the chronological sequence of the events that took place:

All guests of Kiwanians were introduced by the individual who normally performs this function, with the exception of George Tyler and the writer who were introduced to the assembly by Mr. Chambers, who explained that we represented the Du Pont Company and that we were there to hear Chandler Phillips. Furthermore, that Mr. Phillips had been informed of our desire to attend and he had given his approval for us to do so. Mr. Phillips was then introduced to the audience as an "engineer" with a background of industrial experience and employment with a major oil company--Shell--in this area; that he was fully qualified to speak on the subject of smog and that it was hoped the audience would enjoy the program. Thereupon Mr. Phillips arose, acknowledged his introduction and stated that his objective was to prove beyond a reasonable doubt that the petroleum industry, namely the refineries in the Los Angeles Basin, was primarily the cause of smog. Mr. Phillips then introduced Senator "Smoghorn", a caricature who was not identified. He rushed into the room, wearing a gas mask and he spoke into the microphone, making sounds that were mostly incoherent. He did shout several times through his mask that smog had to go. Mr. Phillips thereupon stated gasolines produced up to 1941 in L. A. Area were far superior in cleanliness to the gasolines produced today. That according to a major oil company--Gulf--every gallon of gasoline contains a teacup of dirty, burning heavy ends. To illustrate this point, he set up three burners, each containing a different gasoline, on the podium. One

gasoline was typical of prewar--that is, prior to 1941. Another gasoline was representative of unleaded, straight run, high octane gasoline. The third gasoline was representative of the dirty, burning, highly cracked gasoline being produced in the Los Angeles Area today. He then proceeded to light the wicks on the three burners and he held a plate over the burner containing the gasoline being produced today in the Los Angeles Basin. Immediately, the plate smoked up and was covered with a sooty deposit. Mr. Phillips said this proved beyond a doubt that the gasoline being produced and used in the Los Angeles Area today is an extremely dirty gasoline and thereby a main factor in the smog production. It is important to note here that Mr. Phillips did not hold the plate over the other two burners. Mr. Phillips said the old process of making gasoline whereby acid was used to remove the components which caused dirty burning was abandoned during the war and that the refineries, urged by a profit motive, are now using catalytic crackers to produce more gasoline of a higher octane but unfortunately, with heavy ends having dirty burning characteristics. On his flopover chart he showed an advertisement from the March 28th, 1955 issue of "Life" Magazine in which Gulf Oil stated that through a new refining process they were able to remove the dirty burning components from gasoline.

Here are some of the other statements, not verbatim, of course, but in essence, that Mr. Phillips made:

"Cat crackers produce dirty fuel. Burning off the catalyst upon which coke is deposited causes pollutants to be emitted to the atmosphere. There is incomplete combustion because steam is introduced into the regenerator to reduce the temperature of the reaction. (It is common practice to keep temperatures down by water coils on the outside jacket of the regenerator which produce steam for process or auxiliary purposes. Introduction of steam into the burning zone of the regenerator could result in the formation of water gas, a combustible gas.)

"Sulphur increased 3% over the national average in gasoline produced in the Los Angeles Area from 1941 to 1954.

"According to the Ethyl Corporation, during the period 1941 to 1954, sales of tetraethyl lead increased two-fold in the Los Angeles Area and the TEL concentration of gasoline increased four times during the same period.

"It was patriotic during the second World War to increase the end point of gasoline in order to produce sufficient volume to meet military and civilian demands. Postwar, the end point of gasoline did drop somewhat, but now it is back to the same level, proving that Los Angeles oil companies are motivated solely by the profit picture. These high end point gasolines are dirty burners and contribute significantly to the smog picture.

"The refiners, and the companies that produce and sell additives for gasoline, are responsible for the smog in the Los Angeles Area.

