FILE NAME: Oil Industry and American Petroleum Institute (API)

DATE: 1959 Apr 27

DOC#: API042

DOCUMENT DESCRIPTION: Minutes from API Medical Advisory Committee Meeting with Attachments

FOR COMMITTEE USE ONLY NOT FOR PUBLICATION

MEDICAL ADVISORY COMMITTEE
27TH MEETING

April 27, 1959
Parlor M - Sherman Hotel
Chicago, Illinois

MEMBERS PRESENT:

V. C. Baird, M. D., Chairman
J. W. Osborn, M. D., Vice Chairman
C. R. Miller, M. D., Secretary

W. O. Armstrong, M. D.
F. F. Boys, M. D.
Richard Call, M. D.
L. E. Curtis, M. D.
Kieffer Davis, M. D.
(Rep. by C. S. Huntington, M.D.)
R. E. Eckardt, M. D.
K. R. Fourcher, M. D.
(Rep. by W. L. Avrett)
T. M. Frank, M. D.
J. H. Hege, M. D.
C. H. Hine, M. D.
R. Emmet Kelly, M. D.
T. J. Kelly, M. D.
E. K. Linder, M. D.
T. H. Mitchell, M. D.
R. C. Page, M. D.
(Rep. by E. R. Stanton)
B. B. Reeve, M. D.
J. C. Ruddock, M. D.
G. M. Saunders, M. D.
(Rep. by T. E. Allen, M.D.)
Ralph Schneider, M. D.
W. Wayne Stewart, M. D.
Leo J. Wade, M. D.

TECHNICAL ADVISORS PRESENT:

W. H. Barcus
E. K. Daniels
A. E. Dooley
H. W. Gerarde, M. D.
N. J. Gothard
P. D. Halley
J. W. Hammond
N. V. Hendricks
P. K. Kuhne
A. C. Pabst
L. E. Renes
Jack Spence
J. Van Zandt

MEMBERS ABSENT:

R. M. Adams, M. D.
C. H. Baylor, M. D.
J. W. Crookshank, M. D.
F. D. Gassaway, M. D.
E. P. Luongo, M. D.
B. S. Miller, M. D.
R. J. Potts, M. D.

OTHERS PRESENT:

R. A. Wise, M. D.	-	Humble Oil & Refining Company
R. G. Birrell, M. D.	-	Imperial Oil Limited
W. E. Broughton, M. D.	-	Shell Petroleum, London England
J. T. Garrett	-	Monsanto Chemical Company
C. G. Hunter, M. D.	-	Shell Research Ltd., London, England
J. H. Johnston	-	Imperial Oil Limited
K. L. Mackenzie	-	Barber Oil Corporation
D. C. Murphy	-	Esso Petroleum Co., London, England
C. A. Nau, M. D.	-	Consultant, Galveston, Texas
H. W. Prince, M. D.	-	Standard Oil Company of California
H. Van Raalte	-	Royal Dutch Shell (The Hague)

OTHERS PRESENT (Continued):

L. W. Raymond	-	Esso Research & Engineering Company
E. A. Toscot	-	Imperial Oil Limited
Viewhig, M. D.	-	Standard Oil Company of Texas
McIvor Woody, M. D.		

I. OPENING REMARKS

The chairman welcomed all those present to the 27th meeting of the Medical Advisory Committee. He indicated that the principal duty of the group was to receive and act upon reports of its subcommittees.

II. INTRODUCTION OF NEW MEMBERS AND GUESTS

Dr. Baird introduced W. Wayne Stewart, M. D., Sun Oil Company, Philadelphia, Pennsylvania, a new member of the Medical Advisory Committee, replacing Dr. Lamson Blaney; Curtis H. Baylor, M. D., The Texas Company, New York, New York, a new member of the Medical Advisory Committee, who was absent due to illness and who replaces Dr. M. N. Newquist; R. Emmet Kelly, M. D., Medical Director, Lion Oil Company (A Division of Monsanto Chemical Company), St. Louis, Missouri, a new member of the Medical Advisory Committee.

The chairman introduced R. A. Wise, M. D., Humble Oil & Refining Company; R. G. Birrell, M.D., Imperial Oil Limited; W. E. Broughton, M. D., Shell Petroleum (London); J. T. Garrett, Monsanto Chemical Company; C. G. Hunter, M. D., Shell Research Limited (London); C. S. Huntington, M. D., Phillips Petroleum; J. H. Johnston, Imperial Oil Limited; K. L. Mackenzie, Barber Oil Corporation; D. C. Murphy, Esso Petroleum Company (London); C. A. Nau, M. D., Consultant; H. W. Prince, M. D., Standard Oil Company of California; H. Van Raalte, Royal Dutch Shell (The Hague); L. W. Raymond, Esso Research and Engineering Company; E. A. Tuscot, Imperial Oil Limited; Viewhig, M. D., Standard Oil Company of Texas; and McIvor Woody, M. D., past chairman of the Medical Advisory Committee.

The chairman stated that George M. Saunders, M. D., Socony Mobil Oil Company, Inc., was unable to attend and introduced Dr. Ted Allen who was representing Dr. Saunders.

The chairman called attention to the retirement of L. C. Beard, Jr. Dr. Beard had served as a technical advisor to the Medical Advisory Committee for a number of years.

III. APPROVAL OF MINUTES

ACTION: It was regularly moved, seconded, and unanimously passed that the minutes of the 26th meeting of the Medical Advisory Committee, held November 10, 1958, Conrad Hilton Hotel, Chicago, Illinois, not be read and be approved as distributed.

IV. SUBCOMMITTEE REPORTS

A. Operating Subcommittee

API 07455

V. C. Baird, M. D., chairman, reported on the recommendations of this group. His report is attached as Appendix A.

ACTION: It was regularly moved, seconded, and unanimously passed that the report of the Operating Subcommittee be accepted.

B. Program Subcommittee

E. K. Linder, M. D., chairman, reported on the action of this group. His report is shown as Appendix B.

ACTION: It was regularly moved, seconded, and unanimously passed that the report be accepted.

C. Subcommittee on Atmospheric Pollutants

J. C. Ruddock, M. D., chairman, reported on the activities of his group. His report is given in Appendix C. Certain recommended changes were made to his report.

ACTION: It was regularly moved, seconded, and unanimously passed that the report as amended be accepted.

D. Subcommittee on C9 - C12 Aromatics

In the absence of Kieffer Davis, M. D., chairman of this subcommittee, C. H. Hine, M. D. reported on the activities of this group. His report is given as Appendix D.

ACTION: It was regularly moved, seconded, and unanimously passed that the report be accepted.

E. Subcommittee on Carcinogenicity

R. E. Eckardt, M. D., chairman of this group, stated that there was no report for this group.

F. Subcommittee on Dermatology

Leo J. Wade, M. D., chairman, presented the report of this subcommittee's activities. His report is given in Appendix E.

ACTION: It was regularly moved, seconded, and unanimously passed that the report be accepted.

G. Subcommittee on Medical Policies and Administrative Practices

Ralph Schneider, M. D., chairman of this subcommittee, gave his report which is given in Appendix F.

ACTION: It was regularly moved, seconded, and unanimously passed that the report be accepted.

H. Subcommittee on Physical Agents

C. H. Hine, M. D., chairman, reported on his group's activities which is given in Appendix G.

ACTION: It was regularly moved, seconded, and unanimously passed that the report be accepted.

I. Subcommittee on Specialty Petroleum Products

J. W. Osborn, M. D., chairman of this group, gave a report of his group's

activities. His report is given as Appendix H.

ACTION: It was regularly moved, seconded, and unanimously passed that the report be accepted.

Allan Dooley reported that the Interdivisional Committee on Labeling is currently considering the preparation of labels for ethylene-type antifreezes, cut-back asphalts, and aromatic oils.

J. Subcommittee on Toxicological Reviews

H. W. Gerarde, M. D., chairman of this group, gave his report which is attached as Appendix I.

ACTION: It was regularly moved, seconded, and unanimously passed that the report be accepted.

K. Subcommittee on Industrial Hygiene

Jack Spence, chairman of this subcommittee, gave his report which is given as Appendix J.

ACTION: It was regularly moved, seconded, and unanimously passed that the report be accepted.

V. REPORT OF LIAISON MEMBERS

A. Joint Committee for Dermatology Studies - Leo J. Wade, M. D., reported there had been no meeting of this group. He indicated that the committee had received copies of a booklet and wall chart distributed by the API Division of Marketing, as a result of a study and survey made by the Industrial Hygiene Foundation of America, Inc., under an API grant.

B. Smoke and Fumes - J. C. Ruddock, M. D. reported on his liaison activities with the Division of Refining's Smoke and Fumes Committee. His report is given in Appendix K.

C. American Standards Association - Allan Dooley reported that the ASA B-4 Industrial Sanitation Committee had had no meeting, therefore, there was no report. The activity of the ASA Z-37 Committee on Toxic Dusts and Gases is included in the report of the Subcommittee on Industrial Hygiene (Appendix J). N. V. Hendricks reported on the ASA Z-62 Industrial Hygiene Standards Committee. His report is given in Appendix L.

D. American Medical Association - J. W. Osborn, M. D. has included this report in Appendix H, Subcommittee on Specialty Petroleum Products.

E. Interdivisional Committee on Labeling - The report of this group's activity was given by Allan Dooley and is included in the report of the Subcommittee on Specialty Petroleum Products, item IV-I of these minutes.

F. First Aid Training - T. M. Frank, M. D. reported that Charlie Miller, who had been chairman of the API First Aid Committee for a great number of years, has retired. Mr. Quincy Tuma is the new chairman. A meeting of this group is scheduled for next week during the midyear meeting of the Central Committee on Accident Prevention. Dr. Frank indicated that a new book on first aid will be published in the future. The mouth-to-mouth resuscitation method is under discussion for inclusion in the new book. It was recommended that the new first aid book should include the new treatment on snake bites.

G. Wax Committee - R. E. Eckardt, M. D. reported on the activities of this committee. He indicated that the Wax Committee believes their work is progressing satisfactorily. It is their hope that the investigational work will permit the establishment of a standard for petroleum waxes which will be acceptable to the Food and Drug Administration.

H. Quarantine Service - There was no report from this group.

I. Interdivisional Committee on Petroleum Food Additives - L. E. Curtis, M. D. announced a new interdivisional committee had been appointed to study the toxicology of petroleum food additives. Chairman Curtis announced that the newly formed committee had their first meeting. The petrochemical field was excluded from the committee scope. Chairman Curtis indicated that it is possible that his committee will ask the Advisory Committee to the Wax Research Project to include petrolatum in their investigation. Dr. Curtis stated that his committee will ask Mr. Porter to write the various petroleum companies asking that they notify his committee if they have contacted the Food and Drug Administration in regard to any of their problems on petroleum food additives, provided such problems are of mutual interest to the whole petroleum industry.

VI. TENTATIVE BUDGET FOR 1960-61

Air Pollution	$ 5,000.00
C_9 - C_{12} Aromatics	20,000.00
Treatment for Kerosine Ingestion in Children	7,500.00
Research on Noise in Industry	5,000.00
Consulting Services	3,000.00
Toxicological Reviews	10,000.00
Administrative Services	1,500.00
TOTAL	$52,000.00

ACTION: It was regularly moved, seconded, and unanimously passed that the tentative budget be approved, subject to final review at the 1959 Fall meeting.

VII. NEXT MEETING

The Operating Subcommittee recommended that the next meeting of the Medical Advisory Committee be held Monday morning, November 9, 1959, in the Conrad Hilton Hotel, Chicago, Illinois, during the Annual API Meeting. The subcommittee meetings will be scheduled on Friday and Saturday, November 6 and 7 with the Operating Subcommittee to meet Sunday P. M., November 8th, and the Round Table Session to be held Monday P. M., November 9th.

ACTION: It was regularly moved, seconded, and unanimously passed that the recommendation of the Operating Subcommitte be approved.

VIII. NEW BUSINESS

1. Reception - F. F. Boys, M. D., Sinclair Refining Company, requested Chairman Baird to announce that the Sinclair Refining Company was giving a reception for N. J. Gothard who has been a Technical Advisor to the Medical Advisory Committee since the committee was formed in 1945. Mr. Gothard is to be retired in the near future.

2. Medical Activities in Foreign Countries - Chairman Baird called upon the visitors from foreign countries to comment on the medical activities in their various countries.

E. O. Mattocks

Approved:
V. C. Baird, M. D., Chairman
6/15/59

MINUTES OF THE MEDICAL ADVISORY COMMITTEE'S OPERATING SUBCOMMITTEE

April 25, 1959
Sherman Hotel
Chicago, Illinois

THOSE PRESENT:

V. C. Baird, M. D., Chairman
J. W. Osborn, M. D., Vice Chairman
C. R. Miller, M. D., Secretary
L. E. Curtis, M. D., Past Chairman

R. E. Eckardt, M. D.
H. W. Gerarde, M. D.
C. H. Hine, M. D.
E. K. Linder, M. D.
J. C. Ruddock, M. D.
Ralph Schneider, M. D.
Jack Spence
Leo J. Wade, M. D.

MEMBERS ABSENT:

R. M. Adams, M. D.
Kieffer Davis, M. D.

VISITORS:

J. W. Hammond
E. O. Mattocks

I. INTRODUCTORY REMARKS

Chairman Baird announced the following membership changes in the Medical Advisory Committee since the last meeting:

1. Curtis H. Baylor, M. D., Texaco Incorporated, New York, New York, replaces M. N. Newquist, M. D.

2. R. Emmet Kelly, M. D., Monsanto Chemical Company (Lion Oil Company), St. Louis, Missouri, a new member.

3. W. Wayne Stewart, M. D., Sun Oil Company, Philadelphia, Pennsylvania, replaces Lamson Blaney, M. D.

4. C. H. Baylor, M. D., Texaco Incorporated, New York, New York, was appointed a member of the Subcommittee on Specialty Petroleum Products.

5. L. C. Beard, Jr., Socony Mobil Oil Company, Inc., New York, New York, Technical Advisor, was retired by his company.

6. Elmer Wheeler, Monsanto Chemical Company (Lion Oil Company), St. Louis, Missouri, a new Technical Advisor, replacing Dr. R. Emmet Kelly on the Subcommittee on Industrial Hygiene.

7. Mr. Jack Spence, Standard Oil Company of California, San Francisco, California, and Mr. C. T. Brown, Richfield Oil Corporation, Los Angeles, California, were appointed to the Subcommittee on Atmospheric Pollutants and Mr. R. C. Cole, Phillips Petroleum Company, was removed from this subcommittee.

The chairman complimented the chairman of each of the subcommittees for the fine job they were doing. He stated that most of the work being done by the Medical Advisory Committee was being effectively accomplished through the subcommittees.

II. MINUTES OF LAST MEETING

ACTION: It was regularly moved, seconded, and unanimously passed that the minutes of the November 8, 1958 meeting of the Operating Subcommittee, which were distributed as Appendix A of the November 10, 1958 Medical Advisory Committee meeting, be approved as distributed, without reading.

