bcc: J. R. Eck
H. S. Bergen
E. V. John
H. L. Minckler
W. B. Papageorge
P. S. Park
S. Pickard, Wash., D.C.
J. E. Springgate
E. P. Wheeler

June 30, 1970

Hon. William F. Ryan
House of Representatives
Washington, D. C.

Dear Congressman Ryan:

This will serve to acknowledge your letter of June 18 referring to what you describe as Monsanto's unwillingness to deal candidly with the chlorinated biphenyl issue. I believe your implications to be entirely unwarranted and based on a complete lack of factual information.

Firstly, I would like to describe to you the actions which this company has taken and will continue to take to ensure that the chlorinated biphenyls present the minimum possible threat to the environment. Secondly, I will answer the individual points raised in your letter to ensure that you are fully aware of the current position.

At our meeting in your office last April, Mr. Pickard and I endeavored to clarify for you some of the misconceptions on which your earlier press release was based. At that time, we were unable to give you full details of many of our plans and actions as these involved several of our customers using chlorinated biphenyls and it was necessary to discuss details with them prior to public disclosure. Since that time, all of our customers have been contacted both verbally and by letter and I am now in a position to explain our plans and actions in detail.

Based on the findings of our own and many independent scientists, we believe that it is necessary to rigidly control the manufacture, use and disposal of chlorinated biphenyls to avoid build-up in the environment. We have, therefore, taken the position that as the manufacturer and distributor of a range of chlorinated biphenyls we have a responsibility to ensure that they are used only in applications where their unique properties are vitally important to industry and the economy and where usage and eventual disposal can be monitored and controlled.

How are we fulfilling this self-imposed responsibility?

1. We have taken the decision that effective from the 30th of August we will no longer sell the chlorinated biphenyls to customers for use in general plasticizer applications where disposal of the end



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products cannot be controlled. This includes all the applications referred to in our bulletin O/PL-306. All of our customers who have used these products in the past for these applications have been advised of this decision both verbally and by formal letter. We are working closely with them to recommend suitable alternative products which present no danger to the environment.

2. In many of the applications where chlorinated biphenyls are used as hydraulic fluids, we are not satisfied that it is possible to control their usage and eventual disposal to ensure that there is no possibility of escape to the environment. We have therefore taken the decision to reformulate such fluids and we are currently working with our customers to change over to these new formulations. A substantial part of this program will be completed within the course of the next three months and in other areas where performance requirements are difficult to achieve with alternative products, we consider it will take until the end of 1970 to complete change-over.

3. In areas where the chlorinated biphenyls are used in closed system applications, e.g. transformers, capacitors, and heat transfer fluids, we will continue to sell the chlorinated biphenyls as their unique, fire-resistant properties are extremely important in ensuring maximum protection for the safety and well-being of the population of this country. As you should be aware, the major usage for the chlorinated biphenyls is as coolants in transformers where they have replaced such other materials as oil and have greatly reduced the risk of fires and explosions which in the past have often had disastrous results in terms of human lives. These closed system applications are such that by working together with our customers, we can avoid emissions to the environment.

   Coupled with this decision to continue selling chlorinated biphenyls for closed system usage, we have established a service to collect spent fluids which are returned to our manufacturing sites for regeneration or destruction in a specially designed, high-temperature incinerator. This incinerator breaks down the chlorinated biphenyls into harmless materials, mainly hydrochloric acid which is scrubbed out of the waste gas stream, neutralized and passed through our waste treating facilities.

   Although we are confident that we can achieve a very high degree of control in these closed system applications, we are not completely satisfied and we are working to develop modified chlorinated biphenyls which will be biodegradable. This means that even if minute quantities of chlorinated biphenyl are released to the environment by accidental spills and/or leakage, it will be possible to remove them from waste water streams in conventional secondary treatment facilities.



