Messrs.	B. B. Turner	M. P. Murdock
	A. C. Burdick	W. R. Perdue, Jr.
	J. A. Costello	S. B. Rodi
	G. O. Hayes	C. L. Smith
	G. F. Kirby	F. P. Warne

N0866

ETHYL CORPORATION

INTER-OFFICE
CORRESPONDENCE

TO	Mr. B. B. Turner	ADDRESS	New York
FROM	J. E. Boudreau	ADDRESS	New York
SUBJECT	Contribution - Kettering Laboratory	DATE	September 9, 1959

Ethyl Corporation has been asked to contribute $175,000 toward the expansion of the Kettering Laboratory. The Laboratory is a division of the Medical School of the University of Cincinnati which, in turn, is owned and operated by the City of Cincinnati.

In view of Ethyl's contributions policy, it is doubtful that we would consider any contribution if it were not for our previous contacts with the Laboratory and possible future benefits to the Corporation.

As indicated in the attached joint report of Messrs. Kirby and Ball, Ethyl Corporation has already contributed 43% of the existing Kettering Laboratory building and equipment. Ethyl Corporation is currently supporting 25% of the total dollar value of projects now being carried on at the Laboratory. Consequently, unless new or expanded facilities and services are required for Ethyl projects, there is little basis for a contribution by Ethyl Corporation to expand the Kettering Laboratory facilities.

The attached memorandum reviews the organization, activities and operating costs of the Kettering Laboratory, as well as pertinent data on the proposed expansion. Recommendations are also included with respect to the method of payment, and certain restrictions of the use of facilities.

James E. Boudreau

JEB:mh
Att.

N9866.01

KE 0008367

A REPORT ON THE KETTERING LABORATORY

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A REPORT ON THE KETTERING LABORATORY

by

J. H. Kirby and W. G. Ball, Jr.

INTRODUCTION

On June 22, 1959, Mr. B. B. Turner received from Dr. R. A. Kehoe details of a request for capital funds to expand the facilities of the Kettering Laboratory at Cincinnati, Ohio.

On the basis of Dr. Kehoe's estimate of Ethyl's future use of the facilities, Ethyl could be called on to provide as much as $340,000. However, when past building fund contributions are considered, the amount suggested by him as equitable becomes $175,000. Neither estimate is definite because many factors may influence the final determination of an appropriate contribution, if any.

This report is the result of a brief but intensive study of the Laboratory and our past relations with it. As indicated on the preceding index page, this report comprizes three sections: I - Background and Present Operations II - Expansion Plans and Costs III - Recommendations.

SECTION I

BACKGROUND AND PRESENT OPERATIONS OF THE KETTERING LABORATORY

ORGANIZATION AND OWNERSHIP OF THE LABORATORY

The Kettering Laboratory is a research laboratory specializing in industrial and public health problems, and is a division of the Department of Preventive Medicine of the University of Cincinnati Medical School.

The University of Cincinnati is operated by the City of Cincinnati, and supervised by a University Board of nine members appointed for terms of nine years. The appointments are noncompensatory and are based on individual qualifications, without political considerations.

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The College of Medicine is responsible through its dean to the president of the University; and Dr. Kehoe, as Chairman of the Department of Preventive Medicine, reports to the dean of the Medical School.

All matters relating to the University buildings and grounds are under the direct responsibility of the University's vice president of Administration.

While the dean of the College of medicine is kept informed concerning all matters relating to buildings and maintenance, direct contact with the administrative vice president is necessary with respect to additions to the facilities, as well as special maintenance.

The Kettering Laboratory has its own maintenance crew, but may occasionally request special maintenance through the University, for which it is billed.

FINANCIAL OPERATIONS AND ACCOUNTING

The Kettering Laboratory has provided for its own capital and operating budget since it was established in 1930. The title to all buildings and equipment, however, is in the name of the University of Cincinnati. Therefore, capital gifts to the Kettering Laboratory are, in effect, capital gifts to a university owned by the City of Cincinnati.

