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March 20, 1934.

Dr. Robert A. Kehoe,
College of Medicine,
University of Cincinnati,
Cincinnati, Ohio.

My dear Dr. Kehoe:

After considerable delay not anticipated at the time I saw you I am communicating with you in regard to your giving your deposition for use in the case of the Mid-Continent Petroleum Corporation. I am returning herewith your type-written copy of your recent appraisals of lead hazards and I am also enclosing herewith a copy of same which I have caused to be made and verified in my office.

I have prepared my interrogatories and an agreement which pertains to the taking of your deposition and I am enclosing herewith a copy of the interrogatories and a copy of the agreement. However, I desire that you do nothing about the case until I forward to you the originals of these papers and of the cross-interrogatories prepared by the attorney for the plaintiff. I hope I will be in a position to forward all papers to you within the next few days.

I am sure it will be far more convenient for you to give your deposition before a notary in your own building instead of before one in a law office. However, it will be very necessary for her to follow strictly the suggestions of the agreement and of the officer's certificate which I will furnish her at the proper time in order to prevent their being returned for corrections as the requirements in a matter of this type are rather technical and rather strictly adhered to.

I will send you with the other papers at the time I desire to take your deposition my office copy of the testimony which you recently returned to me.

It may not be amiss to state that at the time of my visit to your office our court of general jurisdiction here was in session and that the court of the same type of the attorney for the plaintiff is now in session, our duties in our respective local courts making it rather difficult for us to prepare case as expeditiously as we had originally intended.

N22797

Yours very truly,

WORKMEN'S COMPENSATION BOARD.

MRS. [REDACTED]

PLAINTIFF,

VS.

AGREEMENT TO TAKE DEPOSITION.

MID-CONTINENT PETROLEUM CORPORATION,

DEFENDANT.

It is agreed by counsel representing the plaintiff and by counsel representing the defendant in the above-styled cause that the deposition of Dr. Robert A. Kehoe may be taken for use in behalf of the defendant, Mid-Continent Petroleum Corporation, on the trial of the above-styled cause now pending before the Workmen's Compensation Board of Kentucky and that same may be taken upon the interrogatories and cross-interrogatories hereto attached before any officer in Cincinnati, Ohio, at such time and place as may be fixed by him, who may be authorized to administer an oath to the witness; that no one shall be present upon the taking of the deposition except the witness and the officer taking same and that the certificate of the officer shall so state.

It is further agreed that in giving his deposition he may write his own answer to the questions propounded or they may be written by the officer taking his deposition and that following his giving his deposition he will read same and subscribe to same in the presence of the officer whose certificate shall state the manner of taking same.

All formalities in the taking of the deposition are hereby waived except objections to competency and relevancy of questions and answers, and no commission for the taking of same shall be required.

This March 20, 1934.

Attorney for Plaintiff.

Attorney for Defendant.

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Interrogatories prepared by Chas. F. Bell, attorney for Mid-Continent Petroleum Corporation, to be propounded to Dr. Hobart L. Hulse in accordance with the agreement hereto attached and for the purpose therein stated.

1. State your name, age, and residence.
2. Give the name of what recognized professional or scientific school you are a graduate, and give the kind of course or courses of study pursued by you and the date or dates of your graduation from each course. State briefly that post-graduate work, if any, and what teaching, if any, you have done subsequent to your graduation.
3. In the event your answer to the last question above is that you are a graduate of a nationally recognized school of medicine, state in a general way to what extent you have practiced your profession of medicine since your graduation, and also state whether by the medical fraternity and by the men of the scientific field you are the more highly regarded as a practitioner of medicine or as a worker and authority in the field of science, and give your reasons for so stating.
4. State fully your present business and professional connections, and in a general way state the nature of your duties as to each of your connections.
5. State the approximate date of each of your connections of your present business and professional connections, and also state whether or not each connection stated has been continuous from the respective date stated to date.
6. State whether or not you as a physician and as a scientific man are familiar with the conditions in America from what they have written during recent years on the subject of food poisoning aside from its use in poisoning and its use in the animal and poisoning human beings. And state to what authority the authorities and their works at all of the said conditions.
7. Are you familiar with the conditions and any other authorities from what they have written and their study and con-

sideration of same on the subject of gas line, containing tetraethyl lead, poisoning? And, if so, please state what authorities and what publications you are familiar with on this subject in addition to those given in answer to question 6 above.

8. Please enumerate in complete detail the commonly regarded symptoms, as given by the authorities, of human beings noticeably affected by lead poisoning, affected to the extent of seriously impaired health arising from daily or chronic exposure to lead either in its manufacture or through occupational industry of those affected.

9. In the event the authorities list any symptoms in cases of lead poisoning arising from chronic exposure extending over a period of many months or even years, different from those of a case of chronic exposure connected with an acute exposure resulting in lead intoxication or in lead intoxication with resulting death, please enumerate the symptoms they assign to the one exposure and not to the other.

under 10. In the event you, and others associated with you and your supervision, have made clinical or scientific experiments and studies of animal life, including human beings, exposed by you to tetraethyl lead, state approximately when you made such experiments, the reason or object of your making them, the laboratory and the university, if any, with which your experiments and studies were connected, what animal life was used---and the number of specimens of each---, the method and extent of exposure both as to the skin and as to inhalation, and the results obtained. Give in detail the results as to rabbits, in the event they were used, and as to human beings in the event they were used.