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In my opinion, Congressman Ryan, these actions and plans indicate that Monsanto is taking an extremely responsible attitude to this problem and is doing everything within its power to ensure a maximum degree of control to prevent the possibility of the chlorinated biphenyls escaping into the environment. I would remind you that these actions are being taken by the company on a voluntary basis and without direction either by federal or state government authorities.

I will now return to the individual questions raised in your letter.

You imply that Monsanto has not sought the opinions of men like Dr. Robert Risebrough. This is completely untrue! Surely you must remember at our April meeting I told you that three members of Monsanto, Dr. Robert E. Keller, Manager of Applied Sciences, Mr. William B. Papageorge, Manager, Environmental Control, and Mr. Elmer P. Wheeler, Manager, Environmental Health, Medical Department, all traveled to California especially to visit Professor Ollcott and Dr. Risebrough at the University of California in Berkeley. They reported to me that they had a most useful exchange of ideas and opinions with Dr. Risebrough covering the toxicity of the chlorinated biphenyls, Monsanto's plans to develop substitute products, detailed discussion on analytical techniques and on the work carried out by Dr. Risebrough on the effects of the chlorinated biphenyls on birds and fish. At the end of the day, Dr. Risebrough expressed appreciation of Monsanto's approach and was glad to note that the company was taking a responsible position on the chlorinated biphenyl problem.

As you are well aware, there are many other workers in this particular field and during the last two weeks of May, the individuals referred to above visited Europe to meet and exchange information and opinions with the following:

- Professor Widmark - Sweden
  (As you may be aware, Professor Widmark was the first worker in this particular field, identifying the presence of chlorinated biphenyl in birds.)

- Scientists of the Food & Hygiene Department of the Public Health Service - Sweden

- Dr. Koeman
- Professor Van Gerderen
  (Both of these gentlemen are from the University of Utrecht - Holland.)

- The Government Chemist - United Kingdom

- Fresh Water and Fisheries Laboratories - Scotland

- Nature Conservancy Scientists - England

- The Laboratories of Agriculture and Fisheries at Tolworth and Burnhan-on-Crouch - England



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In addition, as I advised you in my previous letter, Monsanto has held several meetings with various federal and state agencies to exchange information on the chlorinated biphenyl issue. During the month of July, Mr. Papageorge and Mr. Wheeler will make further visits to a number of government and state agencies to bring them up-to-date on the results of our latest toxicity studies on the chlorinated biphenyls and to make them aware of progress in implementing our plans to phase out of non-controllable applications and the development of substitute products. During these proposed discussions, we will welcome constructive criticism, comments and recommendations and if Dr. Risebrough or any other individual working in this field would like to meet with us, they will be extremely welcome.

You consider that our reply to your questions on possible emissions to the environment from our manufacturing operations is vague and that we avoided responding to specific questions concerning the type of controls in use. This is not the case and the following additional information should make this quite clear.

The process for the manufacture of chlorinated biphenyls is a relatively simple, high-yield reaction with no inherently difficult emission problems. There are no stack gasses or water streams which are in contact with the product during the manufacturing process. Control of emissions is therefore concerned with prevention of leakage and spillage and safe disposal of any material which may escape in this way. The following covers the major methods we use to control possible escape:

1. High priority is given to maintenance of pipes, joints, valves and pumps to avoid leakage.

2. Curbs and drip pans have been provided to collect any leaks from such equipment where trouble may possibly develop.

3. Continuing indoctrination of all plant personnel is practiced to be sure that they completely understand the importance of preventing losses to the environment. In our opinion, this is one of the key areas in any pollution control effort.

4. We are currently constructing catch basins in the main sewer of each of our chlorinated biphenyl plants as an added safety measure to collect any material which may pass the other safety devices.

5. Air emissions are virtually non-existent as the boiling point of chlorinated biphenyl is extremely high and it can, in fact, only be distilled under high vacuum. This means that vapors are easy to control and they are returned to the system by means of condensers.

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6. An incinerator has been designed to destroy all chlorinated biphenyl residues collected from the plant and as indicated earlier in this letter, this incinerator will also be used to completely destroy spent material collected from our customers.

