

REPORT OF MEETING WITH MINISTRY OF AGRICULTURE,
FISHERIES AND FOOD,

AT MONSANTO HOUSE, LONDON - 10th MARCH, 1970.

Rev'd 3/23/70

Present for Ministry :

J.E.Portmann) - Fisheries Laboratory, Burnham-on-Crouch.
P.C.Wood)
A.V.Holden - Freshwater Fisheries Laboratory, Pitlochry.
S.Bailey - Infestation Control Laboratory, Tolworth.

For Monsanto :

D.S.Cameron
R.A.Lidgett
H.A.Vodden

Copies to :-

J.W.Barrett	- London	H.R.Newman	- Newport
H.S.Bergen	- St. Louis	R.A.Onians	- Brussels
H.N.Dahlstrom	- Brussels	W.B.Papageorge	- St. Louis
K.Fletcher	- London	R.E.Soden	- Brussels
B.T.Garland	- London	J.E.Springgate	- St. Louis
J.C.Garrels	- London	J.Thevenin	- Brussels
F.Macdonald	- Newport	R.G.Veldeman	- London
P.J.A.Marsh	- Brussels	H.A.Vodden	- Ruabon
		E.P.Wheeler	- St. Louis

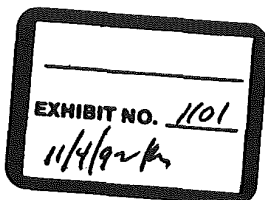
C O N F I D E N T I A L

SUMMARY

By leading the discussion away from sensitive areas, by prolonging the further exchange of analytical techniques, and by encouraging debate as to why the PCB residues commonly found in nature more closely resembled pentachloro-

COMPANY
CONFIDENTIAL

TRAN 005552



diphenyl, we were able to preclude the direct question "who are the main users of PCB's and where are they located?". This was one of the specific questions raised at our previous meetings and repeated in the Ministry of Agriculture's letter dated 30th January addressed to the Chemical Industries Association.

Accordingly, we did not name any customers, nor did we disclose the NCR paper application. The Ministry are no wiser about the applications for PCB or the major geographical areas of usage than they were after our January meeting.

The Pitlochry and Burnham laboratories have now found PCB resembling pentachlorodiphenyl in some sewage sludges. It is their intention to try to trace back to the origin of this sewage and to identify the plant responsible for it. They will send us sludge samples so we may check their findings.

Contact will be maintained with Wood, but no date was fixed for a further meeting.

DETAIL

- 1) We asked that anything we said be regarded as confidential and this was accepted. If they wish to use anything we have disclosed in their contribution to the NERC report they will first seek our clearance to do so.
- 2) A.C.Simpson is the director of the Burnham-on-Crouch laboratory, and his approach to the CIA was to see if they had any data on the major users of PCB's and the extent of imports into the U.K. We thought it unlikely the CIA would have this information and they would be more likely to contact us, as they have done.

Imports of PCB's are not quoted in the normal Board of Trade import statistics, but we thought them to be very small. This information must be available from the Statistical Office and it would probably be much easier, and less costly, for the Ministry of Agriculture to obtain it than for ourselves. They will follow this up with the Board of Trade.

COMPANY
CONFIDENTIAL

TRAN 005553

- 3) Concentrations of PCB in the 5 - 10 ppm range have now been detected in some, but not all, samples of sewage sludges. These residues most closely resemble pentachlorodiphenyl. Positive results have been obtained in the Glasgow and Manchester areas - these sludges are normally dumped in the Clyde Estuary and in Liverpool Bay.

The Manchester samples were thought to have been digested. Manchester sewage is known to contain about 30% industrial sewage and there is currently 500,000 tons per year to dispose of; at 5 ppm in the sludge this would result in only 2½ tons PCB per year dumped in Liverpool Bay. The Glasgow samples were thought to have been both raw and digested, and there was some evidence of lower concentrations in the digested material.

The Burnham laboratory is now going to examine sludge samples from London and the South West which are normally dumped in the Thames Estuary and in the Bristol Channel. Samples (not necessarily from these locations) will be sent to Ruabon so that results can be compared.

- 4) No fish from the Bristol Channel have yet been obtained for analysis. To enable Ruabon to gain experience with wild life samples, Portmann will send them fish samples for analysis. To ensure techniques are comparable we shall let Burnham and Pitlochry have our detailed written method.