III. MANUAL ON RADIOACTIVE MATERIALS

The desirability of preparing a Manual on Safe Handling Procedures and Employee Protection in Handling Radioactive Materials was not considered at the November 8, 1958 meeting of the Operating Subcommittee. It was decided to wait till after the round table discussion of this general subject, scheduled for November 10, 1958. Unfortunately, time did not permit discussion of the subject at the round table session. Therefore, no action was taken at this time. It is possible it will be considered at the November 1959 round table meeting.

IV. PUBLICATIONS OF TOXICOLOGICAL REVIEWS

Dr. Gerarde reported that the Subcommittee on Toxicological Reviews recommended that the revised four toxicological reviews, which have been approved by the Medical and Health Committee for publication, be published by the API in the form prescribed by this subcommittee. This is contrary to the procedure adopted by the Medical Advisory Committee which approved publication in the AMA Archives of Industrial Health. The Toxicological Review Subcommittee's contrary recommendation was based on their desire for the API to own the revised reviews. Also, this procedure would permit publication in the form desired by the subcommittee. The subcommittee recommends that AMA Archives of Industrial Health and other appropriate medical magazines be requested to publish the review of the revised toxicological reviews.

ACTION: It was regularly moved, seconded, and unanimously passed that the Operating Subcommittee go along with recommendation of the Subcommittee on Toxicological Reviews.

V. LIAISON WITH THE ASPHALT INSTITUTE

Dr. R. E. Eckardt who has been the Medical Advisory Committee liaison member with The Asphalt Institute stated that there has been no activity of the liaison member for the last two years. Although The Asphalt Institute requested the appointment of a Liaison Member, the only contact such member has had with The Asphalt Institute was at a time when he requested such meeting.

ACTION: It was moved, seconded, and unanimously passed that the liaison membership with The Asphalt Institute be discontinued and The Asphalt Institute be so informed by letter, also telling them that the Medical Advisory Committee, because of their continued interest in asphalt, stands ready to render any assistance possible if requested to do so.

VI. UNIVERSITY OF CHICAGO MEDICAL SCHOOL

A letter was received from T. L. Coggeshall, M. D., Dean of the Division of The Biological Science, including the School of Medicine of the University of Chicago, requesting a financial donation to their Salary Support Program to help compensate their staff.

ACTION: It was regularly moved, seconded, and passed that Dean Coggeshall's request for money be denied, informing him that most of the companies represented by the members of the Medical Advisory Committee are making contributions to the medical educational institutions.

VII. SUBCOMMITTEE REPORTS

(a) Program - Chairman Linder reported that his group had recommended that a round table discussion be held during the November 1959 meeting but that no public session should be scheduled.

(b) Atmospheric Pollutants - Chairman Ruddock reported on the activities of Dr. Goldblatt in preparing his report which should be available about July 1, 1959. There is a balance of $4,871 remaining in this fund. However, the final balance will not be known till after July 1st when Dr. Goldblatt's final expense account is received.

Dr. Ruddock distributed to his subcommittee copies of Dr. Goldblatt's last progress report. This was displayed to the members of the Operating Subcommittee.

ACTION: It was regularly moved, seconded, and unanimously passed that copies of Dr. Goldblatt's last progress report should be distributed to members of the Medical Advisory Committee together with a letter from Chairman Ruddock, addressed to the Members of the Medical Advisory Committee, requesting that any comments should be sent to him as soon as possible.

Chairman Ruddock stated his subcommittee had considered the desirability of continuing the review and interpretations of literature relating to the effect on human health of atmospheric pollutants by Dr. Goldblatt. It was realized that to obtain new money for such a project would make it necessary to delay starting this phase until July 1, 1960.

ACTION: It was regularly moved, seconded, and passed with one negative vote that the Operating Subcommittee concur in the recommendation of the Subcommittee on Atmospheric Pollutants that $5,000 be placed in the tentative Medical and Health 1960 Budget to be used to conduct a literature review and interpretation of the effect of air pollution on the human health, provided the Atmospheric Pollutants Subcommittee, after reviewing Dr. Goldblatt's final report, present a firm proposal to the Medical Advisory Committee at their November 1959 meeting for final action and budget approval.

(c) C_9 - C_{12} Aromatics - Dr. C. H. Hine, acting chairman, reported that the investigational progress appeared satisfactory. Based on new and unexpected findings, this subcommittee was asking for $20,000 for the year 1960-61 to continue this research investigation.

ACTION: It was regularly moved, seconded, and unanimously passed that $20,000 be placed in the 1960 budget to continue the C_9 - C_{12} investigation.

(d) Carcinogenicity - Dr. Eckardt stated there was nothing to report.

(e) Dermatology

Dr. Wade had nothing to report.

(f) Medical Policies and Administrative Practices

Dr. Schneider indicated he had nothing to report.

(g) Physical Agents

Dr. Hine had nothing to report.

(h) Specialty Petroleum Products

Dr. Osborn stated his subcommittee was of the opinion that their three investigations should continue another year.

ACTION: It was regularly moved, seconded, and unanimously passed that the following sums of money be placed in the 1960 budget:
$2,500 for Dr. Daeschner
$2,500 for Dr. Nau
$2,500 for University of Vermont.

(i) Toxicological Reviews

Dr. Gerarde had nothing to report. Chairman Biard requested Dr. Gerarde to be sure to include in the cost of the toxicological reviews any expenses incurred by Dr. Drinker after July 1, 1959 since Dr. Drinker will no longer be on an API retainer after that time.

(j) Industrial Hygiene

Mr. Jack Spence stated he had nothing to report.

VIII. DR. GOLDBLATT'S EXPENSE ACCOUNT

Dr. Ruddock reported that Dr. Goldblatt had been paid $5,129 to cover his traveling expenses incurred on his trip to the United States.

IX. RAISING MONEY FOR MEDICAL ADVISORY COMMITTEE BUDGET

Members of the Medical Advisory Committee were informed that the API Executive Committee, at their February 7, 1959 meeting, changed the policy of raising money for the Medical Advisory Committee. If problem now involves expenditures, budgetary requests should be included in the Medical and Health budget, provided each interested operating division has first endorsed the project and the proposed expenditures of necessary funds, as evidenced by the approval of the affected Divisional Vice President.

X. NEW SUBCOMMITTEE ON EPIDEMIOLOGY

ACTION: The chairman was authorized to appoint a new subcommittee on Epidemiology.

XI. NEW SUBCOMMITTEE ON INHALATION OF OIL MIST API 07463

The need for the establishment of a new subcommittee to consider matters such as inhalation of oil mist was reviewed carefully. The possibility of assigning

the task to one of the present subcommittees was considered.

ACTION: It was regularly moved, seconded, and unanimously passed that a new Subcommittee on the Inhalation of Oil Mist be appointed.

XII. TALK BY DR. MALCOLM HARGRAVES

At the suggestion of Mr. D. T. Staples, chairman of the Medical and Health Committee of the Board of Directors, a talk by Dr. Malcolm Hargraves was circulated to the officers of the Medical Advisory Committee. Dr. Baird requested the Subcommittee on Specialty Petroleum Products to review Dr. Hargraves' talk and suggest a course of action. Dr. Osborn reported that the Subcommittee on Specialty Petroleum Products was of the opinion that Dr. Hargraves' paper was unworthy of comment by the Medical Advisory Committee. It was suggested, however, that if possible some company doctor located near or operating in Dr. Hargraves' area might contact him by letter or personally and explain to him certain facts with which he appeared to have no knowledge.

XIII. NEXT MEETING

ACTION: It was regularly moved, seconded, and unanimously passed that the next meeting of the Medical Advisory Committee be held Monday morning, November 9, 1959, at the Conrad Hilton Hotel in Chicago and the subcommittee meetings be held Friday and Saturday, November 6 and 7, and the Operating Subcommittee meeting on Sunday evening, November 8, and the round table discussion be held Monday afternoon, November 9, 1959.

XIV. NEW BUSINESS

(a) Consultants

Chairman Baird reminded the subcommittee chairmen that Medical Advisory Committee consultants would not be on a retainer fee after July 1, 1959. If any subcommittee chairman desired the services of a consultant, he must first clear such request with the chairman of the Medical Advisory Committee.

(b) Reception

Chairman Baird announced that the Sinclair Refining Company would have a reception for N. J. Gothard, who is a Technical Advisor to the Medical Advisory Committee, following the meeting of the Medical Advisory Committee on Monday, April 27, 1959 in Parlor M of the Sherman Hotel. Mr. Gothard will be retired by his company soon.

(c) Subcommittee Membership

Chairman Baird stated that it was his plan to write all members of the Medical Advisory Committee indicating they or their Technical Advisors might wish membership on certain subcommittees or wish to discontinue membership on present subcommittees. This letter will be written in sufficient time prior to the November meeting to present to the new chairman for his information and guidance. The letter will request, also, any opinion the members may have for improving the activities of the Medical Advisory Committee.

(d) New Vice Chairman API 07464

Chairman Baird reviewed the policy of having a vice chairman appointed

who will normally be appointed the next chairman after a two-year term of office. Dr. Baird is assuming that the current vice chairman, Dr. Osborn, will succeed him January 1, 1960. A letter will be written by Chairman Biard to all members of the Medical Advisory Committee requesting each member to write him any suggestions they have for the new vice chairman.

E. O. Mattocks

Approved:
V. C. Baird, M. D., Chairman

APPENDIX B

REPORT OF THE PROGRAM SUBCOMMITTEE

E. Kern Linder, Chairman

The Program Subcommittee met in the Bal Parlor at 9:00 a.m. on April 24, 1959. The following members were present: Drs. Mitchell, Reeve, and Chairman Linder.

The Subcommittee recommends to the Medical Advisory Committee that another round-table discussion for members be held at the Fall meeting. Dr. Schneider, Chairman of the Medical Policies and Administrative Practices Subcommittee, has agreed to continue his agenda of last Fall.

Listed below are other subjects which were suggested for future discussions:

1. Radioactive Materials
2. Disability Retirement
3. Effect of tension and stress on the Heart

The Program Subcommittee respectfully submits this report and moves that it be accepted. The Program Subcommittee also requests that members send in any suggestions which could be considered for future meetings.

REPORT OF THE SUBCOMMITTEE ON ATMOSPHERIC POLLUTANTS

J. C. Ruddock, M. D., Chairman

THOSE ATTENDING:

John C. Ruddock - Richfield
Clark R. Miller - Tidewater
T. B. Rendel - Shell
L. E. Curtis - Standard Oil (Calif.)
E. O. Mattocks - API
C. G. Hunter - Shell Res. (London)
John R. Scottman - Carter Oil
Tom Hall Mitchell - Carter Oil
N. V. Hendricks - Esso Res. & Eng.
Allan E. Dooley - Texaco
Elmer P. Wheeler - Monsanto (Lion Oil)
Jack T. Garrett - Monsanto (Lion Oil)
W. E. Broughton - Shell Petroleum (London)
B. B. Reeve - Standard Oil Co. (Ind.)
H. Van Raalte - Bataafse Petrol. (London)
Kenneth L. Mackenzie - Barber Oil Corp.
J. W. Hammond - Humble
C. H. Hine - Shell Development
Jack Spence - Standard Oil (Calif.)
E. R. Hermann - Humble
C. A. Neilson - Continental Oil Co.
W. O. Armstrong - Continental Oil Co.
E. K. Daniels - General Petroleum
V. C. Baird - Humble
W. H. Barcus - Sun Oil Co.
J. W. Osborn - Standard Oil (Ohio)
Richard Call - Union Oil Co.
C. O. Jones - API Smoke & Fumes Comm.
T. M. Frank - Amoco

The meeting of the Subcommittee on Atmospheric Pollutants of the MAC of the API was called to order by the chairman at the Hotel Sherman, Chicago, Illinois, at 10:30 A. M., April 24, 1959. All members of the Subcommittee were present with the exception of Dr. E. P. Luongo.

Mr. C. S. Jones, Executive Secretary of the API Smoke and Fumes Committee and Mr. E. P. Wheeler, representing the Manufacturing Chemists' Association and a member of their Air Pollution Abatement Committee, were present as guests. In addition, Mr. E. O. Mattocks of the API staff and approximately 25 additional doctors and their technical advisors were there as observers.

A statement on air pollution (copy attached) was presented by the chairman. In this statement it was suggested that a disinterested forum (persons, institutions, or foundations) of unquestioned authority disseminate factual information and data on air pollution under the auspices of the API for publics education on health aspects, both individual and communities. After considerable discussion, action on this suggestion was tabled.

A report was presented on Mr. Chandler Phillips of Glendale, Calif., by Mr. E. K. Daniels of this subcommittee. He pointed out that Mr. Phillips is a prolific public speaker and writer as indicated by paper clippings and articles. Mr. Phillips' particular complaint is about the use of TEL and other gasoline additives plus the elimination of catalytic cracking. Mr. Phillips is not an engineer and future statements should discredited. Copies of his statements and refutations by Mr. K. E. Kingman of the Western Oil and Gas Association are attached.

Mr. C. S. Jones reported briefly on the activities of the Smoke and Fumes Committee. He said that the statement of the MAC of the API on sulphur dioxide received favorable action by their committee. It is presently being held by the Health and Welfare Committee of the Board of Directors waiting a favorable time for publication. The Smoke and Fumes Committee has been reorganized and their projects have been reduced to two and these involve the effect of automobile exhausts on eye irritation and plant phylotoxicity. The Smoke and Fumes Committee has established a group for public information. This subcommittee assured Mr. Jones that we would cooperate with the Smoke and Fumes Committee at their request.

A general discussion of the status of Rule 62, sulfur content of fuel oil, and proposed Rule 63 on the olefin content of gasoline, was held. It was the opinion

of the subcommittee that action on these be left to the WOGA.

Mr. E. P. Wheeler, member of the Air Pollution Abatement Committee of the Manufacturing Chemists' Association, requested that the Medical Advisory Committee take under advisement their offer to join with them in financial and personnel help in any worthwhile air pollution research. No action was taken by the subcommittee.

Dr. Goldblatt's latest progress report was discussed. The subcommittee felt that no action was necessary at this time concerning the printing, distribution, or continuation of Project MC-4 until the subcommittee had an opportunity to review the final report.

The following motion was adopted and carried.

> The subcommittee recommends to the MAC that following the review of Dr. Goldblatt's final report that the subcommittee be empowered to decide whether or not money in the maximum amount of $5,000 shall be tentatively requested for continuing a critical interpretive review of the literature (not a compilation) concerned.

A number of references concerned with air pollution were recommended as worthwhile information by the chairman.

There being no further business, the meeting was adjourned at 1:00 P. M.

I move that this report be adopted.

Dr. J. C. Ruddock

ATTACHMENT 1
(C-3)

Statement on Air Pollution

Air Pollution to the point of discomfort is a problem which primarily affects communities where there are large numbers of people and where there are certain meteorological aspects that concentrate the air pollutants locally by the effects of geography, prevailing winds, inversions and sunshine.

Abatement attempts are being made in local areas, often widely separated, by the formation of Air Pollution Control Districts. These Districts have set up a few standards of quantitative amounts of waste material allowed to escape into the atmosphere. This abatement is attempted to be accomplished by passing laws and rules for the purpose of:

1. Elimination of backyard burning.

2. Control of fuel types - especially those containing sulfur.

3. Control of stack effluents and engine exhausts.

4. Control of storage tanks, manufacturing details and marketing and transportation of petroleum and petroleum products.

5. Establishing "alert" rules when the atmosphere contains excess of certain materials in arbitrary amounts as adopted by the Air Pollution Control District of the locality.