Although the Kettering Laboratory maintains a small business office to record costs for its individual sponsors, all receipts and disbursements are made by the University's General Accounting Office.

Because the Kettering Laboratory is not separately organized as a non-profit research laboratory, all contributions or payments made for services, with minor exceptions, are paid to the order of the University of Cincinnati and deposited in the University's accounts. All salaries and other expenses required by the Kettering Laboratory are paid from the University's general funds, with a separate accounting established for the Kettering Laboratory activities. A minor exception to receipts being deposited directly in the University's accounts are payments for special examinations and laboratory work performed by various members of the Laboratory staff. These are generally billed in the name of Dr. Kehoe. This procedure is necessary because the Laboratory, as such, cannot receive payment for the practice of medicine. At present these funds total approximately $40,000 per year and are used to pay certain special items not coming within the Laboratory budget. Any balance, however, is ultimately transferred to the University and included as part of the Kettering Laboratory receipts.

ACTIVITIES

The principal activity of the Kettering Laboratory is the performance of toxicological research and tests for industrial sponsors. In addition there are a number of Government sponsors, such as the Armed Services and the U. S. Public Health Service. These activities have been increasing during recent years.

The Laboratory also performs services for miscellaneous other sponsors including Hamilton County (Ohio) Coroner's Office; American Petroleum Institute (cancer), American Heart Association and The Ohio River Valley Water Sanitation Commission.

Members of the Laboratory staff also act as instructors in the University's Medical School, and it is estimated that between 5% and 10% of the activities of the Laboratory relate to teaching assignments. All such costs are included in the overhead chargeable to the various sponsors.

PERSONNEL OF LABORATORY

The Laboratory employs 137 people (as of July 1959), all of whom are paid by the University from receipts of the Kettering Laboratory.

Full time staff	104
Part time staff	17
Graduate Students	4
Summer - Full time	10
Summer - Part time	2
	137

The present management personnel are: Director (Dr. Kehoe), Associate Director (Dr. Princi), Clinical Division (Dr. Miller), Toxicological Division (Dr. Brust), Industrial Hygiene Technology & Chemistry (Dr. Cholak), Industrial Hygiene, Physics, Bio-physics and Noise (Dr. Cember), Pathology (Dr. Cleveland), Bibliographic (Miss Campbell), Preventive Medicine (Dr. Phair), Epidemiology and Biostatistics (Dr. Phair); this last activity is not located in the Kettering Laboratory and will probably remain outside it.

Many of the key personnel are paid from two or more sources. For example, an individual may be carried as an Ethyl salaried employee while at the same time he is a salaried employee of the Kettering Laboratory (supported currently at 25 percent by Ethyl Corporation projects). In addition, the individual may be a salaried faculty member of the University of Cincinnati Medical School while also serving as a private consultant to industry or as a private medical practitioner. Currently there are 6 Ethyl employees and 4 Ethyl consultants, who are paid both by Ethyl and the Laboratory. No detailed breakdown of the time allotted Ethyl and the Laboratory is available.

CURRENT INDUSTRIAL SPONSORS

Immediately below, is a list of sponsors together with an estimate of the amounts each will spend during the current year. The total of $1,166,700 includes all overhead and the cost of services rendered to the Medical School and other non-profit organizations which may not absorb the same proportion of overhead.