7. While the above actions have already reduced our chlorinated biphenyl losses to the parts per billion range, we are conducting research on a tertiary treatment process designed to remove even these minute traces of chlorinated biphenyl from waste water streams. We expect to complete this research program prior to year-end when this additional equipment will be installed.

Your request for copies of the additional bulletins on chlorinated biphenyls, which were referred to in our bulletin O/PL-306, was not deliberately ignored. As these bulletins do not give any additional information on chlorinated biphenyl usage, we did not see any point in supplying you with copies. As we are no longer offering the chlorinated biphenyls for the uses referred to in these bulletins, we are naturally not distributing any further copies.

Incidentally, Congressman Ryan, you are incorrect in stating that I have given assurances that chlorinated biphenyls are only used in closed systems. I have not given such an assurance to anyone. What I did say in my last letter was, "We have repeatedly stressed the major markets for PCB-containing products are in electrical applications, where the fluid is sealed into an electrical component, and in closed system heat transfer usages."

It is certainly quite possible that Dr. Risebrough has discovered chlorinated biphenyl in paints bought at the Berkeley, California, hardware store. These materials have been used in specialized paints, particularly where a high degree of corrosion resistance is required.

Your understanding that I "admit that during the early days of PCB use there were many suggested chemical uses that have since been discontinued" is incorrect. What I actually said during discussions in your office and in my last letter was that many of the suggested uses of the chlorinated biphenyls have not developed into significant business. I think we have answered your question as to what Monsanto has done to discourage continuation of such uses in very complete detail earlier in this letter. As you know, we have issued warnings to all of our customers using the chlorinated biphenyls. We have not issued warnings to all potential users of chlorinated biphenyls, but we have more than covered this point by refusing to sell for applications where control cannot be established.

Your question as to whether we have issued notices recalling bulletins such as O/PL-306 is a reasonable one. So far, we have not taken this action, mainly because, as you know, this bulletin went out of print some years ago, but in view of our decision to withdraw from this business, we will



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probably recall any remaining copies of this and other bulletins referring to general plasticizer usage.

My answer to your repeated request for information concerning our annual production and sales of chlorinated biphenyls must be the same as that given in my previous letter and during our discussion in your office. We consider information concerning our production and sales figures as confidential, particularly as in this case we are the only manufacturer of these products in the U.S.A. I repeat, however, that we are perfectly willing to make such information available to responsible government agencies subject to our receiving an assurance that these figures would be kept confidential and used only for scientific purposes.

Release of a complete list of the uses of chlorinated biphenyls at this stage would serve no useful non-political purpose. We have taken far more positive action in withdrawing from the sale of these products for general plasticizer applications and, in addition, of course, we could not release details of individual products containing the chlorinated biphenyls without specific permission from each individual customer. Monsanto does not use the chlorinated biphenyls in the manufacture of any other product except the hydraulic and heat transfer fluids which I have referred to earlier in this letter.

It would have been completely impossible for Monsanto to ensure that all our customers labelled their products indicating that they contained chlorinated biphenyls. However, the position is now somewhat different inasmuch as we are restricting our sales to closed system fluid applications. In the case of both our hydraulic and heat transfer fluids, we are labelling all drums indicating they contain chlorinated biphenyls and that particular care should be taken to avoid spillage and leakage to the environment. In the case of the electrical uses of chlorinated biphenyl, we know that the American Society of Testing Materials, the Institute of Electric and Electrical Engineers and the C.I.G.R.E. (Conference Internationale des Grands Reseaux Electriques) are developing a label which will be used on all end products containing the chlorinated biphenyls.

I believe that in this letter I have given you a full and fair description of the responsible actions which this company is taking to minimize the possibility of the chlorinated biphenyls escaping into the environment. In addition, I think your questions have been answered fairly and honestly and I hope that you will see fit to withdraw your allegations that Monsanto is unwilling to deal candidly with this issue.

Sincerely,

John Mason
Assistant General Manager

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