6. Continuous research into cause and elimination of air pollutants.

All of these attempts to control air pollution are based on the hypothesis that the conditions which cause: 1) Eye smarting and coughing, and 2) Decreased visibility, endanger the health of the individual and the community.

In view of the above chronological development of "smog control", statements have appeared in the press made by individuals, groups, political aspirants and others which are <u>not</u> factual but are alarming in their innuendoes. These statements and prophecies are not based on research findings, but are merely individual opinions without scientific knowledge, research investigation or fact. Apparently those scientists, researchers, engineers or medical authorities who have made extensive studies have not been quoted in the press.

It is necessary that some disinterested organization or institute be selected as a forum to speak with unbiased authority on the toxicology and hazards of air pollution in a factual and realistic manner rather than in a political and emotional manner tainted by an anxiety of a dire future. This is necessary for lay public education and to offset the political aspect of air pollution and the thinking that episodes of discomforting concentrations of air pollutants can be legislated out of existence.

It is requested that this Subcommittee discuss this aspect of air pollution control and that we pass a resolution to the Medical Advisory Committee and the Smoke and Fumes Committee of API to the effect that they join hands and suggest the widespread publicity of factual information concerning air pollution, so written that it would appeal to the average newspaper reader and refute statements that are being made blaming the petroleum industry for the annoyances of smog. The publicity should detail what the petroleum industry has done to

eliminate air pollutants, the amount of money spent, the high type of products that are now offered for sale to the public, and it should furthermore detail realistic amounts of harmful substances that are present in the atmosphere from all sources and state, if true, that these are usually not enough to cause either acute or chronic ailments.

This statement should be made based on the concentrated research by many foundations, institutes and universities throughout the world over the past several years. This research is still going on, much of it at the expense of the petroleum industry. If substances are found in air pollutants which would affect the health of the individual or the community, the petroleum industry will be in the front, in order to eliminate any noxious substance that it may be responsible for.

I would request that this Subcommittee discuss thoroughly such a resolution to be properly worded and submitted to the Medical Advisory Committee and to the Smoke and Fumes Committee and its various subcommittees and to the Health and Welfare Committee of the Board of Directors of the API.

JCR/dr

3-31-59

ATTACHMENT 2
(C-5)

Chandler Phillips
1365 East Mountain Street
Glendale 7, California

My purpose today is to present you with the documented evidence, the reports of recognized authorities and certain irrefutable facts placing the responsibility for our serious air pollution problem on the petroleum industry.

I do not claim to be a voice of authority nor am I attempting to establish a "Phillips Theory". I have never posed as an expert although I am sometimes complimented by those who appreciate the extent of my research. I am only a man with an inquisitive mind who spent eight years doing research which shows how the changes in refining methods affect the air we breathe.

It is fact, not theory, gentlemen, that refinery stacks are now emitting pollution into our air that was never before discharged into the air in the history of the refining of petroleum products.

It is fact, not theory, that the composition of gasolines has changed so radically that pollution is expelled in substantially greater amounts from automobiles than was possible with prewar fuels.

You may be interested in that portion of my background which I believe is pertinent insofar as my research is concerned: I worked five years for the federal government as a special investigator. I worked eighteen years for the petroleum industry, four years as a chemist in the Midwest and fourteen years as an engineer on the West Coast. During World War II, I was transferred by a major petroleum company to their Wilmington Refinery where I handled the government paper work relative to the change in refining methods which took place at that time. I saw their first catalytic cracker in this area go into operation. During those war years I also attended U.S.C. night classes as often as four nights each week where I completed petroleum refining and technology courses. After the war I was transferred to their San Francisco office where I worked four years and I was on their San Francisco payroll as an engineer prior to my transfer to Los Angeles in 1948. I was their Burbank District Engineer four years and when I left that company my title was Los Angeles District Engineer. It is unusual for a district engineer to have his projects reported in the Company's New York publication called "Shell Progress". I refer you to page 22 of the March 1954 issue.

I am registered as a mechanical engineer and licensed to practice in the State of California.

It is a matter of record gentlemen, that 1500 tons of sulfur is in the crude oil processed in this area "Daily". The petroleum industry accounts for the removal of only 600 tons. Since sulfur is a well known air pollution potential when it is in any product used for combustion, I believe we have the right to know how much is left in the products combusted in automobiles, trucks, buses and the boilers of industry as well as how much is being expelled from the refinery stacks.

Your attention is directed to Public Health Bulletin 253, showing lead compounds retained in the lungs. Please note that nearly one-half of the lead phosphate is retained in the lungs. TCP: TriCresyl Phosphate makes lead phosphate when expelled from auto exhaust if a leaded gasoline is used with TCP in it.

Examination of the gasoline records show that 22 tons of lead, 8 tons of bromine, 8 tons of chlorine with increasing amounts of phosphorus, gums and tars is now in the gasolines used "Daily" in the Los Angeles area.

S M O G

PRODUCT OF THE PETROLEUM INDUSTRY

RADICAL CHANGES IN REFINING METHODS AND REFINERY PRODUCTS DURING WORKD WAR II caused our serious air pollution in Southern California. This is a world-wide problem wherever you find refineries operating catalytic crackers without the proper controls or the widespread use of the catalytically cracked fuels.

MAJOR SOURCES OF AIR POLLUTANTS:

1. REFINERIES, 2. GASOLINES, 3. INDUSTRIAL FUELS, 4. DIESEL FUELS FOR TRUCKS AND BUSES.

COMPARISON OF REFINERY METHODS:

FORMER METHOD: THERMAL CRACKING. We had cracked gasolines prior to World War II:

1. The gasoline was cracked in tightly enclosed chambers where none of the dangerous gases escaped into our air.
2. The gasoline was treated with a 98% sulfuric acid which removed: sulfur, nitrogen, oxygen compounds and certain reactive hydrocarbons which would have reacted in sunlight to create ozone if they had not been removed.

LESS LEAD WAS NEEDED BECAUSE THE GASOLINE WAS CLEANER.

PRESENT METHOD: CATALYTIC CRACKING. The change to this type of cracking process caused refineries to become a major source of air pollution because:

1. The gasoline is cracked by a process where dangerous gases, sulfur compounds etc., are expelled from refinery stacks high in the air. These pollutants are heavier than air and settle down upon us. They are allowed to expel from these stacks over 200 times the safe breathing limit of sulfur dioxide. Although these emissions have time to dissipate somewhat before they settle down upon us, these limits should be reduced at least fifty percent.
2. The 98% sulfuric acid treatment was DISCONTINUED, leaving more dirty burning, cancer forming impurities in the fuel and also more reactive hydrocarbons remain in the fuel which create ozone when they react in sunlight.

MORE LEAD IS NEEDED TO SILENCE THE MOTOR KNOCK CAUSED BY THE FAILURE TO CLEAN UP THE FUEL AT THE REFINERY.

THE INVENTOR OF THE CATALYTIC CRACKER TOLD THE PETROLEUM INDUSTRY THAT IT WOULD CAUSE AIR POLLUTION. He said they turned down his controls because they were costly and non-productive. (Printed in the Pasadena Independent and witnessed by the Mayor and City Manager of Pasadena.) The inventor's controls are in use successfully in some other areas.

MODERN METHOD: HYDROCRACKING. (in successfull operation in some other areas.)

1. This method is the most beneficial for all concerned because it increases the yield from each barrel of crude oil.
2. Reduces air pollution because it removes the dirty burning impurities; saturates the reactive hydrocarbons with hydrogen, making them non-reactive in sunlight; increases the heat content of the fuel causing more complete combustion. The gasoline is cracked in enclosed chambers and the pollutant are NOT expelled into the air.

(C-7)

Chandler Phillips
1365 East Mountain St.
Glendale 7, California

I AM OPPOSED TO AUTO EXHAUST DEVICES BECAUSE:

1. Why attach devices to millions of automobiles to do a job that should have been done at the refinery.

2. Exhaust devices and afterburners will not destroy total pollutants expelled from auto exhaust.

3. The main purpose of the exhaust devices is to burn that small portion of gasoline that escapes unburned from the exhaust because it contains a group of reactive hydrocarbons which make ozone in sunlight. This is impractical for two reasons:
   1. Exhaust devices will not control the larger amounts of reactive hydrocarbons that escape by evaporation from the gas tank and also the carburetor which is about four times greater than the amount that escapes from the exhaust.

   2. These reactive hydrocarbons can either be removed at the refinery as they were removed in our prewar fuels, or they can be made non-reactive by more modern refining methods. In either process, all three sources of smog formers from the automobile are controlled.

4. Auto devices will not destroy the pollution from the combustion of gasoline. Which contains the cancer forming material used by Dr. Paul Kotin of U.S.C. who exposed mice to auto exhaust causing skin and lung cancer. He reported in the L. A. Examiner "Auto exhaust is our greatest and our most common source of known cancer forming material." Why have a device which will not destroy all of these cancer forming materials which could be substantially reduced at the refinery?

5. Exhaust devices and afterburners cannot destroy the unburnables: The impurities which should be removed from the gasoline at the refinery: Sulfur, nitrogen, gums and tars. If the gasoline is properly refined, it is unnecessary to add the poisonous additives of lead, phosphorous, bromine, chlorine found in our present day fuels. These impurities and additives and their compounds can be classified as the unburnables.

Is your automobile motor a miniature cracker that creates its own "smog formers"? I can answer that question by asking: "Was your car a miniature cracker when we had prewar fuels? We have always had a portion of the gasoline expelled from auto exhaust unburned ever since the invention of the gasoline motor. It is the gasoline that has changed, not the combustion process of your motors.

You hear very little about the report of Dr. Mader at the APCD wherein it is stated that there is a "substantial reduction" in the reactive type hydrocarbons when they are removed or a "reformed" gasoline is used. In checking the composition of the fuel used in that test, even a more substantial reduction could be found if they had used a better fuel. You hear very little about this report, a copy of which I have in my files. Apparently the APCD prefers to foster off a gadget for the tailpipe of automobiles.

BEWARE OF DOUBLE TALK AND TRICKERY

"Smog" is now a "trick" word which is confusing to the public because the local "boys" changed its meaning to suit themselves!!! When the APCD or the oil men talk of "smog" from auto exhaust, they no longer mean total pollutants from the combustion of gasoline!!! They are talking only about the small amount of gasoline that escapes UNBURNED. Their "smog" from auto exhaust does NOT include sulfur, lead, etc.

Auto devices or afterburners are for the single purpose of burning that small percentage of gasoline that always has escaped unburned from auto exhaust. These devices will not destroy the sulfur, lead, phosphorous, nor any of their compounds expelled from the combustion of gasolines. Would you want a water purifier on each faucet???

Ask your APCD or oil man if afterburners will destroy the cancer forming material used by Dr. Paul Kotin who produced skin and lung cancer in mice by exposing them to auto exhaust. Ask Dr. Kotin if the same amount of cancer forming material escapes from auto exhaust when the dirtiest burning gasoline is used when compared with gasoline that has been cleaned up with the 98% sulfuric acid treatment. That question has gone unanswered all these years. WHY?

Dr. Haagen Smit, in his 1952 report, pinpointed the troublemakers (olefins) in present day gasolines that will react in sunlight to create ozone. He made smog in his laboratory. Ask him if he can make the same amount of smog with present day gasolines before and after the 98% sulfuric acid treatment. That question has gone unanswered all these years. WHY?

You hear very little about the report of Dr. Mader of APCD who reports a "substantial reduction" in olefins in auto exhaust when they are removed or a "reformed" fuel is used.

THE FOLLOWING TESTS NEVER HAVE BEEN MADE AND NEVER WILL BE MADE UNTIL THE PUBLIC DEMANDS THEM: "TESTS FOR TOTAL POLLUTANTS IN OUR AIR" as follows:

1. Tests for total pollutants in our air should be made on activated carbon filter to catch the dangerous gases, in addition to their present methods.
2. These tests should be made at breathing level: 5 or 6 feet above street level.
3. During peak traffic hours (7:30 to 9:00 A.M. - 4:30 to 6:00 P.M.) on WEEKDAYS.
4. At corner locations where traffic is heaviest.
5. Tests should be made on the days when we have the greatest amount of air pollution and compared with the results of tests on days when we have the cleanest air.
6. Auto exhaust tests should be made for TOTAL POLLUTANTS with fuels before and after the 98% sulfuric acid treatment. Road tests where air is clean.

RECOMMENDATIONS

By initiative petition, the citizens can place on the ballot the necessary laws to control the major sources of air pollution in Los Angeles:

1. Reduce the amount of pollution the refineries are now allowed to expel.
2. Twenty-four hour recorders on the STACKS OF REFINERIES showing a continuous record of total pollutants expelled (especially sulfur compounds).

RECOMMENDATIONS: (Cont'd)

3. Install standby facilities to take over when scavenger plants break down.
4. Specifications for minimum sulfur and other impurities in gasolines, industrial fuels and diesel fuels.
5. Sulfur content in all crude oil must be accounted for by each refinery.
6. All APCD records must be available to the public.
7. Eliminate all metallic poisonous additives in gasolines used in L.A.

CLEAN BURNING, HIGH OCTANE GASOLINE WITHOUT LEAD OR ANY OTHER ADDITIVE IS MARKETED BY THE AMERICAN OIL COMPANY EXPRESSLY FOR MODERN HIGH COMPRESSION MOTORS.

Gasoline used DAILY in this area contains 22 tons of lead, 8 tons of bromine, 8 tons of chlorine and NOW THE POISONOUS PHOSPHOROUS: See Public Health Bulletin 253. These poisons cannot be destroyed by burning and nearly one-half of the lead phosphate is retained in the lungs. TCP: TriCresyl Phosphate

1500 TONS OF SULFUR in the crude oil refined here DAILY, only 600 tons removed! HOW MUCH IS LEFT IN OUR FUELS AND HOW MUCH IS EXPELLED FROM REFINERY STACKS?

ASK FRANCIS PACKARD OF PASADENA HOW THE SCAVENGER PLANT BREAKDOWNS CORRELATE WITH OUR RECORDED HEAVIEST SMOG DAYS.

See Wagner White's "Smog-We're Losing the Battle -- and Why!" Where he reported that the stack emissions from every refinery stack had to be "RE-EVALUATED" because those records were missing from the APCD files!!!

Hear Chandler Phillips expose the hidden truth about our smog problem. There is no charge for his talks or these bulletins.

ATTACHMENT 3
(C-10)

STATEMENT BY KENNETH E. KINGMAN
CHAIRMAN OF THE AIR POLLUTION CONTROL COMMITTEE
OF THE WESTERN OIL AND GAS ASSOCIATION BEFORE
THE LOS ANGELES CITY COUNCIL -- FEBRUARY 25, 1959

Mrs. Wyman and gentlemen of the Council:

Before going further, please accept my thanks for this opportunity to say a little more. I had a copy, as you no doubt guessed, of Mr. Phillips' press release on the day preceding his speech. With that in mind I prepared a few remarks. But a short reply, with no charts and no stunts, is not a full answer to a long speech, complete with both charts and stunts. With that in mind, I am going to try to answer Mr. Phillips in more detail.