	AMOUNT	%
Ethyl Corporation	$290,000	25
U. S. Government Agencies	336,000	29
Fluoride Study - Various Sponsors	173,000	15
E. I. duPont	25,000	2
Vanadium Corporation	75,000	6
U. S. Industrial Chemicals	45,000	4
Shell Chemical Corporation	67,000	6
Fee Basis (Outside Agreements)	40,000	3
American Petroleum Institute	24,000	2
Coroner's Office - Hamilton County, Ohio	20,000	2
Miscellaneous	71,700	6
Total	$1,166,700	100%

Based on the current budget of $1,166,700 Ethyl bears 25% of the total cost. The percent of Ethyl support varies from year to year. At the outset Ethyl bore 100% of the costs, but this has been reduced through the years. Details are set forth later in this memorandum. No budget breakdown is available by individual Ethyl projects; however, actual costs are accumulated. An estimate furnished by Dr. Kehoe, representing major categories and his understanding as to the individual having budget responsibility follows:

ETHYL PROJECTS - 1959

Basic Research Programs

1) Lead Inhalation and Absorption of TEL — $75,000

This project is to determine the maximum tolerable concentration of lead in air, taking into account

particle size, dosage, and the nature of the various compounds. A human subject lives and works seven and one-half hours per day for five days a week in such an atmosphere. The data will be extrapolated to 24 hours per day seven days per week. Ethyl will pay three quarters of this cost or $75,000. The remaining $25,000 will be allocated to another manufacturer of TEL. (Budget responsibility - Ethyl Medical Director)

2) Lead Metabolism Study — 15,000
This project is to determine what happens to TEL and its products in the human body. Ethyl requested to pay the full cost of this study due to the field investigations required. (Budget responsibility - Ethyl Medical Director)

3) Lead Alkyls — 50,000
This study is to establish the relative toxicity of a group of lead alkyls. Investigations may continue over several years with a total cost approximating $100,000. (Budget responsibility - Ethyl Medical Director and Research and Development Department)

4) ~~Magnesium~~ Manganese Compounds — 50,000
Specifically this project will cover the toxicity of AK-33X in air to determine its effect on the body and method of diagnosis. (Budget responsibility - Ethyl Research and Development Department)

5) Nickel Compounds — 25,000
These studies involve toxicity examinations of nickel compounds furnished by the Detroit Laboratories. (Budget responsibility - Research and Development Department)

6) Screening Program — 30,000
This involves toxicity tests of miscellaneous compounds sent to the Laboratory by Ethyl's Detroit Laboratories. The average cost per examination is approximately $3,000. (Budget responsibility - Research and Development Department)

7) Field Investigations of Effect of Handling Leaded Gasoline --

While no amount is budgeted for such investigations during the current year, demands may be made upon the Laboratory at any time for this service. The full cost of such examinations are borne by Ethyl Corporation and its field staff is utilized in connection with some investigations. (Responsibility - Ethyl Medical Director)

Sales Department Problems

1) Tank Cleaning 15,000

Dr. Sanders and Ethyl's Safety Department co-ordinate on this project.

2) Medical Emergencies Relating to Sales and Distribution 2,500

3) Investigation of Medical-Legal Problems --

The responsibility for the above activities rests with the Ethyl Medical Department, and the Sales Department.

Medical Department 27,500

Hygienic Control

This relates to Laboratory investigations resulting from Ethyl Medical Department inspections at Company plant and laboratory locations.

Total	$290,000

CAPITAL GRANTS 1930-1959

According to Dr. Kehoe, Ethyl Corporation and other donors have provided the funds for the present buildings and equipment as listed here:

Previous Capital Gifts by Ethyl and Others:

Year	Gifts by Others	Gifts by Ethyl	Percent by Ethyl	Total
1930	$91,264	$45,000	33	$136,264
1941	0	75,000	100	75,000
1949	314,250	247,300	44	561,550
1936-1939*	0	25,600	100	25,600
1939-1949*	23,400	15,600	40	39,000
1949-1959*	160,000	40,000	20	200,000
Totals	$588,914	$448,500	43%	$1,037,414

*These capital additions to building and equipment were financed from

operating funds.

