

Monsanto

APR 24 1981

FILE -
PCB MISC.

FROM: J. H. Craddock - St. Louis A2SA 4-4764

DATE: April 24, 1981

cc. D. R. Bishop - A3NB

C. F. Callis - B3CA

SUBJECT: LOW LEVEL ANALYSIS OF
PCB IN BLOOD

R. S. Nelson - A2SA

J. R. G. Ortiz - E2ND

REFERENCE:

G. Roush, Jr. - G2WG

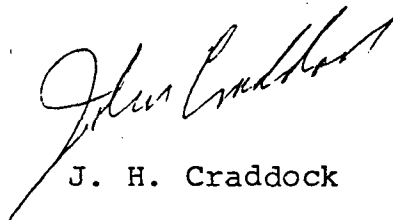
TO: D. J. Dahm - 1250
B. G. Ward - G2WB

I have reviewed the attached proposal for the research program on low level PCB analysis in blood. It is a good start on our program to have worldwide capabilities for the extremely low levels of PCB's that we are encountering in human samples.

I agree that EASC is the proper place to develop these capabilities, in their ultratrace analysis program, and support your proposal. More frequently, persons involved in any PCB incidents are being subjected to various blood and other analyses. We need to have a firm basis to evaluate results reported from these various incidents and/or be able to recommend methodology or contract facilities we believe capable of obtaining sound analytical results. I have discussed this problem many times with other Monsanto management, including the carbonees. I think I can speak for them in saying that we all recognize the importance of this program and offer you their support, also.

When we get to the stage of evaluating capabilities of outside laboratories to perform this kind of analysis, I will provide you with a list of contacts who have inquired about such capabilities/know-how and who have expressed an interest in participating in some sort of a round-robin method validation.

Please keep me informed of your progress.


J. H. Craddock

jb
enclosure

PCB* IN BLOOD PRELIMINARY STUDY

Scope

Define a procedure for the analysis of PCB's in blood; ensure that the procedure is capable of producing meaningful data at the levels reported by previous studies for "non-exposed" subjects; develop data for actual subjects; review developed data for overall reliability (meaningful $\pm$ 3 σ limits as a target).

Introduction

Much confusion exists regarding the significance of PCB levels in blood with respect to exposure. This is exemplified by the paranoia surrounding every minor incident involving PCB's. This situation will continue to haunt Monsanto until a data baseline subject to peer review is developed. This work will be a first step in that direction.

Needs

1. A single, effective, valid method for determining PCB's in blood to a lower detection limit of 0.1 - 0.25 ppb. The method must be usable over the range of values currently reported in studies of "non-exposed" subjects, i.e. 1 - 100 ppb.
2. Select "non-exposed" volunteers, and obtain data for these subjects.

Strategy

1. Update current bibliography of methods using computer library search, and phone contact with laboratories reporting analytical data.
2. Having an updated review of current practices in hand, define the method of choice for PCB in blood compatible with available resources and analytical sensitivity requirements.
3. Test procedure on incrementally spiked blood samples prepared from two homogeneous bulk samples.
4. Solicit volunteers (8-12) from a pool of "non-exposed" employees, and acquire triplicate blood samples from each subject.
5. Prepare one of the samples from each subject by addition of a spike increment for evaluation of recovery for individual samples.

* The use of the term PCB encompasses and is not exclusive to the Aroclors®

6. Laboratory analysis of samples; two duplicates and one spiked sample for each subject. Use of the spiked samples (3 above) for quality control purposes.
7. Review data for integrity, reproducibility and significance.

Cost

This study to be funded by the EASC Ultratrace Budget. PCB's have assumed a higher priority in their ranking. This cost will be an inherent part of their 1981 learning curve on the PCB Ultratrace Analysis program covering more than just blood analyses. Estimated initial cost of ~ \$30,000.

Timing

Completion of this study by July 31st, 1981. (Tentative)

B.G.W. 4/20/81