What Mr. Phillips has said, in effect, is that the oil industry is deliberately and intelligently engaged in a systematic program of poisoning all its customers. It will be my purpose to indicate that this is not so. In that connection, I propose to make the following points:

First: The oil industry has competent and qualified people in its employ, so that it can determine the effects of its operations. Where special qualifications have been required, it has gone out and hired experts in order to make certain that its products were not only as good as possible, but as safe as possible for the public. The industry can only sell its products to live motorists, not dead motorists.

Second: It is to the interest of the industry to have the smog situation cleared up. It has evidenced that interest by inventing wholly new machinery for that purpose. Where the answers to particular questions have been unknown, it has provided funds to support the research necessary. While providing the money for research, it has followed a strict hands off policy with respect to influencing in any way the results of research.

Third: Since what you are being asked to do is to believe that Mr. Phillips is right, and the rest of the world is wrong, I am going to have to say something about Mr. Phillips' qualifications.

Fourth: I am going to take up specifically each of Mr. Phillips' charges, with respect to the poisons which he says the industry is emitting into the atmosphere.

(C-11)

That, of course, is the essential part of this statement. But unless I first tell you who Mr. Phillips is, and what we have done, you won't be in a position to weigh the evidence that Mr. Phillips has not stuck to the facts.

Mr. Phillips has been engaged in presenting his interesting theory of smog formation to a number of civic groups throughout Southern California for several years and we have largely ignored his presentation in the belief that he is probably sincere and essentially harmless, but when he appears before you members of the City Council, who we know are seriously concerned with the welfare of everybody in this city, and deliberately accuses the oil industry of poisoning your air, then we feel it is imperative that we not only do our best to protect our industry from this unjustified and inaccurate attack, but also do our best to bring before you the true facts of the situation.

I believe that Mr. Phillips' presentation to you last week was interesting although it certainly smacked of a "medicine show." His showing of many charts and quoting of statistics may have been effective. Because of the great importance of this matter to all of us, we feel we must get to the true heart of the matter, even though we do not spare Mr. Phillips' feelings.

First: I want to talk about refinery personnel and the special consultants we use. I think this is important. We are charged by Mr. Phillips with poisoning the population. Our people don't think they are. Are they and the consultants they use competent? Do we take proper medical and scientific precautions?

The best illustration I can give in answer to these questions involves an example from Mr. Phillips' speech. I think you may remember that Mr. Phillips referred several times to a product known as tricresylphosphate, known as T.C.P. for short. He said that T.C.P. was poisonous, and that it made lead more poisonous.

T.C.P. is an additive to gasolines.

Before telling you what the oil company which makes it did, I am going

to ask you gentlemen: what would you do if you wanted to determine whether or not a product could be used without danger to the public?

I would suggest that you could do nothing better than to submit it to one of the experts on poisons, one of the toxicologists on the staff of one of our universities, and ask him for his report, and be governed by it.

That is exactly what was done. I have here an affidavit which I will hand to the Council as soon as I have read it to you. It reads as follows:

AFFIDAVIT

State of California

City and County of San Francisco

Charles H. Hine, being first duly sworn, deposes and says (1) that he is an Associate Clinical Professor of Occupational Medicine and Industrial Toxicology at the School of Medicine, University of California at San Francisco, (2) that in the years 1953 and 1955 he carried out extensive toxicity tests on tricrecylphosphate as a result of which he concluded that tricrecylphosphate as used in gasoline is not hazardous or toxic, (3) that if all tricrecylphosphate in gasoline were to appear in the exhaust from a motor vehicle, this would not exceed recognized safe limits for this substance. In 1953, in conjunction with the said studies, he requested and obtained engineering data in order to determine what products would be formed by the combustion of tricrecylphosphate in gasoline containing tetraethyllead and ascertained that all tricrecylphosphate is consumed in combustion in the engine, that it combines with lead to form lead phosphate, a material which naturally occurs in the bones and is a relatively harmless material, and that no toxic phosphorus compounds are produced in its combustion, and (4) that tricrecylphosphate is so harmless that it is a component of plastics.

Charles H. Hine M. D.

Subscribed and sworn to before me,

Florence C. Hackl, a Notary Public,

in and for the City and County of San Francisco,

this 20th date of February 1959.

My commission expires July 21, 1962

I suppose that since Mr. Phillips has said that tricresylphosphate is deadly, and Dr. Hine has said that it is not, you may wish to balance Doctor Hine's qualifications as against those of Mr. Phillips. I am, therefore, going to read the doctor's qualifications to you. They read as follows:

Qualifications of Dr. C. H. Hine

Professional Training:

1937 B.A. in Chemistry, St. Norbert's College, Wisconsin
1938 M.A. in Chemistry, University of Wisconsin
1942 Ph.D. in Toxicology, University of Wisconsin
1943 M.D., University of Wisconsin
1955 Board qualified Occupational Medicine

Membership in Scientific & Professional Societies:

American Industrial Hygiene Association
American Chemical Society
Industrial Medical Association
Academy of Occupational Medicine
Armed Forces Chemical Association
American Public Health Association
College of Preventive Medicine
California Medical Association
American Medical Association
Society for Pharmacology & Experimental Therapeutics

Present positions:

Associate Clinical Professor of Occupational Medicine and Industrial Toxicology, University of California School of Medicine

Associate Clinical Professor of Public Health, all campuses, University of California

Consultant to State of California, Department of Public Health, in the fields of toxicology and air pollution

Have conducted and directed research for twenty years in the field of toxicology.

Author of over 100 scientific papers.

Independent medical examiner for the California Industrial Accident Commission.

Presently directing research on a U.S. Public Health Service grant to determine the health effects of air pollution at the University of California.

If you go out and see our refineries, and we hope you will, you will find that the persons in charge are graduates of the finest universities in the country in fields such as petroleum engineering, chemistry, physics and the like. You will find that some of the finest laboratories in the country are maintained by the oil industry here. We should like to let you judge this for yourselves, and we invite each of you to go through our plants, and meet our people, to ascertain for yourselves their experience and their qualifications, and the facilities they have. I think you will conclude they are competent.

Second: Is it to the interest of the oil industry to prevent air pollution? Have we tried?

If our people are not incompetent, and, as Mr. Phillips charges, we are poisoning you, we must be poisoning you on purpose - presumably for profit.

Let us then ask the blunt question - Is smog profitable?

We have seventeen refineries in this basin. For each, Los Angeles is the most important and most convenient market. Everything that interferes with the growth of this area costs us money. Smog interfers, and smog is hard on our people.

The people, from the president and vice-presidents on down, who operate the refineries here, live in this basin. They have to breath the same air which you do. I think you should be able to believe that they do not wish to poison themselves.

Perhaps it is Mr. Phillips' notion that we are simply unwilling to spend the money needed to follow his theories. Actually, it is not our money that would be wasted; rather it is the public's.

The investments we make in our refineries, whether to make gasolines, or to prevent smog, and the cost of operating them, control the costs of gasoline.

If we stopped catalytic cracking, the oil companies would not pay for the change. The oil industry has to charge for its products, and it has to make a reasonable profit while we are so doing. If, at the behest of Mr. Phillips, the district adopts foolish and unnecessary rules with respect to refining, the effect is to add cost which raise the price of gasoline - becoming in effect Mr. Phillips' gas tax.

The real proof that the oil industry has sought to do what it can is to be found in its record.

I have here two documents which set forth that record.

First, there is the report entitled "Emissions To The Atmosphere from Petroleum Refineries in Los Angeles County" prepared by the United States Public Health Service, the Los Angeles County Air Pollution District, the State of California Department of Public Health, and the Western Gas & Oil Association. The report runs to one hundred pages or more, and I have a copy of it here. It was issued in 1958. On Page 4, the report states:

> "At the present time the petroleum refineries in Los Angeles County have the lowest emissions to the atmosphere of any segment of the industry in the country because of control programs."

Next, I have here a report to the State Legislature submitted by Mr. Chass, who is the Chief Engineer of the Air Pollution Control District. The survey is entitled "Progress Report on Industrial Controls". Here is what it says about our oil industry:

> "Vapor losses from hydrocarbon storage tanks have been curbed through enforcement of Rul 56, enacted in 1953. The first control measure of its type to be enacted anywhere in the world, the rule specified that all tanks of greater than 40,000 gallon capacity must be controlled when they

are used for the storage of a petroleum distillate having a vapor pressure of 1.5 pounds per square inch absolute or greater. This one rule has resulted in a reduction of hydrocarbon vapor losses of approximately 250 tons per day. It affects some 500 tanks and 16,000,000 barrels of storage capacity. The degree of compliance is 100 per cent.

Several years ago, great clouds of black smoke were released from emergency flares whenever they were used to burn the excess gas surges created by upset or abnormal refinery operations. Some of the first smokeless emergency flares in the nation were designed, proved by experimentation, and built in Los Angeles County. After their development, they were adopted and installed throughout the refining industry in Los Angeles County. Smoke emissions from this particular source have not just been reduced; they have been eliminated.

Attempts to control oil-effluent water separators began in 1953 and led to the enactment of Rule 59 in 1955. Requiring the control of separators, this rule has been effective in preventing the emission of malodors and approximately 100 tons per day of hydrocarbons. Compliance with the rule is 100 per cent and, so far as is known, this, too, is the only area of the United States in which controls for separators are required and used.

Rule 61, which was adopted in 1956, requires that hydrocarbon vapors from large volume loading of gasoline into tank trucks be collected and disposed of in an approved system.

Approximately 30 tons per day of hydrocarbons now are prevented from being discharged into the atmosphere during loading operations. There is no other area where vapor losses from gasoline loading are prevented in this way and, in fact, controls did not exist prior to their development here.

Catalytic cracking units in most other refining areas can be identified from afar by their emission of catalyst dust or a persistent plume. Electrical precipitators and centrifugal collectors are almost universally used here for catalyst dust collection and such losses are no longer a problem. On fluid catalytic cracking units, carbon monoxide waste heat boilers are being installed. There are six fluid catalytic cracking units in the County. Of the four largest, one is already equipped with a carbon monoxide waste heat boiler and two others are being so equipped.

In recent years, all vacuum jets (once responsible for emissions of 17 tons per day of hydrocarbons) have been controlled by condensation followed by the burning of noncondensable vapors. Light hydrocarbon vapor losses from centrifugal pumps with packed gland seals have been reduced from 35 tons per day to 5 tons per day. This has been accomplished through their replacement or conversion to mechanical seal pumps. Accumulator vents and relief valves now are vented to recovery systems or other approved disposal systems.

Other problem emissions controlled include the oxidation of sour water or the conversion of the ammonia contaminant to ammonium sulfate and the hydrogen sulfide to sulfur."

Mr. Phillips has said that Los Angeles has the worst refineries in the world, and therefore we have smog. How is this to be reconciled with the fact that Los Angeles refineries were the first in the world subject to rules governing vapor losses from storage tanks; the first in the nation to have smokeless flares; the first in the United States to control oil-water separators; and is the only area where hydrocarbon losses during loading operations are controlled. How is this to be reconciled with the fact that unlike most areas, we have electric precipitators on our catalytic cracker stacks.

Mr. Phillips has also said a good deal about sulphur, and I therefore want to read to you what Mr. Chass says on Page 7 of his report:

"Today Los Angeles is the only major petroleum refining center that has accomplished substantial control over sulphur oxide emissions."

To put the matter as simply as possible, where there was something which would help, we have done it. We have not, however, spent your money pursuing the whims of Mr. Phillips. If Mr. Phillips' sugrestions made any sense we would follow them.

At this point, it seems to me, you would naturally be puzzled. Mr. Phillips has represented himself to be a chemist and engineer of eighteen years' experience in petroleum refining. Why, you must wonder, is there this conflict in opinion? How could such a person be completely wrong?

I personally care nothing about Mr. Phillips' past. But I don't see how you can understand what he has done, without knowing something about it. Therefore, I must say a little.

Mr. Phillips' press release, which was read when he was introduced, reads as follows:

> "You may be interested in that portion of my background which I believe is pertinent insofar as my research is concerned: I worked five years for the Federal Government as a special investigator. I worked eighteen years for the Petroleum Industry, four years as a chemist in the midwest and fourteen years as an Engineer on the West Coast. During World War II, I was transferred by a major petroleum company to their Wilmington Refinery where I handled the Government paper work relative to the change in refining methods which took place at that time. I saw their first Catalytic Cracker in this area go into operation. During those war years I also attended U.S.C. night classes as often as four nights each week where I completed petroleum refining and technology courses. After the war I was transferred to their San Francisco office where I worked four years and I was on their San Francisco payroll as an engineer prior to my transfer to Los Angeles in 1948. I was their Burbank District Engineer four years and when I left that company my title was Los Angeles District Engineer."

Mr. Phillips states, first, that he worked for four years as a chemist in the Mid-West before he came out to California. Did he ever work as a chemist? When he came here he asked for work with an oil company here. Then, on July 24, 1941, Mr. Phillips executed an employment application which purported to set forth his qualifications. The third line of that application calls for "Occupations in which you are expert". He gives three, and I quote, first, "draftsman"; second, "Accounting"; third, "Electrician and machinist".

On the reverse side of the application he states in detail his working experience. It reads as follows:

"During the period Oct. 1939 to July 1940, I was engaged in Public Accounting Work.

Attended Oak Cliff High School (1921-1925) Dallas Texas. While attending High School I studied drafting & Chemistry and worked evenings and saturdays as a draftsman for the Trinity Lumber Co. of Dallas Texas. 6-28 6-30 After two years with this company I went with the Southern Ornamental Iron 6-30 Wks. where I worked as Draftsman as well as layout man in the shop. After about 2 years this company moved to Arlington Texas and I was employed by Weaver Ore Iron of Dallas, as a draftsman. I have not been unemployed at any time in excess of three months and there have been no unpleasant circumstances in connection with my employment.

I am familiar with all types of Oil Field Construction work as I can perform Electrical, Mechanical & Carpentry work and have been connected with the field construction work in a number of capacities."

is a photocopy of that application for you. There is no mention of any rience as a chemist.

What of his subsequent experience?

He states that he was a "District Engineer" for an oil company here. What district engineer? I have here the company's statement of duties of a district neer. It is two pages long, and I am not going to read it all. The gist of it hat a District Engineer is a person who plans and supervises construction, ir, painting and maintenance of gas stations.

It is possible that Mr. Phillips merely proves again the ancient adage a little knowledge is a dangerous thing.

Mr. Phillips left his last employer in the oil industry after a dispute with them. I don't think the merits of that dispute are material here. The fact that rightly or wrongly, he felt unjustly treated may help to understand him.

I do not think, under the circumstances, that it is merely a coincidence that he gives top billing in his speech to tricrecylphosphate, which is a product of his last employer.

With this information, I leave it to you to consider the origin of Mr. Phillips' personal battle with the oil industry.

Fourth: With this background in mind, I want to talk about the specific "poisons" which Mr. Phillips says that the oil industry is putting into the air.