OPERATING COSTS 1949-1959

Total operating costs of the Kettering Laboratory and Ethyl's portion thereof for the period 1949-1959 are shown below:

Year	Total	Ethyl	%
1949	$ 333,600	$125,200	37
1950	436,500	166,500	38
1951	504,500	129,600	27
1952	534,000	153,800	29
1953	615,800	174,700	28
1954	639,496	211,593	33
1955	609,576	198,812	33
1956	607,560	162,477	27
1957	703,853	189,569	27
1958	728,894	168,394	23
1959 (Est.)	1,166,700	290,000	25

OBLIGATION UNDER PRESENT CONTRACT

According to Item V of the present Agreement between the Ethyl Corporation and the University of Cincinnati, dated January 1, 1949, Ethyl and the University are to agree upon an annual budget and Ethyl shall pay or contribute to the University in advance, in equal quarterly installments, the sum set forth in the annual budget less contributions from other sponsors received during the preceding quarter. Ethyl's contributions unexpended at the end of each year are to be refunded.

In effect, the agreement provides that once an annual budget is agreed upon, Ethyl will furnish all funds not collected through contributions from other sponsors.

While in the past Ethyl has absorbed certain costs not chargeable to other sponsors, in recent years an effort has been made to allocate all costs to sponsors on an equal basis insofar as practicable. Limitations exist with respect to Government sponsored projects which have a ceiling on the amount of overhead which they will carry.

It is difficult to verify that the Ethyl projects bear only their fair share of Kettering Laboratory costs. The present cost account system, however, is designed to establish project costs on an equitable basis. Further refinements in the cost system are now under consideration by the new Business Manager, Donald Bruegman.

INTERIM CONCLUSION

It is apparent that Ethyl Corporation has, to date, contributed 43% of the present Kettering Laboratory buildings and equipment. Other than percentage-of-operating-budget, there are no data to reveal the extent to which Ethyl utilizes the Laboratory facilities. Currently Ethyl is absorbing 25% of the entire operating cost which includes a charge for teaching facilities provided to the Medical School and overhead absorption for projects unable to absorb their proper share.

SECTION II

EXPANSION PLANS AND COSTS

ARCHITECT'S DRAWING

Dr. Kehoe has furnished an architect's drawing of the proposed building and has indicated the floor space to be allotted the various activities to be housed in the new building.

SPACE

The present buildings and proposed addition provide the following space:

		Approximate Area
1930 Building -	92' x 56' - 4 Floors	20,600 Square Ft.
1949 Building -	104' x 56' - 5 Floors	29,100 Square Ft.
Proposed Addition -	140' x 56' - 5 Floors	39,200 Square Ft.

The proposed addition will be an extension of the 1949 building and provides approximately 80% more space.

Space in the new facility for the most part follows the present allotment of space.

The first floor of the new building will contain an assembly hall for the instruction of students and other uses, facilities of the County Coroner and some pathological laboratory facilities.

The second floor will contain administrative office, mail room, file room, library, multilith facilities and 1,200 square feet of offices for our Ethyl Medical Department (Dr. Kitzmiller, Dr. Schradin, two others, and three secretaries.) The floor will also contain a seminar room and storage facilities.

The third floor will contain the laboratories and equipment for the soon-to-be-created radioactivity section, expansion of the chemistry and physics laboratories and their equipment.

The fourth and fifth floors (if built) will be devoted entirely to the housing and examination facilities for animals under tests or in isolation prior to tests.

HAMILTON COUNTY CORONER'S OFFICE

At present the Hamilton County Coroner's Office requests the Laboratory to conduct studies and investigations for them in the amount of $20,000 each year. These will continue under the proposed arrangement. However, in addition, the County Coroner would have office space and would establish the morgue in the Kettering Laboratory building. The staff of the Coroner's Office and the morgue will require 3 new Kettering Laboratory employees. This is in addition to the Coroner and his secretary who will have offices in the building, but will be paid by the County.

On the basis of the $200,000 payment for a 10-year period it is estimated that the County will be obtaining space at approximately $3.00 to $3.50 per square foot per year for the 6,000 to 7,000 square feet they will utilize.