"Tetraethyl lead is a very dangerous poison and it is being used in large quantities in gasoline produced and consumed in the Los Angeles Area, therefore, the companies that make and sell tetraethyl lead compounds are guilty of producing smog, and endangering the health of the inhabitants.

"7,000,000 gallons of gasoline are consumed daily in the Los Angeles Area. This produces 19 tons of lead and 7 tons each of bromine and chlorine as emissions to our atmosphere.

"2200 tons of pollutants of all kinds are emitted daily to our atmosphere.

"One hundred and sixty-seven feet of clean air is required to dilute to a safe level the amount of lead coming from gasoline. (Phillips did not say cubic feet of air--merely feet.)

"The petroleum industry contributes 92% of the total smog promoting pollutants. Incinerators and natural gas constitute the remaining 8%.

"1.8 to 2.0 cents/gallon is estimated cost of producing a lead-free gasoline capable of satisfying the octane requirement of automobiles in this area.

"7,000,000,000 cubic feet of air are required to burn the seven million gallon of gasoline daily.

"Doctors say there are five times the quantity of lead in the blood today with high lead content gasolines than there was in 1941 or prior to high TEL content gasolines. There is a relationship between lung cancer and the use and concentration of tetraethyl lead in gasoline. There is a correlation between the death rate in the highly concentrated and industrial areas of Los Angeles and the number of automobiles and the concentration of tetraethyl lead in gasoline. That while working for Shell Oil Company on the design of their catalytic cracker he was accidentally deluged with aviation gasoline at the refinery because someone opened the wrong valve. Shortly thereafter he became ill and doctors said that he had symptoms of tetraethyl lead poisoning. He then left

the Los Angeles Area and was employed in some other part of the country. Upon his return to Los Angeles the TEL poison symptoms remanifested themselves and this he claims is due to the high concentration of lead in the atmosphere because of the high^{con}centration of tetraethyl lead in gasolines.

"That while he was working for Shell he urged them to alter their catalytic cracker in such a way as to prevent the emissions of both hydrocarbons and other pollutants to the atmosphere but that Shell told him that such an alternation would cost a million dollars and that they could not afford it."

Mr. Phillips used a flopover chart throughout his speech set up on an easel and the data he claims was from the Bureau of Mines Reports showing volatility, end points of gasolines, lead concentrations and the like. Repeatedly he stated that there was no justification for the dirty burning gasoline in this area; that the Los Angeles Area gasoline contained more sulphur and nitrogen compounds than any other gasoline in the United States, although he did admit that the refiners were removing some of the sulphur from the crudes and products. He stated that the crudes processed in this area were all of very high sulphur content.

He took a dim view of TCP. He stated that plug fouling occurred in aircraft during the Korean war due to the lead concentration. The lead fouled the plugs and caused the engines to stop running. After the Korean war, TCP was added to gasoline to counteract the plug fouling tendency. As a result, the amount of lead retained in lungs has increased from six to eight percent prior to TCP to a level of forty percent now that TCP is being used. He stated that he tried to prevail upon Shell not to market a TCP bearing gasoline but was told that all plans for advertising and marketing were set up and couldn't be changed.

The writer believes the above summary fairly well covers the gist of Mr. Phillips' statements and there is no doubt^{what} Mr. Phillips is definitely putting the finger on the oil industry in this area. No effort was made by either of us to challenge or refute any of Mr. Phillips' statements. There were several questions from the floor--one from a doctor asking if there was definite proof that the deaths in the industrial area of Los Angeles were directly related to the automobile registration and the concentration of TEL. Mr. Phillips said there was no direct proof, that investigation

has not been made that far, but there was sufficient evidence to make a fair correlation between these factors. It was sensed that the audience was not entirely with Mr. Phillips and it is believed that the meeting on January 10th, at which time Mr. Sweeney will rebut Mr. Phillips will be a most interesting meeting. Arrangements have been made for Mr. Tyler and the writer to attend.

WBG

Assistant Manager
Western Region

WBGest:mh