First: Here, again, is what he says:

> "Examination of the gasoline records show that 22 tons of lead, 8 tons of bromine, 8 tons of chlorine with increasing amounts of phosphorous, gums and tars is now in the gasolines used "DAILY" in the Los Angeles area."

Since Mr. Phillips spent a great deal of his time talking about lead, let us look at lead first.

So far as I understand it, what Mr. Phillips says is that lead is a poison, and therefore lead should not be put in gasoline. Certainly, lead is a poison in the sense that one should not eat lead. However, one cannot drink gasoline either. This is hardly a test.

What does determine the use of lead then?

The world contains many materials which are not dangerous in light doses, but are dangerous in large. Aspirin is an example. The question is how much is too much? Now lead compounds have been used for paint; for medical purposes; for batteries; and for other purposes for hundreds of years. The scientists know what tolerances are safe, and what compounds are dangerous. I gave you those tolerances when I spoke last week. In that connection, I would now like to ask you to look briefly at a chart I have here. You will see the vast difference between the maximum allowable and the percentage found in Los Angeles air.

Mr. Phillips has also, and repeatedly, said that there is more lead in the gasoline in Los Angeles than elsewhere in the United States.

In order to eliminate any doubt on this point, I have brought along the two publications of the U. S. Bureau of Mines which cover their surveys of lead in gasoline. For the Summer of 1958, the figures for lead in regular gasoline are as follows:

> The Los Angeles figure is 1.33 mileliters per gallon. The average for all areas is 1.87 mileliters per gallon. Our average was over 25% lower, not higher. On premium gasoline, all areas were very close together. The average for all areas was 2.45 mileliters per gallon, and ours was 2.65, or about 4% above the average. Taking premium and regular together, most of the country used more lead than Los Angeles. The figures are not exactly the same for winter, but the pattern is the same.

I would appreciate your looking at the actual figures, so that this is not left on a simple basis of conflict between Mr. Phillips and myself.

In addition to lead, Mr. Phillips complains of the intrusion of 8 tons of chlorine a day.

Now I don't know where Mr. Phillips gets this figure from. But, right or wrong, this figure is a perfect example of the manner in which an uninformed person can become confused.

Everyone knows chlorine was used as a poison gas during World War I. That, no doubt, is why Mr. Phillips mentions it. An informed person would remember also that every drop of water consumed in Los Angeles County is treated with chlorine as a disinfectant. You will also remember that each day each of us uses sodium chloride on our food. He may also stop and remember that one's

wife uses sodium hypochlorite, which releases gaseous chlorine, as a household bleach, and nearly every swimming pool in the county is purified in the same way. Chlorine is a material which, in extreme concentration, can be deadly. Lightly concentrated, it is an effective disinfectant, and a friend to man. No one has ever found any significant amount of chlorine in Los Angeles air. This is just scare talk.

Bromine is in the same class as chlorine. Some of you may remember that it used to be said that the best cure for a hangover was to take a bromide.

Finally, there is Sulphur:

With respect to sulphur, I can perhaps best quote the report of the Governor's Special Committee on Air Pollution. Its Chairman was Dr. Arnold O. Beckman, of Pasadena. Its members were:

Dr. A. J. Haagen-Smit, Professor of Biochemistry, California Institute of Technology;

Dr. Joseph Kaplan, Head of Department of Meteorology, U.C.L.A.;

Dr. L. Reed Brantley, Head of Department of Chemistry, Occidental;

Dr. John W. Poole, Head of Department of Science and Mathematics, John Muir College, Pasadena.

What it said was simply:

"In most communities affected by air pollution, sulfur dioxide has been a significant contaminant. Because of the activities of the District and the cooperation of industry, the sulfur dioxide content of the air in Los Angeles County has now been reduced below the 1940 level. Sulfur dioxide is not now a major problem."

I submit that the opinions of these gentlemen are entitled to as much weight as is that of Mr. Phillips - perhaps a little more.

So much for Mr. Phillips "poisons".

What remains of his views?

Mr. Phillips has also expended some time on catalytic cracking. I think it might help if I explained what cracking is, and what it does.

Gasoline is not a single compound. It is composed of a number of hydrocarbons. A hydrocarbon is simply a compound made up of hydrogen and carbon. The difference between hydrocarbons depends on the number of atoms of carbon and the number of atoms of hydrogen in the compound, and the way in which they are linked together.

Many hydrocarbons are heavier and have a higher boiling point than we need. These we break apart, into lighter hydrocarbons. This is called cracking. In a thermal cracker, heat alone is used. In a catalytic cracker, the hydrocarbons are heated in the presence of a catalyst. There is no essential difference in the process save that one is more efficient than the other. In both processes, the outside air is excluded carefully from the cracking process for, if the air was not excluded, at the temperatures involved, the cracker would explode.

There are some mechanical differences. Very briefly, the chief one is this. In a catalytic cracker, carbon collects on the catalyst in the form of coke. This has to be burned off of the catalyst. This is done in what is called a regenerator. There is no essential difference between this regeneration process and any other process where you burn a carbon containing fuel as, for example, when you burn coal.

Catalytic cracking is not a significant factor to air pollution. In order to clear up any misunderstanding on this account, I have here a chart which shows contribution of a catalytic cracker as against other sources. My figures are based on the joint survey conducted by the U. S. State Department of Health, the Air Pollution Control District, and the oil industry.

There is the question of exhaust controls.

In the oil industry, our object has been to put our own house in order, not to comment on the products of the auto industry. To the extent, however, that Mr. Phillips says "you don't need auto exhaust controls, what you need is more regulations on the refineries", he has put us in a position where we cannot help saying something about exhaust controls. Are exhaust controls useful?

Mr. Phillips started his speech Thursday, by quoting a 1952 article by Dr. Haagen-Smit. I can best answer by quoting a later article, entitled "The Control of Air Pollution in Los Angeles" by A. J. Haagen-Smit (Engineering and Science Monthly), printed in December, 1954. What he said was as follows:

> "The other large source of hydrocarbons is automobile exhaust. The exhaust contains both ingredients for the production of smog--hydrocarbons and oxides of nitrogen--and this ready-made mixture gives all of the typical smog symptoms upon irradiation with sunlight."

Again, I have here the exact article. You would all profit by reading it.

Like opinions can be quoted almost ad infinitum. I know of no one who has conducted any research on smog who does not feel that auto exhaust is the key to the problem, and an afterburner appears to be the only answer. In that behalf, I again quote Dr. Haagen-Smit from the same article:

> "The main ingredients that we want to remove from the exhaust by such devices are of hydrocarbon nature, and the only practical way to remove them is by combustion. At the present time, two so-called "afterburners" show definite promise."

Finally, I come to some stunts.

Mr. Phillips put on two "stunts". In the first place, he has put some sulphuric acid in two gasolines. All this test proves is that you should not put sulphuric acid in your gasoline.

In the second stunt, Mr. Phillips has two lamps, one containing what he says is a white unleaded gasoline, and the other containing the gasoline ordinarily burned here. Concerning this, I have two observations to make. The first is that every time Mr. Phillips does it, he risks his own life, and that of everyone present. Gasoline is not a safe fuel to burn in a lamp. In the early days of refining, when kerosene lamps were common, serious accidents were caused by the mixture of even a small amount of gasoline into kerosene.

The second observation I have is that any gasoline can be burned without smoke if the supply of air be properly adjusted to the supply of gasoline. All that Mr. Phillips' demonstration proves is that he had the wick too long on the one lamp, and cut to the right length on the other.

Mr. Phillips has suggested that because Los Angeles products have more high boiling range hydrocarbons than other areas do, we are giving you "dirty tail ends".

The idea is nonsense--this idea seems to be the outgrowth of some exuberant advertising by an Eastern refinery. Gasoline is a blend of different hydrocarbons - different compounds. Some hydrocarbons are like water in that they will boil with temperatures around 212 degrees. Some are like alcohol in that they will boil at very low temperatures. Some are like mercury in that you have to heat them to very high temperatures before they will boil. Water, which is a high boiling point material, is not dirtier than alcohol, which is a low boiling material. In gasoline, some low boiling point materials are used, so that there will be vapor in your engine on a cold morning, and your car will start. High boiling point materials are blended so that a portion of the gasoline will not readily vaporize in hot

weather. If all of it would vaporise easily, your car would vapor-lock the moment you started it up. The mixture of each has nothing to do with cleanliness or dirtiness.

I should add that the Bureau of Mines pamphlets I gave you a little while ago also show the end boiling points of Pacific Coast gasolines and gasolines elsewhere. There is no substantial difference.

By way of conclusion, it seems to me that we should perhaps depart from the world of fantasy, and deal again with some of the concrete facts of air pollution. It seems to me that you may very well want to know precisely what is the part of the oil industry in air pollution. With that in mind, I have prepared here a large chart which shows the relative amount of each of the principal materials that go into the air from other sources as compared with refinery emissions. I think you will note that because of the controls that have been put on the refineries, we have come to be a very small part of the whole, and we are still reducing that part.

Thank you.

ATTACHMENT 4
(C-34)

STATEMENT BY KENNETH E. KINGMAN,
CHAIRMAN OF THE AIR POLLUTION CONTROL COMMITTEE
OF THE WESTERN OIL AND GAS ASSOCIATION BEFORE
THE HEALTH AND SAFETY COMMITTEE OF THE LOS ANGELES CITY COUNCIL
MARCH 24, 1959

Gentlemen:

It is my understanding that this committee is considering a resolution calling for a Grand Jury inquiry into all aspects of the smog problem.

I want to say for the oil industry, that we would welcome such an investigation. We think the solution of the smog problem is difficult enough, even without all the confusion, misunderstanding and superstition that exists about it. There has been an immense amount of work done by industry, by independent researchers, by the Air Pollution Control District, by Federal scientists, and by the scientists of our universities to find out what causes smog, and what cures it. Despite all this, smog has not been cured. The result is, the people feel that nothing has been done. It is our desire that all the light possible be shed on this, and we think a Grand Jury investigation might help.

When I was here last, I spoke largely by way of answer to the charges of Mr. Phillips. I expect he will say pretty much what he said before. I don't think it will be helpful if I say over again what I said then. Rather, what I would like to do is talk about what gasoline is, and what it does and does not contribute to smog.

What I would like to do is tell you a little about:

First: What is gasoline and what is in it?

Second: What happens to gasoline when you burn it in your car?

Third: What does this have to do with smog?

Statement of Kenneth E. Kingman
to Health and Safety Committee
of The City Council

First, then - What is in gasoline?

Gasoline is made up of hydrocarbons. Hydrocarbons are chemical compounds, composed of atoms of hydrogen, and atoms of carbon linked into molecules. There are literally hundreds and thousands of hydrocarbons.

There are three main families of hydrocarbons which are present in gasoline.

The first is what are called paraffins. You can best visualize paraffins if you think of a series of carbon atoms being linked together in a row, and if you think of the hydrogen atoms as being attached to the carbon atoms around the edges of this chain of carbon atoms. There are light paraffins, like propane and butane. There are paraffins that are so heavy that they are like a wax. The paraffins used in gasoline range from butane to products which do not boil until you heat them up to around 400 degrees. Different paraffin compounds have different characteristics - although they are a family, they are not the same.

The second main family of hydrocarbons are what are called olefins. Most of them are like the paraffins in some aspects. Many olefins have carbon atoms strung out in a straight-chain, with hydrogen atoms alongside, just as in paraffins. The difference is that olefins have two less hydrogen atoms than a paraffin to each molecule. This makes a difference in the way they behave. Again, olefins are not all the same. There are light and heavy olefins. Different olefins behave differently.

The third major family are what are called aromatics. The main difference between aromatics and other hydrocarbons is that in aromatics the carbon atoms are not stretched on in a line. You can think of them as being

arranged in a circle, with hydrogen atoms attached to them. There are more complicated variations of each of these forms, but those are, in a very simplified way, the essence of the difference.

Each gallon of gasoline sold in Los Angeles County normally contains some of each. All of these hydrocarbons are the result of the normal methods of petroleum refining, as carried out in Los Angeles County and the rest of the country. Combinations of different hydrocarbons are blended by each Company with additives - other material like lead tetraethyl, so as to meet the performance requirements of our cars. All maintain large plants and large laboratories directed to making as good a mixture as possible, which will behave as well as possible in a car engine.

Now it is generally believed today that gasoline vapors in the air contribute to smog. How do they get into the air?

Because of the installation of vapor recovery systems, floating roof tanks, and other extended controls, relatively little is lost from refineries. Most of the hydrocarbon vapors in the Basin come from automobiles.

This brings me to my second question - What happens to gasoline inside our automobiles? Two things happen to gasoline when it is in your car. Some of it evaporates from the tank and the carburetor bowl. The balance goes into your engine, and is either consumed in the engine, or passes through it, unburned or partially burned. When burned completely, it becomes harmless carbon dioxide and water vapor. When it passes through or is partially burned, it is changed. For example, gasolines which have no olefins in them at all may produce an exhaust

which will have as high as twelve percent olefins - perhaps higher.

Not only are other hydrocarbons changed into olefins, but compounds appear in the exhaust which do not exist at all in the gasoline. Thus, for example, the Air Pollution Foundation has found that Butadiene, a highly irritating substance, is found in the exhaust, although there is no Butadiene in anyone's gasoline. Formaldehyde is found in exhausts, and there is no Formaldehyde in anyone's gasoline.

Why, you may ask, does this happen? The explanation is extremely simple in broad terms, and extremely complicated in detail. Broadly, what happens is that in part, the gasoline is cracked in the engine by the heat within the cylinder. In addition, there are reactions between the hydrocarbons, air, and the products of combustion. The most significant products of combustion are nitrogen oxides. These nitrogen oxides are formed from the nitrogen which is in the air, and the oxygen which is in the air; the union is brought about simply by heat of the combustion in the engine.

I cannot emphasize too strongly that this happens wherever combustion exists, and there is no way to avoid it presently known, if we are to have combustion.

This brings me to my third point, which is simply - What does all this have to do with smog?

Broadly, it appears that hydrocarbons from the exhaust react with nitrogen oxides from the exhaust to produce an irritant.

There are some of the families of hydrocarbons which seem to be more important in this connection than others. As a family, olefins in the exhaust seem to be worse than aromatics or paraffins. Some of those which are worst of

all, for example, Butadiene, are compounds which are not found in gasoline at all. Because it is possible to get eye irritation by burning gasolines consisting of pure paraffins, or pure aromatics, no competent person believes it is possible to eliminate eye irritation from smog without eliminating nearly all of the hydrocarbons which presently pass unburned into the air from the exhaust. This is why there is general agreement that some sort of an afterburner is essential.

There has been some talk of reducing evaporation by lowering the vapor pressure of gasoline. Most of us feel that this is not effective, because in order to lower the vapor pressure, about all one can do is take out butane, and butane is one of the least reactive hydrocarbons. If one takes out too much butane, the customer will have trouble starting his car on cold mornings.

About all I would like to add is that the oil industry has spent a great deal of effort and money to seek definitive answers to these questions, and they are still doing this.

We propose to make every intelligent contribution we can. And, at this time, I'd be glad to answer any questions that I may.