Dr. Kehoe stated that to some extent it might be asserted that industry is subsidizing the housing of the Hamilton County Coroner's activities. On the other hand, he felt it represented an extension of activities previously carried on by the Laboratory, and provided a source of funds for the building which, under other conditions, would not be available.

COST OF ADDITION

The proposed cost is estimated at $1,200,000 of which approximately $950,000 represents building costs and the balance equipment and furnishings. However, final details on construction materials have not been agreed upon, so some change in total costs may be forthcoming.

After the expansion, estimated total building and equipment cost would be as follows, based on various assumed contributions:

	Total	Ethyl	%
Previous Contributions	$1,037,414	$448,500	43
Proposed Addition:			
No Ethyl Contribution	2,237,414	448,500	20
Contribution of $175,000	2,237,414	623,500	28
Contribution of $340,000	2,237,414	788,500	34

ADDITIONAL PERSONNEL AND BUDGET REQUIREMENTS

Dr. Kehoe advised that the overall operating budget during the next few years is expected to increase to approximately $1,200,000. This estimate

includes the utilization of the new building which will require an estimated increase in personnel of about 25 Laboratory employees. The addition to the Laboratory staff will be made up as follows:

Animal Care	3
Bio-Physics Laboratory	6
Chemical Laboratory	2
Janitors	2
Maintenance	1
Coroner's Office	3
Miscellaneous	5
Total Increase	25

The dollar increase in the budget will, according to Dr. Kehoe, be proportionate to the present budget; that is, the increase in personnel will be approximately 20%, which results in an increase in the present budget of $1,000,000 to the estimated $1,200,000.

ETHYL OBLIGATION TO SUPPORT EXPANSION

While Ethyl at the present time provides approximately 25% of the financial support of the laboratory, there has been no determination made of the percent of the Laboratory space and facilities utilized for Ethyl's projects. Consequently, basing Ethyl's contribution for the Laboratory addition on Ethyl's financial support does not take into account space and equipment requirements. In other words, there is no necessary correlation between the dollars in support and the space and equipment acquired.

SUGGESTED BASES FOR ETHYL CONTRIBUTION

The method and amount of contribution are decisions to be made by Ethyl Corporation. Dr. Kehoe has suggested a contribution in the range of $175,000 to $340,000. Two bases have been provided upon which our contribution could be based. Both bases were predicated on the fact that 25% of the current and future operating expenses of the Laboratory will be paid by Ethyl Corporation. However, there is no factual evidence that Ethyl Corporation activities will utilize 25% of the useable area and equipment now or in the future.

The first basis of support assumes that Ethyl Corporation's payments for experimental work and services in the next 10 years will average $250,000 per year and, therefore, constitute about 25% of the Kettering Laboratory budgets. Since the new addition to the Kettering Laboratory with its equipment is estimated to cost $1,200,000, Ethyl is allocated 25% or $300,000. An additional charge of $4,000 per year for 10 years would be imposed as rent on space allocated to our salaried Medical Department employees. This would make a grand total of $340,000.

The second basis of making a contribution presupposes a total investment, including the new facilities, of $2,237,414. Using the previously mentioned 25% Ethyl's obligation would be theoretically $559,350, of which we have already contributed $448,500. Our contribution to maintain the 25% ratio would be $110,850. To this is added the rental cost on 1,200 square feet of space at $4.00 per square foot for 10 years and $500 per year for 10 years to cover office supplies, equipment and medical facilities, thus bringing our total to $163,850. As a closing entry in this analysis, Dr. Kehoe recommends $175,000.

An arrangement to pay the contribution over a period of years would be acceptable. Also, some agreement to restrict the use of the facilities to industrial use, say, for a period of five years, might also be arranged with the University. This would preclude the University from taking over space for other uses within this period of time.

The suggested charge for the space utilized by the Ethyl Medical Department in the Kettering Laboratory facilities is a new approach. No rental charge, actual or theoretical, has been considered in prior capital contributions nor in the annual operating costs. The extent to which rent should be considered as a factor in determining the contribution is important not only as it results in paying rent on a facility for which we have provided a capital contribution, but also because it establishes a precedent for the Laboratory to charge an annual rental for the Medical Department space in the future.

