PCB
Miss Cuny

May 14, 1971

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Dear Dr. Peakall:

Mr. William Papageorge, manager of Environmental Control for Monsanto's Organic Chemical Division, would have answered your letter of April 30 if he were not out of the office recovering from surgery. In his absence, I have been asked to provide the information requested and apologize for any delay Bill's absence may have caused.

In chronologisal order and briefly, Monsanto has taken the following action to control the escape of the persistent PCB's to the environment:

1. In January and February of 1970 we informed all customers and distributors of our understanding of the PCB problem and recommended that all possible precautions be taken to prevent escape of the materials to the environment.

2. On April 13, 1970 we requested the Pesticides Regulations Division of the U. S. Department of Agriculture to discontinue approval of any pesticide formulation containing PCB's. This was done even though our records of direct sales indicated that the PCB's were not widely used in such formulations and that the quantities that were used were involved in insectides intended for spraying or painting on hard surfaces for the control of "domestic" insects such as flies, ants, roaches and silverfish. We were aware that in the middle and late 1950's there had been some usage of chlorinated terphenyls and possibly PCB's in

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"broadcast" type applications in efforts to control pests affecting elm trees. We were not sure however, that some of the PCB's might be getting into unsuspected uses because of purchases through distributors. The request to the USDA resulted in action by that agency as indicated in the enclosed release dated October 29, 1970.

3. In June of 1970, we notified all customers, distributors and users of PCB's that the company planned to place restrictions on sales for uses where we felt escape could not be prevented.

4. As of August 31, 1970, all sales for plasticizers, surface coatings, adhesives, etc. to customers and distributors ceased. We offered, in addition, to repurchase unopened containers to prevent any further use in these applications.

5. Finding substitute products for fire resistant industrial hydraulic fluids permitted us to phase out of the PCB's in these uses as of March 1, 1971. I am sure you appreciate that one of the principle advantages of such fluids was in increased safety for human lives and property which the fire protection provided.

6. All uses for heat transfer applications have been phased out exeept for those situations where again fire resistance is so critical in terms of possible loss of lives. A substitute has not been found feasible in these cases as in the situation immediately above. The educational program with customers which began in January and Febrursy of 1970 is continuing to insure that all care possible is being exercised to prevent spillage, leaks and other sources of escape.

Perhaps a better way of describing the uses that have been eliminated is to mention those uses where we think environmental contamination can be and is being policed. These include the use in electrical transformers, electrical capacitors and those situations mentinned in No. 6 above. The educational program which we initiated for the PCB's originally has contained in terms of any substitute products since control of these or competitive materials is mandatory

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in most industrial situations today.

We have sponsored a number of toxicological studies. A summary of the data available at that time was presented at the March 1971 meeting of the Society of Toxicology in Washington. An abstract of the paper presented then is enclosed. Somewhat more detailed summaries for the studies underway are also enclosed. You will note that the two year chronic dog studies will be finished on May 23, 1971. The two year feeding in rats will be finished May 19. The work with the leghorns has been completed insofar as the initial studies are concerned.

You will note that there is a difference in toxicity of the three materials examined i.e. Aroclor 1242, 1254, and 1260. There is also a difference depending on species studied. For example, whereas Aroclor 1260 caused no effects in the levels fed chickens and Aroclor 1242 had a demonstrated effect. The lower chlorinated material appears to have less an effect in rats and dogs as compared to the higher chlorinated substances.

We have some analytical data in connection with the storage or residue of these materials in chickens, rats and dogs. We would agree that there is a difference depending on degree of chlorination. I believe this is about all we can say at this point since the analyses of tissue have only recently begun. We have something on the order of 800 cubic feet of storage space filled with tissues for eventual analysis.

We have not undertaken studies to develop information specifically related to metabolism. As you know, there are so many laboratories across the country and perhaps the world looking at the PCB's that we have felt our first objective was to determine levels of toxicity without necessarily pinpointing the mechanisms involved.

I would like to take this opportunity to express our congratulations for the publication authored by you and your associate, Dr. Lincer, which appeared in Bio-Science last September. Our first view of this publication was in Dr. Garth Fitzhugh's office in the FDA about a wekk after the article appeared when we were in Washington making a periodic visit to concerned agencies to present the status of our toxicity studies and our programs. Unfortunately, not all scientists who have published articles concerning the PCB's have reviewed so painstakingly the literature and presented such a fine bibliography to support the authors' views.

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In reviewing the foregoing contents of this letter, I find I have not mentioned one important part of our program.

I did outline our step-by-step restrictions in the sales of persistent PCB's. This has brought us to the point where the only continuing uses for which we sell these materials are in sealed electrical transformers and capacitors and in heat transfer systems where fire resistance is critical and where substitute products are not available. I mentioned also our educational program with those companies involved in these uses.

To further "close the loop" or insure recycle of the PCB's without escape to the environment, we are taking back "spent" fluid from our customers. If the fluid can be reclaimed by filtering and/or distillation, this is done and the fluid is reused. If such clean-up is not possible, we will destroy the PCB's in a recently constructed incinerator which decomposes them completely to CO_2, H_2O and hydrochloric acid which is scrubbed from the off gases and not allowed to go up the stack. Although the incinerator is only about to go on stream, we have been building up "scrap" PCB's returned by customers for nearly a year.

I hope that all of the above information will be of interest and helpful.

Very truly yours,

Elmer P. Wheeler
Mgr., Environmental Health
Medical Department

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Enclosures

cc: Mr. W. B. Papageorge

bcc: E. V. John
H. S. Bergen
W. R. Richard

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