REPORT OF THE SUBCOMMITTEE ON C_9 - C_{12} AROMATICS

Presiding: C. H. Hine, M. D. for Kieffer Davis, M. D.

The Subcommittee on C_9 - C_{12} Aromatics met at 2:00 P. M., April 24, 1959 in the Sherman Hotel, Chicago.

MEMBERS PRESENT:	MEMBERS ABSENT:
Dr. Frank	Dr. Crookshank
Dr. Hine	Dr. Potts
Mr. Spence	Dr. Davis
Mr. Hammond	Mr. Bent

Dr. Nau submitted a progress report which was reviewed by the committee.

The major features of this report were:

1. Acute toxicity data extended to rats confirmed the order of comparative toxicity previously reported.

2. Experiments recently completed include:
   a. N. Decane - 500 ppm
   b. C_9 - C_{10} - 616 ppm
   c. Benzene -1000 ppm

3. Experiments in progress include repeated exposures of rats to:
   a. Benzene - 200 ppm
   b. C_9 - C_{10} - 200 ppm
   c. C_{11} - C_{12} - 200 ppm and 500 ppm

4. Experiments remaining to do with rats:
   a. Benzene - 50 ppm
   b. C_9 - C_{10} - 50 ppm
   c. C_{11} - C_{12} - 50 ppm
   d. Repeated exposure of monkeys to include:
      1. C_9 - C_{10} at 616 and 200 ppm
      2. C_{11} - C_{12} at 200 ppm
   e. Short term exposure:
      1. C_9 - C_{10} at 616 ppm for 3X (18 hours) on alternate days.
      2. C_{11} - C_{12} at 500 ppm for 3X (18 hours) on alternate days.
      (These animals will be set aside for 9 months to observe possible eye and other signs of biological changes.)
   f. Sensory studies to determine threshold values for:
      1. C_9 - C_{10}
      2. C_{11} - C_{12}

5. Conclusions are:
   a. Early sign of toxicity is a shift in a poly-lymph ratio.
   b. Immediate drop in white blood count was seen for Benzene - 8th day, C_9 - C_{10} - 1st day, and C_{11} - C_{12} - 4th day.
   c. Persistant fall in white blood count occurred for all fractions in severe and prolonged exposures.
   d. Irreversible bilaterial cataract was observed in animals two months after exposure to C_9 - C_{10} (at 616 ppm - 2400 hours) had ceased.

The subcommittee believes that the experimental work now in progress can be completed by 1 July 1960. However, if further unusual findings develop or if for other reason it appears desirable to continue the work past this date, it is recommended that additional funds in the amount of $20,000 be appropriated for continuance of this project.

Submitted by
Kieffer Davis, M. D., Chairman

APPENDIX E

REPORT OF THE SUBCOMMITTEE ON DERMATOLOGY
Leo J. Wade, M. D., Chairman

MEMBERS PRESENT:

Allan Dooley
James Osborn, M. D.
Leo Wade, M. D.

MEMBER ABSENT:

C. H. Baylor, M. D.

GUESTS:

W. H. Barcus
Nils Gothard, M. D.
K. G. MacKenzie
B. B. Reeve, M. D.

1. The I.H.F. brochure and wall placard re dermatitis secondary to contact with petroleum products is available for answering customer complaints etc. It is suggested that distribution to various trade journals is desirable. This should be done by the I.H.F.

2. It is reported by one practitioner that an increasing number of cases of "creeping eruption" are occurring among petroleum production workers in Louisiana. He proposes to publish a report of his findings shortly. His identity is unknown to this subcommittee.

Those present at our subcommittee meeting are not aware of any problem.

It is proposed, therefore, that this subcommittee solicit the aid of those companies with producing operations in the Louisiana, Mississippi, and Florida areas in the following matters.

1) Are increased numbers of cases occurring?
2) How numerous are they?
3) Is time lost from the job?
4) What specific clinical information is available re the etiological agent, mode of infection, course of disease, and geographical distribution of cases?

With such information your subcommittee will be in a position to make a more specific evaluation of the alleged problem.

Leo Wade, M. D., Chairman
Allan Dooley
James Osborn, M. D.

REPORT OF THE SUBCOMMITTEE ON MEDICAL POLICIES AND ADMINISTRATIVE PRACTICES

R. F. Schneider, M. D.
Chairman

Since the last meeting of the Medical Advisory Committee in November 1958, this subcommittee has been active in investigating the following two items:

I. The routine use of low-back x-ray examination as part of the pre-placement physical examination.

II. Finalization of the "Guiding Principles in Regard to the Scope, Objectives, and Functions of Occupational Health Programs in Petroleum Operations."

In relation to Item I, the subcommittee upon reviewing the available literature (attachment A) and upon receiving responses to a questionnaire from 22 Medical Directors of different companies (attachment B), finds that there appears to be no unanimity of opinion as to the desirability or advisability of carrying out on all applicants for employment an x-ray examination of the low back as part of the pre-placement physical examination.

The subcommittee, therefore, recommends:

1. That the pre-placement physical examination include a more detailed history and a more complete physical examination referable to the musco-skelatel system in order to more accurately determine the presence of past or current disease condition. Then when more complete evaluation is required to establish the diagnosis, determine the degree of disability or to establish a base line, an x-ray examination of the lumbo-sacral spine in 5 views is a useful and desirable procedure.

2. That the subcommittee devise a program which would make it possible for each member of the Medical Advisory Committee to record on a comparable basis their department's experiences in relation to incidence, frequency, morbidity, and disability referable to conditions of the lumbo-sacral spine. This program to be proposed to the members at the MAC meeting in November 1959.

In relation to Item II, the subcommittee reports that all of the members have not, as yet, submitted their comments. Those members will be contacted and again requested to reply. It is expected that the subcommittee will be able to make a final report and recommendation to the MAC relative to this item at the regular meeting in November 1959.

ATTACHMENT A

THE USE OF PRE-EMPLOYMENT BACK X-RAYS IN INDUSTRY
(A Review of the Literature)

This represents a summary of twenty-one papers concerned with the use of pre-employment back x-rays in various industries. These twenty-one papers were written by thirty-two different authors of whom seven were orthopedists, fourteen radiologists, and eleven medical directors of various industries with no affiliation with either of the above mentioned specialty Boards.

A total of 38,820 patients were evaluated in the twenty-one studies.

In general, abnormalities of the lower spinal vertebrae may be grouped under three headings(1)

A. Degenerative lesions
   Osteoarthritis 13.6%
   Degenerative disc 1.13%

B. Post traumatic lesions
   Crush fracture of the body of the vertebrae 2.3%
   Fracture of the transverse process 0.63%

C. Congenital or developmental lesions
   Spina bifida occulta 19%
   Sacralization of the transverse process 5.63%
   Spondylolisthesis 4.56%

The above are the most common abnormalities of each group. The incidence varied quite widely. For instance, one group had a spina bifida occulta in 26%(2). Another had only 2%(3). The average incidence of this condition and one which was found in most papers, however, was 19%.

Regardless of the variation in incidence, all of those authors who believed in the value of pre-employment back x-rays were in agreement that any of the above conditions were cause for rejection. In addition to this, they were in almost unanimous agreement that previous surgical defects of the spine or the evidence of radio-opaque material in the neural canal were also sufficient cause for rejection of an applicant. Some authors added many more defects on which rejection could be based, with one author listing nine other conditions including such seemingly benign abnormalities as Schmorl's nodes.(3)

There is strong feeling among some authors that these x-rays should not be used to deny men employment(7,1,13) but should be of value in placing men in the proper jobs and add impetus to a program of education to do a given job properly.(21)

Those who advocated rejection on the basis of abnormal x-ray findings provided some interesting statistics to back their arguments. A group with spondylolisthesis incurred a 50 per cent increase in time loss over a control group in whom the findings were negative.(17) A group with prior surgical defects had a time loss thirteen times as great as that of the control group.

In terms of cost, back injuries occurring in an employee with a previously normal back, averaged five-hundred dollars per case compared with fifteen-hundred dollars per case in individuals whose preinjury x-rays had revealed some congenital abnormality of the spine.(21) Also mentioned was the fact that adoption of a pre-employment x-ray program was thought to be responsible for a decrease for as much as

56 per cent in the incidence of back injuries.(3)

Those authors who were in favor of such programs stated that one of the important reasons for adopting pre-employment back x-rays routinely would be the availability of these films for comparison in the event of future trauma. These authors were unanimous in feeling that such x-rays had saved their companies many times what the cost of the program had been.

On the other hand, those who were against such programs argued that 80 to 90 per cent of all back injury cases had negative x-rays plus no previous history of back injury. Most of these were in the soft tissue damage catagory where x-rays could be of no value before or after the injury.(10)

In general, it may be said that the orthopedic surgeons and radiologists favored the adoption of such programs, while the medical directors were more cautious in their approval or in some cases were definitely against the program.

It is of interest that none of the authors, of whom fourteen were radiologists, even mentioned any x-ray exposure hazard connected with routine pre-employment low back films.

TGR:mhg
4/16/59

BIBLIOGRAPHY

SUBJECT: Pre-Employment X-Ray Examination of the Back

SOURCES OF REFERENCES: Quart. Cum. Ind. Med. 1948-June 1956
Current List of Med. Lit. 1956-Nov. 1958

1. Allen, M. L. & Lindem, M. C. Significant roentgen findings in routine pre-employment examination of lumbosacral spine. Am. J. Sug. 80:762-766. 1950.

2. Barton, P. N. Analysis of 50 cases of back pain. Ind. Med. 18:391-393. 1949.

3. Becker, W. F. Preplacement examination program for workers assigned to heavy jobs (with special reference to prevention of back injuries). Ind. Med. 22:8-10. Jan. 1953.

4. Becker, W. F. Prevention of back injuries through preplacement examinations. Ind. Med. & Surg. 24:486-490. Nov. 1955.

5. Colcher, A. E. & Hursh, A. M. W. Pre-employment low-back x-ray survey; a review of 1500 cases. Ind. Med. 21:319-321. July 1952.

6. Coulter, E. B. Prevention of back disability through pre-employment x-rays. Ind. Med. & Surg. 25:523-524. Nov. 1956.

7. Diveley, R. L. & Oglevie, R. R. Preemployment examinations of the low-back. J. Am. Med. Assn. 160:856-858. Mar. 10, 1956.

8. Fullenlove, T. M. & Williams, A. J. Comparative roentgen findings in symptomatic and asymptomatic backs. Radiology. 68:572-574. April 1957.

9. Henry, G. W., Larsen, I. J., & Stewart, S. F. The roentgenologic criteria for appraising the human back as an economic asset or liability. Am. J. Roentgen. 79:658-672. April 1958.

10. Horgan, J. D. Setting realistic medical standards for employment. Texas Med. J. 54:77-80. Feb. 1958. (Includes author's opinion against pre-employment back x-rays)

11. Iverson, R. M. Pre-employment roentgenograms of the lower dorsal and lumbosacral spine in young men. Minnesota Med. 39:771-774. Dec. 1956.

12. Iverson, R. M. Roentgenographic examinations of the lower back on applications for employment. J. Lancet. 75:111-113. Mar. 1955.

13. MacDonald, W. F. Pre-placement low back x-ray program. Ind. Med. & Surg. 27:475-476. Sept. 1958.

14. Moreton, R. D. & others. Radiologic considerations in preplacement examinations of the lumbar spine; summary of four thousand consecutive cases. Radiology. 63:667-672. Nov. 1954.

15. Moreton, R. D., Winston, J.R. & Bibby, D. E. Value of preplacement examinations of the lumbar spine. Radiology. 70:661-665. May 1958.

16. Reiner, L. Pre-employment x-ray survey of the lumbosacral spine in bus drivers. Ind. Med. & Surg. 27:15-17. Jan. 1958.

17. Runge, C. F. Pre-existing structural defects and severity of compensation back injuries. Ind. Med. & Surg. 27:249-252. May 1958.

18. Runge, C. F. Roentgenographic examination of the lumbosacral spine in routine pre-employment examinations. J. Bone & Joint Surg. 36-A:75-84. 1954.

19. Simril, W. A. Consideration of pre-existing conditions, congenital and acquired, in the preplacement spine examination. Radiology. 70:654-660. May 1958.

20. Stewart, S. F. Preemployment examinations of back. J. Bone & Joint Surg. 29:215-221. Jan. 1947; Med. Depor. y trab. 12:1470-1483. April 1948.

21. Wilkins, G. F., Shilling, J. W. & Showalter, E. J. Industrial back injuries, Bell System; results of three-year survey. Arch. Ind. Health. 15:91-100. Feb. 1957.

22. Winston, J. R. & Moreton, R. D. Objectives of the preplacement X-ray investigation of the low-back area. Radiology. 63:664-666. Nov. 1954.

ATTACHMENT B

PRE-EMPLOYMENT BACK X-RAY EXAMINATIONS IN THE PETROLEUM INDUSTRY
(A Review of Responses to Questionnaire)

Letters were sent to twenty-four medical directors of the petroleum and allied industries asking the following questions:

1. Does your company use a pre-employment back x-ray examination for applicants being considered for any type of work? If so, for what job categories is this type of examination a pre-employment requirement?

2. If you have not used this type of pre-employment examination in the past but are planning to do so in the future, what personal experiences have led you to adopt this type of examination.

3. If you have used this type of examination in the past, do you have any statistics available as to the number of cases of back abnormalities discovered by these x-rays which would not have been discovered by a pre-employment physical examination?

Of the twenty-four Medical Directors questioned, twenty-two sent in replies an analysis of which follows: Of the twenty-two replies, ten were either in favor of the routine x-ray examination of the lumbar spine or preplacement examination or were already using it to different degrees of application, eight were definitely against using this procedure as a routine measure, and four were undecided.

X-ray abnormalities of the low back area which were reported as cause for rejection of an applicant were:

1. Spondylolisthesis,
2. Spina bifida occulta,
3. Sacralization either unilateral or bilateral,
4. Evidence of previous low back surgery,
5. Radio opaque material in the neuro canal.

The percentage of applicants reported as rejected for the above listed conditions varied from 5 per cent to as high as 35 per cent of all applicants examined. The average in the ten companies using the program was 18 per cent rejection.

Those who favored the use of the routine pre-employment low back x-rays gave the following reasons for thinking that the program was of definite value:

1. By rejecting applicants with the conditions listed above, they were able to show definite decreases in the number of low back accident cases,
2. The time lost due to low back accident cases,
3. A decrease in the cost to the company for compensable low back injuries.

The number of low back accident cases was said to decrease by 35 to 40 per cent in the first twelve month period after the adoption of the pre-employment low back x-ray program. The time lost due to low back injuries was decreased by an average of 45 per cent in the same twelve month period. The figures concerning the saving to the company in dollars varied considerably, one company stating that their low back injury cases averaged eight to ten thousand dollars per case, another giving an average of four thousand five hundred dollars per case, another twelve thousand dollars per case, and another six thousand dollars per case. All are in agreement, however, that the adoption of this program had saved them considerable

money and in all cases the amount of money saved far exceeded the cost of the total program.