FUND RAISING

Dr. Kehoe advised he expects to contact 51 companies in his solicitation for building funds. No foundations are to be contacted for funds at this time. It should also be mentioned that while the Laboratory was named in honor of C. F. Kettering, neither Mr. Kettering nor any foundation associated with him has ever contributed financially to the Laboratory. There is no funded debt outstanding, nor is any contemplated for the expansion.

To date, Dr. Kehoe has firm commitments for $250,000, of which $200,000 is from Hamilton County. The Hamilton County amount is to be paid in the form of 10 years advance rental on the space allotted to house the Hamilton County Coroner's Office and the morgue.

RESEARCH AND DEVELOPMENT DEPARTMENT COMMENTS

The following comments were furnished by Mr. Herzog, based on his discussions with Mr. Swartwood concerning the proposed contribution to the Kettering Laboratory.

1) The Kettering Laboratory has done a valuable job at a reasonable unit cost.

   There is no good way of accurately determining if the correct level of effort was applied or if the results could have been obtained with a smaller staff. However, it appears unlikely that this high quality work could have been obtained elsewhere at a lower price. The real need for the number and complexity of some of the studies requested appears worthy of future investigation.

2) It is estimated that the needs of the Research and Development Department for Kettering Laboratory studies in the future will be at least as great and probably greater than they have been in the past.

COMMENTS OF DR. KEHOE RE. NEED OF EXPANSION

In his communications with Mr. Turner, Dr. Kehoe has highlighted some reasons which he considers warrant the expansion of the Laboratory facilities.

In his letter of June 22, 1959, Dr. Kehoe states:

> "I think I might point out that this is not so much the expansion of our activities, but the modification of them to meet the specific requirements of industry in certain directions. In effect, it is the rounding out of activities in which we have been too little represented in the past."

Dr. Kehoe indicates that available space does not permit the desired increase in activities, and that with the proposed extension the Laboratory will have acquired about all of the space that can be allotted to it at the University's Medical School. He has planned the expansion to make as effective use of the facilities as possible.

More detailed comments concerning the need for expanded facilities are set forth in the attachments to the letter to Mr. Turner.

In the "Brief Summary of Memorandum" it is stated:

II. "The requirements of Ethyl Corporation during the past two years has put some strain on the Laboratory and threatens to occupy an undue proportion of the toxicological facilities. It is believed that these requirements will continue for years to come and that the ability of the Laboratory to meet some reasonable proportion of the needs of other industrial sponsors (and so to broaden the bases of both research and financial support thereof) depends upon the early enlargement of the facilities."

In the supporting "Memorandum on Need for Additional Space and Facilities in The Kettering Laboratory" Dr. Kehoe sets forth in more detail the principal developments which, in his opinion, call for additional facilities. These are as follows:

1) "New technological trends in industry. The applications of new types of energy in industrial production have created new hazards. The elucidation and control of

which are in the realm of biophysics. At the same time, the use of physical tools (radioisotopes etc.) in the Laboratory has developed to a point that makes mandatory their further use in the elucidation of biochemical and toxicological problems. The Laboratory has found it necessary, therefore, to establish and implement a division of biophysics, within which the physical and biological techniques concerned with noise, high frequency radiation, atomic radiation, can be applied with safety and increased scope.

2) "Intensification of old technological trends, with modification. Through further rapid strides in industrial chemistry, many new materials and processes have come into existence. These, in themselves, multiply occupational and public hazards, and require extensive facilities for toxicological investigation. In addition, the concern of our informed people (and some uninformed, or insufficiently informed people, as well) about the threats offered by modern technological developments to the health of both the working and the general population, has undergone a great increase in recent years. This has intensified the demand for research, and has altered its quality, with both beneficial and detrimental effects. On the one hand, the need for improvements in the practice of industrial medicine and hygiene has required that the scope and depth of research in industrial toxicology be increased. The mechanisms of action of injurious agents, both chemical and physical, must be explored and elucidated, and not merely catalogued by their capacity to cause injury and death.