11. In the event you published your findings and conclusions as a scientific treatise or report, using one or more publications to do so, give the date and style or citation of each publication of this study or experiment, and file a copy of each as a part of this answer, marking each alphabetically beginning with the letter "A", if you have a copy of same, and in the event you do not have a copy of any one so state.

12. In the event your findings as reported and published differs essentially from those of the other authorities, state in what essentials they are different.

13. How many cubic centimeters of tetraethyl lead are in a gallon of leaded gasoline of the highest concentration for commercial use as a motor fuel and what is the proportionate part by volume?

14. What are the chemical compounds or ingredients used to produce the product of tetraethyl lead and what is the formula for them; also what changes are produced in refining about the compound of tetraethyl lead and what is the formula of that result?

15. What is the purpose or property of tetraethyl lead in commercial gasoline for motor fuel, and in what way does it operate to give an improved motor fuel?

16. Does it evaporate at a higher or lower temperature than the gasoline containing it? Give the comparative temperatures for their evaporation, and state the comparative parts of each by percentages remaining of a gallon in an uncapped cylindrical container---the orifice top end off---when exactly one-half gallon of the leaded gas shall have evaporated as a result of exposure to sun and atmospheric temperature producing a temperature of 110° Fahrenheit, if you can do so. If you cannot give the result requested, illustrate, giving your own terms and conditions, the result requested as to evaporation in giving off vapors.

17. State to what extent, if you know from your own personal tests, leaded commercial gasoline for motor fuel gives off by evaporation its tetraethyl lead under ordinary bulk-station and ordinary retail filling station handling, it under ordinary winter conditions and ordinary summer conditions by the usual facilities of these stations. In the event there is a material difference in its evaporation under varying weather conditions, state how its evaporation will be affected, if at all, by an unusually hot summer.

18. State under what conditions now set under question 17 above the relative degrees of the absorption of tetraethyl lead through the skin.

19. In the event you and associates working under your supervision have made any recent or comparatively recent clinical or scientific experiments and studies to determine the effects of tetraethyl lead gasoline upon animal life, including human beings, state your most recent scientific experiment for report and publication, giving the approximate date and location of same, the laboratory and the university, if any, into which your experiments and studies were connected, what animal life was used---and the number of specimens of each---and, if there were groups of individuals, the methods and extent of exposures both to the skin and to inhalation, and the results obtained as to lead in the animals used, if any, and in the various groups, if any, of human beings.

20. In the event lead was appreciably noticeable upon the animals, if any, or upon the groups of human beings, if any, testified about in your last answer above, state the effects noted upon the central nervous system and upon the various organs and parts of the bodies of the groups of human beings studied, and state the results noted upon the animals. If your findings and reports considered above were prepared for publication, attach "Exhibit A" a published report of same if you have a copy, and if you do not have a published copy, file a copy of your manuscript, and if you do not have a copy of that, give the date and style of citation of the publication.

21. In cases of lead poisoning arising out of the manufacture of lead or arising out of occupational contamination of the poisoned individual, state a general description of the human body

was least affected and was most noticeably affected, and what was the effect upon the central nervous system, the heart, the blood, and the lungs, and state whether your answer is based wholly or in part upon your familiarity with the authorities heretofore used by you.

22. Doctor, state, at your studies of tetraethyl lead gasoline used in commercial engines, the highest percentage of lead used was () absorption through the skin and () by inhalation, and give your reasons for your conclusions.

23. Doctor, I am handing you herewith my carbon copy of the testimony taken in the case of Mrs. [REDACTED], plaintiff, versus Mid-Continent Petroleum Corporation, defendant, at Owensboro, Kentucky, on September 15, 1933, before Judge Ben B. Patrie, a member of the Workmen's Compensation Board, a verbatim and certified typewritten transcript of the testimony by Marvin Miller, Official Court Reporter, Eastern Circuit Court, the transcript containing 28 pages, and I am asking you to file this copy of the transcript of testimony or a part of your deposition marked "Exhibit 1". Read the transcript of the testimony of Mrs. Roberta Smith, of Dr. F. C. Carroll, of Sam Talley and of J. B. Gary, and state whether or not, doctor, in your opinion the symptoms of disease shown by [REDACTED] as reflected by this record are the result of tetraethyl lead gasoline poisoning.

24. From your reading of this record, state whether or not his death, in your opinion, doctor, was the result of tetraethyl lead gasoline poisoning.

25. State, doctor, if you can do so from this diagnosis by Dr. Carroll and from this record the most probable cause of the death of this man.

26. State the period of time your studies and investigations covered as to cases or probable cases of tetraethyl lead gasoline poisoning and as to your investigations from a scientific standpoint as to its poisonous effect, and state the extent of territory that came under your consideration during this time.

27. State whether or not there is any considerable number of cases or any case known and reported to the American and English recognized authorities of tetraethyl lead gasoline poisoning resulting in (a) death or in (b) considerable intoxication.

28. State whether or not in cases of acute intoxication continuing for five minutes or longer, with complete loss of consciousness, death usually results when the affected individual is removed from his surroundings.

29. State the extent of the personal and laboratory work with which your experiments have been connected, and your associates in your laboratory, and state, if any, if you can do so, also give the extent of the work space

of your department and its yearly income, if any, from its endowments.

30. In the event you have answered above that you are consultant for any commercial corporation or corporations, state generally the nature of the services rendered by you and the object and purposes of same.

31. State anything not otherwise stated above that confirms you in your opinion that Edward A. Smith died or did not die as a result of triethyl lead gasoline poisoning.

This March 2, 1934.

Chas R. Bell,

Atty. for Defendant.