In addition, a number of those who responded spoke of the value of routine pre-employment low back x-rays not only from the point of view of rejecting those applicants who were a potential hazard to themselves, to other employees, and to their companies but, also, from the aspect of being able to place properly those men whose x-rays revealed abnormalities of the low spine which were not serious enough to cause rejection but which would warrant them being placed in jobs where low back strain was to be avoided.

Those who felt that the adoption of a program of pre-employment examination which included low back x-rays as a routine procedure was not advisable gave the following reasons:

1. The percentage of applicants whom they would have to reject because of x-ray findings would be so high that they would soon find themselves with not enough employees to fill the available positions.

2. Most of the low back injury cases which caused long periods of lost time and cost the companies considerable amount of money occurred in individuals whose x-rays revealed no bony abnormality but where the injury was strictly confined to the soft tissues. Conversely, they also stated that they had seen many cases where the x-rays had revealed severe, apparently disabling abnormalities of the spine in an employee who gave no history of any type of back symptoms or back difficulty.

3. Some who replied to the letter stated that their Union situation would not allow them to take pre-employment low back x-rays.

4. The cost of the x-ray examination was exorbitant and doubled or tripled the total cost of pre-employment physical examinations.

5. They had tried the routine pre-employment back x-ray program for a period of four years and had found that it did not alter their morbidity experience in any degree.

RGE:mhg
4/20/59

*MEMBERS OF SUBCOMMITTEE

PARTICIPANTS

*Clark R. Miller	Tidewater Oil Company
L. E. Curtis	Standard Oil Company of California
*W. O. Armstrong	Continental Oil Company
*Thomas J. Kelly	Shell Oil Company
B. B. Reeve	Standard Oil Company (Indiana)
W. E. Broughton	Shell Petroleum Company (London)
J. W. Osborn	The Standard Oil Company (Ohio)
N. W. Bolyard	Standard Oil Company (Indiana)
John R. Scott, M. D.	The Carter Oil Company
John F. Mc	Champion Paper Company
V. C. Baird	Humble Oil & Refining Company
Leo J. Wade	Esso Standard Oil Company
Tom Hall Mitchell	The Carter Oil Company
*Ralph F. Schneider	Standard Oil Company (New Jersey)
John C. Ruddock	Richfield Oil Corporation
Theo. Frank	Pan American Petroleum Corp.
F. F. Boys	Sinclair Refining Company
N. J. Gothard	Sinclair Refining Company
W. H. Barcus	Sun Oil Company

APPENDIX G
(G-1)

REPORT OF THE SUBCOMMITTEE ON PHYSICAL AGENTS

C. H. Hine, M. D., Chairman

The subcommittee convened only once since its November meeting, the majority of its business being carried on by correspondence.

It was reconfirmed that an annual summary of important events in the various fields of physical agents be prepared by the subcommittee and be circulated to the members of the MAC as an attachment to its report at the time of the fall meeting.

All summaries previously assigned have been reviewed, with the exception of two awaiting the development of additional information.

A progress report was received from Dr. Glorig. This contained brief description of the last three or four month's activities of the Research Center, including:

A. Laboratory study of temporary threshold shift.
B. Hearing Surveys.
C. Statistical Analysis of field data.
D. Field and Educational Activities.

Dr. Glorig's report is appended.

A compilation of existing radiation rules and regulations in force in the various petroleum companies was made by requests sent to the Medical Directors of 31 companies. Eight sets of these were received. These will be made available for interested persons in the member companies by deposition in the API office, where they are available on request.

Copies may be obtained of the regulations of the following companies on request: Esso Standard Oil Company, Shell Oil Company (Wood River), Shell Development Company, Sohio, and Standard of Indiana.

At the request of Dr. Baird, the subcommittee reviewed the subject of the possible adverse effects of ionizing radiation received through back x-ray programs. It was concluded that under certain conditions unnecessary and undesirable quantities of radiation (in terms of the total genetic pool) might be received, and suggestions were advanced as to methods of reduction of these quantities through the use of good radiological techniques.

A critical surveillance of information on radiological matters published in the Federal Register will be made on a trial basis for one year. Items deemed of importance will be circulated to the MAC.

Respectfully submitted,

C. H. Hine, M. D.
(Chairman)

(G-2)

SUBCOMMITTEE ON NOISE
OF THE
COMMITTEE ON CONSERVATION OF HEARING
OF THE
AMERICAN ACADEMY OF OPHTHALMOLOGY AND OTOLARYNGOLOGY

April 20, 1959

This is a report on progress of research and educational activities of the Research Center, Subcommittee on Noise.

This report contains a brief description of the latest three or four months' activities of the Research Committee in the following areas

a. Laboratory Study of Temporary Threshold Shift

b. Hearing Surveys

c. Statistical Analyses of Field Data

d. Field and Educational Activities.

a. Temporary Threshold Shift

Current studies of TTS are concerned with the effects on hearing of (a) changes in noise exposure levels during the exposure period, (b) exposure to octave bands of noise, and (c) sex.

To date we have found:

1. When changes in exposure level occur during any one exposure period, the resulting TTS is proportional to the mean level of exposure stimuli.

2. TTS produced by exposure to octave bands of noise has a maximum at frequencies in or just above the frequency range of the exposure. Also, for the same SPL of each octave band, the maximum TTS resulting from exposure to the 600 to 1200, 1200 to 2400 or 2400 to 4800 c/s bands is larger than the maximum TTS produced by exposure to lower bands.

3. Young men and young women with normal hearing respond on the average with equal amounts of TTS to equal noise exposures. The experiment to compare TTS produced in female ears with TTS produced in male ears was suggested by some of our industrial data which indicates that men lose hearing faster than women do under the same conditions of age and exposure.

b. Hearing Surveys

In an attempt to determine the status of hearing of employed persons not exposed to industrial noise, the Research Center has conducted three separate hearing surveys; one at an industrial plant and two in large research corporations. In total, more than 1600 men and 1000 women were tested. Age, medical and occupational histories, subjective self-evaluation of hearing and results of brief otological examinations were recorded for all male participants. Analyses of these data will supply much needed, and until now unavailable, information about hearing loss in non-industrially exposed groups.

c. Statistical Analyses of Field Data

In addition to the continuing analysis of industrial audiometric data, the statistical laboratory at the Research Center has undertaken an analysis of audiometric data of several general population surveys which include a total of more than 60,000 persons. These surveys represent a good geographical cross section of the urban population of the United States and the analysis is expected to provide the best description to date of the status of hearing in the general population.

d. Field and Educational Activities

Field and Educational Activities over the last few months have included

1. A hearing conservation noise survey of a large refinery belonging to a member of the API.

2. Receipt of noise analyses obtained by a Research Center staff consultant in some 35 pulp and paper mills on the West Coast. This extensive noise survey is the first step in an extensive hearing conservation program recently undertaken by the paper industry. Enclosed is a tentative table for determining the need for hearing conservation from information about time in noise and noise level. This table was originally developed by the Research Center for one of the paper companies.

3. Completion of a 14-minute 16mm color sound film about ear protection. This film is available on loan to interested viewers at no charge except transportation costs.

4. Publication of a "Guide for Evaluation of hearing Impairment". This Guide presents an official medical statement for evaluating hearing impairment in medical and compensation cases. It was published in the March-April 1959 issue of the "Transactions" of the American Academy of Ophthalmology and Otolaryngology and in the March 1959 issue of the "Journal of Occupational Medicine".

As new publications appear, we will supply you with reprints. Thank you for your cooperation in the past and your continued cooperation in the future.

Very sincerely yours,

/s/ Aram Glorig

Aram Glorig, M.D.
Director of Research

AG:aw

PERMISSIBLE OCTAVE BAND LEVELS AND EXPOSURE TIMES

Steady Noise Level in db at one or more of the following octave bands: 600-1200; 1200-2400; 2400-4800	84-90	90-96	96-102	102-108	108-114	114-120
Continuous exposure	6/8*	3/8	1½/8	45'/8	20'/8	10'/8
Intermittent exposure 3/4 on, 1/4 off	8/8	6/8	3/8	1½/8	45'/8	20'/8
1/2 on, 1/2 off	8/8	8/8	6/8	3/8	1½/8	45'/8

* 6/8 = 6 hours of exposure out of every 8 hour workday.

For continuous exposure, if time is halved, allowed sound pressure is doubled; i.e. total sound-pressure-minutes is assumed constant.

For intermittent exposure, it is assumed that when the percentage of time the noise is "on" is halved, the total sound-pressure-minutes can be doubled. This assumption holds only if the periods during which the noise is on do not exceed 5-7 minutes. If this period is exceeded, the values for permissible continuous noise should be used.

For calculating permissible exposures to tones, exposure time should be based on the values found one column to the right of the column showing the measured sound pressure levels.

REPORT OF SUBCOMMITTEE ON SPECIALTY PETROLEUM PRODUCTS

J. W. Osborn, M. D., Chairman

Report of meeting, 4/25/59 - 2 - 4 P. M. - Sherman Hotel, Chicago, Illinois

Quorum of Members Present:

J. W. Osborn, M. D., Chairman
R. F. Schneider, M. D.
J. W. Hammond
H. W. Gerarde, M. D.

Guests Present:

Carl A. Nau, M. D.
E. O. Mattocks
B. B. Reeve
W. W. Hunter
H. Van Raalte
N. J. Gothard
W. O. Armstrong
F. F. Boys
N. W. Bolyard
W. E. Sugdor
W. H. Barcus
R. Call
J. R. Scott
C. S. Huntington
L. E. Curtis
C. H. Hine
L. J. Wade

From a prepared agenda, the following items were discussed with comments, requests and recommendations as follows:

I. Status of Clinical Kerosine Research Program

A. Baylor University - Dr. C. W. Daeschner, Jr., Assoc. Prof. of Pediatrics
Number of cases still insufficient for progress report. Next meeting will be held in Linden, N. J. for demonstration by Dr. Gerarde of effects on animals and review of Dr. Daeschner's cases. Expect to present a progress report to MAC at November meeting.

B. University of Vermont - Dr. R. J. McKay, Jr., Prof. of Pediatrics
Our invitation to Dr. A. Bradley Soule's group to join in a clinical study with blood samples to Dr. Gerarde's laboratory following Dr. Daeschner's protocol has been accepted. A copy of Dr. McKay's letter of acceptance and budget meeting the $2500 approved by Medical and Health Committee is attached. The subcommittee unanimously requests the MAC to approve this specific program, to begin July 1, 1959 for one year. We expect to invite Dr. McKay to our Linden, N. J. meeting, which will be held probably early in October 1959. No traveling expenses are included in either Dr. Daeschner's or Dr. McKay's rather limited budgets. Special requests for this purpose will be made to the MAC's Special Fund for Consultants Expenses.

II. Experimental Laboratory Research on Kerosine Poisoning - Dr. Carl A. Nau

Dr. Nau personally presented an outline of his proposed study and budget meeting the $2500 approved by the Medical and Health Committee for this purpose. A copy is attached to this report. The subcommittee unanimously requests the MAC to approve this specific program, to begin June 1, 1959 for the next three to four months. Dr. Nau will report on this study in September 1959 at the conclusion of the summer session to the Subcommittee on Specialty Petroleum Products in time for a report to the MAC in November 1959.

III. Cooperative Clinical Project for Evaluation of Kerosine and Related Petroleum Distillate Ingestion

Dr. Edward Press, director of this project, made available on a confidential basis to the members of the Subcommittee on Specialty Petroleum Products the data on which he made a progress report in October 1958 at the annual meeting of the American Public Health Association, in St. Louis. In his cover letter Dr. Press asked if our subcommittee would like informal liaison with one or more of the actively participating hospitals in his study, for meeting and discussing the project. The subcommittee felt that liaison with Dr. Press and with the Cooperative Clincial Project by way of our contacts with Dr. Daeschner at Baylor and now with Dr. McKay at the University of Vermont (2 of the 39 participating hospitals in this project) is good enough. The subcommittee feels there is no need to ask individual Medical Directors on the subcommittee or MAC to enter into any such informal liqison with other participating hospitals. Dr. Osborn will reply to Dr. Press along this vein, but endeavor to keep our subcommittee's informal liaison with Dr. Press open.

IV. National Clearing House for Poison Control Centers

A. A printed Directory of Poison Control Centers, dated February 1959 is available. This lists 262 centers throughout the U.S.A., 48 of which provide "informational services only." A letter to Mr. Mattocks about obtaining this Directory is being circulated to all MAC members and Technical Advisors. Dr. L. E. Curtis reported a movement on foot to consolidate these centers, at least for informational services, into 8 to 10 regional centers for U.S.A. on a nationwide telephone hook-up perhaps by dialing "Poison." The Subcommittee on Specialty Petroleum Products will report on future developments and again urges all MAC members to get on the National Clearing House's mailing list for its Monthly Bulletin.

B. American Association of Poison Control Centers

Organized in October 1958 under the auspices of the National Clearing House, this association reports its speeches and papers in the Monthly Bulletin. Dr. Osborn wrote to Dr. Robert Grayon, Miami Beach, Florida, on January 29, 1959 asking for specific information about membership costs, scope and functions and whether the association was interested in membership from groups such as the Subcommittee on Specialty Petroleum Products. No reply has been received to date. The subcommittee members present agreed there is no apparent need for representation by MAC in this association at this time.

V. Status of Hazardous Substances Labeling Legislation

A copy of Dr. Osborn's report to the members of the Subcommittee on Specialty Petroleum Products, dated April 17, 1959 (Attachment #2 to Agenda for 4/25 meeting) is attached. This report is made in his capacity as MAC Liaison Member (informal) to AMA Committee on Toxicology and as MAC Representative to the industry group on Labeling Legislation (CSMA, MCA, etc.) as well as Chairman of the Subcommittee on Specialty Petroleum Products.

Mr. Gjerde, Chairman of the API Interdivisional Committee on Labeling, continues to represent this committee on the industry group on Labeling Legislation and Dr. Osborn works closely with him.

Each MAC member and Technical Advisor is urged to be on the lookout for new legislation on labeling in his geographical state area of operations and report promptly to Mr. Mattocks to aid the industry group in keeping on top of this expanding problem.

VI. New Business

A. Paper by Dr. Malcolm Hargraves

On April 17, 1959 Dr. Baird requested this subcommittee to review the material in this paper and make any recommendations it sees fit to the MAC.

Dr. Hargraves (of the Mayo Clinic and University of Minnesota Graduate School of Medicine, but expressing his own personal opinion and no other) spoke before the National Wildlife Federation Panel on "Chemical Pesticides and Conservation Problems" at the Sheraton-McAlpin Hotel, New York City. It is impossible to make any reasonable sense out of his remarks, but he seems to indulge in philosophical mis-statements and at best half-truths which imply that the petroleum distillates used as vehicles in pesticides are seriously poisoning human beings in a wide variety of insidious ways and that this holocaust must be stopped. He apparently reported on 12 to 15 cases out of hundreds in his files.

After discussion, the subcommittee unanimously agreed to recommend to the MAC that the API ignore Dr. Hargraves' paper at this time. Because of reported pending legislation in Pennsylvania in the pesticide field, for which Dr. Hargraves may be testifying in the future, the MAC may wish to advise action, however, of a different nature in the near future.