"On the other hand, the powers and responsibilities of certain Governmental agencies, notably the Food and Drug Administration, have been expanded greatly by legislation, and this expansion of responsibility has been translated into an elaborate set of specifications for the investigation of the hazards which reside in the additives to food or to the contaminants of food. That some such development was inevitable is somewhat beside the point of these remarks. The fact is that the present detailed specifications of F.D.A. increase enormously the demand for facilities for toxiclological investigations, and greatly multiply the expense of industrial operations in relation to the production, preservation, processing, packaging and distribution of food in the U.S.A. We are caught in

this situation, and despite the relatively unproductive nature of these investigations, pursued as they now must be, without either imagination or real scientific incentive, we must be prepared to meet some of the needs of our industrial sponsors. The demand for facilities in this phase of our work is great, in that elaborate feeding experiments carried out with large (prescribed) numbers of animals, tie up expensive space (which must be meticulously sanitary and well air-conditioned) for two or more years at a time.

3) "Adaptations to other needs of the local community. Some years ago, certain of the facilities of the Kettering Laboratory were made available to the government of Hamilton County. The chief of the division of pathology, at the request of the County Coroner, became the Coroner's pathologist, and the toxicological facilities, including those concerned with analytical determinations, were put at the disposal (within contractual limits) of the Coroner and the County Prosecutor. This feature of our work, which has served to eliminate the amateurish and political flavor of this type of forensic medicine in Hamilton County, has met with favor, and the County Commissioners have desired to establish adequate physical facilities (morgue, necropsy rooms and instruments, separate, legally privileged facilities for toxicological investigation, and administrative offices) in the Kettering Laboratory at their expense (the capital sum of $200,000.00 in lieu of rental for 10 years, has been made available to the University of Cincinnati, whose property these facilities will be)."

With reference to Ethyl's requirements, Dr. Kehoe states:

"With specific reference to the situation of Ethyl Corporation in this development, certain facts and suggestions are incorporated in one of the attached sheets of financial data. An additional point may be made, in that the requirements of Ethyl Corporation, in connection with the development of new products and the exploitation of certain others, have put a heavy burden on the Laboratory during the past two years, and especially in 1959. The work now in progress could be expanded or expedited to absorb most of the personnel and facilities of the toxicological division. This, obviously, would not be wise,

but if it is to be avoided now and in the future, we must have some margin of resources that will enable us to respond to the sudden or unforeseen requirements of our sponsors. There seems little likelihood that such demands on the part of Ethyl Corporation will diminish during the next ten years or more, if the history of these developments repeats itself or follows any sort of comparable trend. Basic information as to the role of certain metallic elements and compounds discharged into the atmosphere from various types of fuel-burning equipment will be required as background for the public safety in connection with the use of these materials. In addition, the continuing search for new chemical products, and the development of these products, will keep us (or some other investigative group) occupied to a very considerable extent. We might anticipate that no less than one-fourth of the facilities of the Laboratory would be engaged in work for Ethyl Corporation for years to come, and that approximately one-fourth of its budget would derive from that source. On this basis, one might believe that one-fourth of the cost of the additional facilities should be allocated to Ethyl Corporation...."

SECTION III

RECOMMENDATIONS

DISCUSSION

Any decision for making a contribution to the expansion of the Kettering Laboratory should take into account the following considerations:

1) Company Policy on Contributions.

2) Ethyl's future needs for services from the Laboratory.

3) Ethyl's prior contributions and present use of the existing facilities.

4) Our Company's interest in preserving the goodwill of the Kettering Laboratory as the principal repository of our medical research data, skills and experience.

A brief discussion of these four considerations follows:

1) COMPANY POLICY ON CONTRIBUTIONS

Under Ethyl's present policy, contributions can be made to educational institutions, including grants for building programs, provided they directly benefit the Corporation. Otherwise, it has been the Company's general practice not to support individual colleges or associations of colleges. The principal exceptions have been the National Fund for Medical Education, United Negro College Fund and the Louisiana Foundation for Privately Supported Colleges and Universities. Our policy also states that no contributions are to be made to tax-supported institutions, except those where Ethyl might directly benefit, as stated above. Consequently, any contribution to the Kettering Laboratory will require consideration of the benefits Ethyl will gain from the contribution.

2) ETHYL'S FUTURE NEEDS FOR SERVICES FROM THE LABORATORY

As indicated by the Research and Development Department's comments, the future needs of the Corporation for Kettering Laboratory services are expected to be at least as great as in the past. A more definitive forecast of future needs is difficult to determine because of the nature of the research activities involved.

While present facilities may now be adequate for the expected needs of the Corporation, future projects may demand special facilities not now available.

3) ETHYL'S PRIOR CONTRIBUTIONS AND PRESENT USE OF THE EXISTING FACILITIES

Forty-three percent of the present capital investment has been provided by Ethyl Corporation. Therefore, it would appear unnecessary for Ethyl to contribute additional funds for capital expansion until Ethyl projects utilize a like proportion of the present manpower, space and equipment. At present, Ethyl pays 25% of the Laboratory's operating budget. However, this does not necessarily imply that we utilize 25% of the manpower, equipment and space. Moreover, we have no obligation to subsidize a County Coroner's Office for Hamilton (Ohio) County, or teaching facilities for a municipality. In principle, we should not be obligated to subsidize projects not related to our business.

4) GOODWILL AND SUPPORT OF INDUSTRIAL TOXICOLOGY

An important factor, bearing on a decision to make a contribution to the Laboratory, is the Corporation's interest in maintaining the goodwill of a laboratory which is now the principal repository of the extensive medical and research data conducted on TEL. The need for continuing the leadership of the Kettering Laboratory in medical research on TEL and in other fields in which Ethyl is now active is a matter of direct interest to Ethyl. Similarly, industry-wise problems involving the toxicological effects of various products, require a recognized center for research. It is conceivable that unless laboratories of this type are supported by industry grants or research projects, the Federal Government may preempt this field.

It is recognized that other laboratories are now available to do work similar to that performed by the Kettering Laboratory. Dr. Kehoe feels that only by enlarging its facilities and expanding its services can the Kettering Laboratory continue to maintain its position in the field of industrial medicine.

CONCLUSIONS

It would appear that the present facilities could easily meet our forseeable needs if utilized for us to the extent we have already provided buildings and equipment by prior contributions. In other words, until it can be shown that we utilize 43% of the present facilities, the expansion might be solely for the benefit of other users. However, viewing current and future needs of Ethyl Corporation, it may be important to us to assist in maintaining the leading position which this Laboratory has obtained. This is not only important as protection of the Laboratory as the principal repository of TEL and medical research data, but as insurance for qualified research whenever such data is needed, whether related to TEL or other products.

If so desired, the contribution might also be supported based on the fact that industry alone must support laboratories of the type as the Kettering

Laboratory, and that outstanding laboratories are needed if industry is to market products containing toxic materials. While basically such support should be based on the individual needs of the Corporation, overall industry responsibility may dictate the desirability of supporting high-type research facilities which will be readily available whenever needed. The dollars and cents benefits to be derived are difficult to assess; consequently, no recommendation as to a specific sum is being made.

Regardless of the amount of the contribution, it is suggested that consideration be given to:

1) Making the contribution in installments.

2) Identifying specifically the amount of non-industrial use which will be made of the expanded facilities.

3) Restricting the use of the facilities for industrial research activities for at least an agreed upon period of time.

4) The nature and amount of contributions to be made by other industrial sponsors.

J. H. Kirby

W. G. Ball

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