B. F.D.A. Status on Mineral Oil

Mr. J. W. Hammond inquired about this problem which is not strictly business assigned to this subcommittee. Dr. L. E. Curtis replied that F.D.A. is conducting tests with mineral oil, its effect on vitamin absorption, etc., and is studying the question of contamination of food with mineral oil and lubricants used in food processing machinery before committing itself on any allowable levels in ppm.

The meeting was adjourned.

The Subcommittee Chairman requests that the MAC accept this report.

Members Present	
Approving	Disapproving
R. F. Schneider	None
H. W. Gerarde	
J. W. Hammond	
J. W. Osborn	

Respectfully submitted,

J. W. Osborn, M. D.
Chairman
Subcommittee on Specialty
Petroleum Products

(H-4)

COPY COPY COPY

THE UNIVERSITY OF VERMONT
College of Medicine
Burlington, Vermont

Department of Pediatrics
Tel. University 4-7441 Ext. 216

April 18, 1959

J. W. Osborn, M.D.
Standard Oil Company
Midland Building
Cleveland, Ohio

Dear Doctor Osborn:

Dr. Soule has turned your letter of February 6, 1959 over to me with the idea that the Department of Pediatrics is in a better position than the Department of Radiology to carry out a study of the sort proposed in your letter.

We are interested in participating in this study. Obviously it would be important that we follow the same protocol as Dr. Daeschner.

A tentative budget would be as follows:

1.	Physician to make home visits, secure specimen of product, supervise care of patient, and draw and process blood specimens @ $150 per month	$ 1,500.00
2.	Radiologic examinations	300.00
3.	Supplies and secretarial assistance	350.00
4.	Overhead to University of Vermont College of Medicine	350.00
	TOTAL	$ 2,500.00

I am sorry that this letter is so late but both Dr. Soule and I have been extremely busy and unable even to write about taking on anything additional until the present time.

I imagine that Dr. Daeschner will be attending the annual meetings of the Society for Pediatric Research and the American Pediatric Society at Buck Hill Falls, Penn. from May 6 to 9. I would be glad to discuss the matter further with him there if the committee decides it would like to have us participate in the study according to the above budget. Incidentally, if the money should be made available, it should be stated in writing to me that it is a grant-in-aid or a grant in support of our research on kerosene poisoning. This is necessary for administrative reasons in our University. Any checks should be made out to the University of Vermont.

Sincerely,

R. J. McKay, Jr., M.D.
Professor of Pediatrics

vlh cc: Dr. Soule
J. Bates

API 07524

A Study of the Mechanisms of the Toxic Action of Ingested Kerosene

PAST WORK:

Reference is made to a paper entitled "A Study of the Mechanisms of the Toxic Action of Ingested Kerosene". Every member of the subcommittee has been given a copy of this proposal.

We propose simply to outline suggestions for further work on this subject.

FUTURE WORK:

Radioactive kerosene will be used in an attempt to prove a hematogenous route and the cellular deposition. The kerosene will be tagged with tritium by the Witzbach Method and purchased from the National Argon Laboratories. A modified freeze drying technique will be employed in radioautography to determine cellular deposition. The tritium labeled kerosene in conjunction with radioautography will demonstrate the localization to histologic areas, to individual cells and even to subcellular areas. The radioactive object or tissue is positioned against a photographic strip and the darkening of the developed film indicates the distribution of the radioactive kerosene.

It is also proposed to continue studying blood changes, blood values for kerosene radiographic changes in the lung and gross and microscopic changes. For this study we will need tagged kerosene. It costs about $125 per cc to get kerosene tagged with tritium. We will also need a considerable number of rats and rabbits together with the necessary feed and animal care and technical assistance. It is estimated that the tagging will cost about $300, animals (care and feed), $500, chemicals and supplies $400. The remainder is to be used for technical assistance and consultation.

REFERENCE

ACTA, Radiologica, 1956-57, Stockholm, Sweden. Chapter VII, Detailed Autoradiographic Studies.

/s/ Carl A. Nau

THE STANDARD OIL COMPANY

April 17, 1959

Members of the Subcommittee on
Specialty Petroleum Products

Attachment #2

Status of Hazardous Substances Labeling Legislation

1. At the Federal Level:

On March 5th identical bills S. 1283 and H.R. 5260 were introduced into the 86th Congress, first session, and referred to their respective committees on Interstate and Foreign Commerce. Mr. E. O. Mattocks furnished copies on March 12th to Mr. M. D. Gjerde, Chairman, A.P.I. Interdivisional Committee on Labeling and Dr. J. W. Osborn, Vice Chairman A.P.I. Medical Advisory Committee. It is Mr. Mattocks' opinion that Mr. Gjerde and Dr. Osborn "...should try and represent the petroleum industry for the hearing on the House and Senate Labeling Bill". The Manufacturing Chemists' Assoc. has contacted us indicating that a hearing on these bills is expected to be held in Washington, D. C. The MCA is anxious to know who, from the API, will represent our interests before such a hearing.

As of April 17th I have heard nothing further from Mr. Mattocks or from Mr. J. Kittleton, Secretary of the M.C.A., about the date for the hearing. Meanwhile, these bills have been reviewed with our company's attorneys' office. We find them essentially similar to the January 5th Industry Group draft. We believe them adequate if drafted into Federal law for the purpose intended, "to regulate the interstate distribution and sale of packages of hazardous substances intended or suitable for household use".

On April 1st, Mr. Kittleton circulated a letter from Miles E. Woodworth, Secretary, National Fire Protection Association, pointing out a possible discrepancy between the bills introduced at the Federal level and N.F.P.A. #326, Warning Labels for Containers of Flammable Liquids. This N.F.P.A. standard has been adopted by approximately one thousand cities in the United States. The discrepancy has to do with the use of the words Warning and/or Caution, in defining the degree of flammability. National Fire Protection Association #326 requires the use of the word "Warning" for liquids having a flash point of 20° to 80° F. and the word "Caution" for flammable liquids having a flash point above 80° to 150° F. inclusive. The Federal bills do not cover the latter degree of flammability and allow the use of the words "Warning" or "Caution" for liquids having a flash point of 20° to 80° F. A reply has been sent to Mr. Kittleton suggesting that this possible discrepancy could be easily avoided with a footnote or parenthetical statement requiring the word "Warning" rather than "Caution" for this latter range of flammable liquids.

THE STANDARD OIL COMPANY

April 17, 1959

Members of the Subcommittee on
Specialty Petroleum Products

Attachment #2 (Cont'd.)

2. At the State Level:

A. Indiana Senate Bill 103: Mr. Mattocks circulated information from Mr. M. D. Gjerde, including a copy of this bill. This is an amended bill to supersede the 1957 Indiana Hazardous Household Poison Registration Act. It is Mr. Gjerde's understanding that this bill was passed as amended by the Indiana House on Friday March 6th and that the Senate concurred on March 7th. Mr. Gjerde's source of information indicates that there is no reason to suspect that the Governor will not sign the bill. The bill, as revised, is essentially similar to the Industry Group draft for legislation at the state level expect for the fact that "radioactive" materials are included. This bill also continues in existence the fee for registration.

B. Mr. Gjerde also circulated a copy of the Colorado House Bill 345 concerning poisons and relating to registration. Section 1. 6-12-4 (2), Colorado Revised Statutes 1953 which increases the annual registration fee for each economic poison registered.

C. Labeling of Hazardous Substances Bill, House 437, Washington State. The Washington State Legislature adjourned March 12th. The above bill passed the House with some minor amendments. It was killed by a Senate Committee on March 4th due to the log jam of last minute legislative matters and there was no opportunity to revise the bill at this session.

D. Ohio State 103rd General Assembly S.B. #440. On March 30th a copy of the original bill was received. This short 16 line bill was so general that it would appear to require the labeling of everything under the sun. I advised Sohio that, in my opinion, it should be vigorously opposed. At the first short hearing of this bill on April 8th, it was found that a substitute S.B. 440 had just been introduced in place of the original bill. Ohio S.B. SUB #440 is essentially similar to the Industry Group Bill. The one or two differences are probably minor and can, no doubt, be ironed out satisfactorily. Our company attorneys' office reviewed this bill and made appropriate comments in writing which I expect we will refer promptly to Mr. George Hopper who is representing the Industry Group in Ohio. The comments are currently awaiting clearance from Sohio Management because of Sohio's direct interest in legislation in Ohio.

/s/ J. W. Osborn, M. D.

APPENDIX I

REPORT OF SUBCOMMITTEE ON TOXICOLOGICAL REVIEWS

H. W. Gerarde, M. D., Chairman

1. The Medical Advisory Committee and the Medical and Health Committee have approved the publication of the Toxicological Reviews on Naphthenic Acids, Copper Naphthenate, Butadiene, and Naphthalene.

2. The Subcommittee recommends that these Reviews be published by the API, retaining the format of the present Reviews.

3. Complimentary copies of these Reviews will be sent to other organizations as in the past and to Editors of a number of medical journals for review in order to make their existence and availability known to interested individuals.

4. These Reviews will be available from the API at a nominal cost.

5. First drafts of the Toxicological Reviews on BF_3, Acrylonitrile, Benzene, Toluene, and Xylene have been circulated through the MAC.

6. A number of excellent comments and suggestions have been received which will be incorporated in the second draft which will be circulated to the MAC.

7. First drafts have been received from Prof. Drinker on nichel carbonyl, furgural, and morpholine.

8. The Subcommittee requests that this report be accepted.

APPENDIX J

REPORT OF THE SUBCOMMITTEE ON INDUSTRIAL HYGIENE

J. A. Spence, Chairman

This Subcommittee met on April 25, 1959 with all 11 members present or represented. There were 15 guests.

Liaison members reported on the activities of the American Standards Committee Z-37 Toxic Dusts and Gases, Z-4 Industrial Sanitation, and Z-62 Industrial Hygiene Standards. The Z-37 Committee is currently balloting to accept recommended MAC values for 8 chemicals. These values are acceptable to this Subcommittee. No activity was reported by the Z-4 Committee. First drafts of the Z-62 Industrial Hygiene Standards will be ready for review by the Z-62 Committee in about 3 months. This Subcommittee will await a report from our liaison member, Mr. Hendricks.

As reported at the last meeting, the Subcommittee will submit to the Medical Advisory Committee prior to the November 1959 meeting, its information report "Some Catalysts Used in Petroleum Refining." This report summarizes some of the factors to be considered in evaluating potential health hazards and establishing safe handling practices. The Subcommittee recommends that this report be made available through the Medical Advisory Committee to the members of the petroleum industry only. The Subcommittee plans to continue preparing information of this type on other refining processes.

As requested by the Subcommittee on Toxicological Reviews, the section "Manufacture, Uses and Possibilities of Exposure" for 25 Toxicological Reviews have been completed and submitted to Dr. Gerarde.

The Subcommittee discussed the question raised last November, as to the need for a study of the potential health hazards related to cobalt and other metal carbonyls in certain refining processes. The Subcommittee elected to delay any action until April 1960. During the interim, additional information will be gathered to further indicate the nature and extent of this problem.

The Subcommittee Chairman requested Mr. Renes to prepare for the November 1959 meeting preliminary information on the industrial hygiene aspects of the manufacture and uses of C_9 - C_{12} aromatics. The Chairman also requested Mr. Wilkening to prepare a list of general refining processes, to guide in the preparation of information such as was developed for the Medical Advisory Committee on the catalyst project.

/s/ J. A. Spence
April 26, 1959

APPENDIX K

REPORT OF LIAISON WITH SMOKE AND FUMES COMMITTEE

Since the last meeting of the Medical Advisory Committee, the Chairman of the Subcommittee on Atmospheric Pollution has not met with the Smoke and Fumes Committee of API.

Following the last meeting of the Medical Advisory Committee a statement was submitted to the Smoke and Fumes Committee concerning Rule #62 and its effect, if adopted, upon the health and welfare of the individual and the community in the Los Angeles Basin.

In January of 1959, the Executive Secretary of the Smoke and Fumes Committee submitted, for the information of the Subcommittee on Atmospheric Pollution and the Medical Advisory Committee, the following papers which were presented by petroleum industry representatives at the National Conference on Air Pollution held in Washington, D. C., November 18 - 20, 1958:

1. "Report on Accomplishments of Petroleum Industry in Air Pollution Abatement", by Dr. Jerry McAfee, Gulf Oil Corporation.

2. "Control Methods and Procedures...." by L. C. Burroughs, Shell Oil Company.

3. "Remarks by C. A. Jones on Transportation Sources; Petroleum", as presented in panel discussion on Sources of Air Pollution.

4. "Sources of Air Pollution in Oil Refineries" by S. Smith Griswold, Air Pollution Control Officer, Los Angeles County, and Associates.

Other articles have also been received from the Smoke and Fumes Committee concerning technical aspects for our guidance. These may be inspected at this meeting and upon conclusion of this meeting they will be forwarded to Dr. M. W. Goldblatt in London for his information.

JOHN C. BUDDOCK, M. D.
Chairman, Subcommittee on
Atmospheric Pollution,
Medical Advisory Committee,
American Petroleum Institute

April, 1959

APPENDIX L
(L-1)

ESSO RESEARCH AND ENGINEERING COMPANY

(FORMERLY STANDARD OIL DEVELOPMENT COMPANY)

P. O. BOX 45, LINDEN, N. J.

MEDICAL RESEARCH DIVISION

R E ECKARDT PH D M D
DIRECTOR

S E BENNINSON M D
ASSISTANT DIRECTOR

N V HENDRICKS CH E
SR ENG ASSOC

H W GERARDE PH D M D
RES ASSOC

TELEPHONE WABASH 5-1600

February 17, 1959

Mr. Elmer O. Mattocks
American Petroleum Institute
50 West 50th Street
New York 20, New York

Dear Mr. Mattocks:

This letter will inform you of the current status of the American Standards Association's Uniform Industrial Hygiene Standards Z-62 Committee.

Five writing groups have been appointed and are currently starting the preparation of material for the standard. The writing groups are listed as follows.

Chemical Agents

Mr. Elmer P. Wheeler, Chairman
Mr. Joseph A. Houghton
Dr. Norman C. White
Dr. C. U. Dernehl
Mr. Frank Patty
Dr. Lewis J. Cralley

Temperature, Humidity & Air Movement

Mr. Jack Baliff, Chairman
Mr. Herbert J. Weber
Mr. L. B. Berger
Mr. Frank Patty
Dr. John V. Grimaldi

Noise

Mr. Herbert T. Walworth, Chairman
Mr. Joseph A. Houghton
Col. Jack C. Carmichael

Sanitation, Housekeeping & Personnel Facilities

Mr. N. V. Hendricks, Chairman
Mr. George R. McCormack
Mr. V. B. Johnson

Biological Agents

Dr. M. Gallivan, Chairman
Dr. John H. Foulger
Dr. C. U. Dernehl
Dr. Lewis J. Cralley

Mr. Yaffe, chairman of the Z-62 Committee, has provided the writing groups with specific instructions and is asking that the first draft of this material be completed by early summer.

Very truly yours,

N. V. Hendricks

N. V. HENDRICKS

NVH:mew
cc.: V. C. Baird, M. D.