They would be very interested in the results of any U.S. investigations with fish and in the methods used, both in terms of toxicity and analytical results.

- 5) The Tolworth laboratory has failed to find any PCB residues in grain-eating birds, except for one occasion in a barn owl. This laboratory is planning to feed pure individual isomers to birds to establish which can and cannot be metabolized. They have so far established that the 3,4 dichloro isomer is readily metabolized - ~~no residues could be detected in birds killed within 48 hours of the end of feeding trials, nor was there any in the droppings.~~ We handed over a copy of our six-months results from the feeding trials with small mammals.

COMPANY
CONFIDENTIAL

TRAN 005554

Acute toxicity towards fish was still not considered to be a problem by the Ministry, though there was a hint of a little more cause for concern than previously reported.

- 6) They intend trying to define the catchment areas for some of the larger sewage works in the main industrial areas. Hopefully, they will then be able to trace back up the sewer lines to the origin of the sewage containing PCB. It is recognized this sort of investigation could be very time consuming so when the catchment areas have been defined we may be asked if we could identify probable pollution sources within the area.
- 7) PCB residues being found still more closely resemble pentachlorodiphenyl than any of the other commercially available grades. However, Bailey observed that these residues may be partially degraded trichlorodiphenyl rather than, for example, a 1254 residue. Alternatively, they may be penta residues arising from the greater use of this grade by the electrical industry some years ago than is the case today.

We avoided a direct answer when questioned on the quantities of PCB used in the U.K., indicating the total 1969 figure was in the thousands rather than hundreds of tons, but less than 5,000 tons. The usage of pentachlorodiphenyl was a relatively modest percentage of the total. The hexachloro compound was a component of transformer askarel but usage in the U.K. was small in comparison with the Continent.

Movement of water around the U.K. was predominantly from the South West up the Irish sea and around the North of Scotland into the North Sea, and up the English Channel. A very complicated system occurred off the Thames Estuary. Fish, such as herring, normally move over an area of some hundreds of miles but there are distinct stocks for the East and West of the U.K., and fish from the North Sea would not normally find their way to, for example, the West Coast of Scotland.

COMPANY
CONFIDENTIAL

TRAN 005555

- 8) Because of the instructions received from St. Louis, and despite the fact that both Wiggins Teape and NCR U.K. believe that disclosing their application for 1242 would be a positive and constructive step, we did not identify this application, nor did we even mention the paper industry as a user. Indeed, no customers for any grade of Aroclor were named for fear of leading the discussion into an area that would have been embarrassing vis-a-vis the NCR and Wiggins Teape position, even though in prior consultation with the major fluids and plasticizer customers they had agreed to be named, if need be.

Following our two meetings with the Ministry they must now believe the electrical industry to be the major user of PCB's, followed by a variety of miscellaneous applications in the paint, adhesive, sealant, plastics and engineering fields.

- 9) Publication of the NERC report is now unlikely before May. Up to 25 organizations have been invited to contribute - see attached appendix listing those attending the last NERC sponsored meeting on the Irish Sea incident. The report will almost certainly identify industries that use PCB, but not individual companies, and it will speculate as to how the PCB residues originate and reach the sea. Monsanto is likely to be named as the sole U.K. manufacturer, and acknowledgement would be made to the assistance we have provided. Holden suggested press interest in the report would be minimal in view of the time that has elapsed since the original incident.

ACTION

- DSC - Send comprehensive sets of Aroclor literature to Burnham, Pitlochry and Tolworth.
- HAV - Arrange for analysis of sewage sludge and fish samples and comparison of results.
- Send complete details of our analytical method to Portmann and Holden.

DSC/ec
18.3.70.

**COMPANY
CONFIDENTIAL**

TRAN 005556

Note for Editors

The following organisations were represented at the meeting:

Royal Society for the Protection of Birds
The Seabird Group
Royal Society for Prevention of Cruelty to Animals
British Trust for Ornithology
Ocean Resources Conservation Association
University of Cambridge, Department of Animal Pathology
Ministry of Technology
 Water Pollution Research Laboratory
 Laboratory of the Government Chemist
Ministry of Agriculture, Fisheries and Food
 Infestation Control Laboratory, Tolworth
 Shellfish Laboratory, Burnham-on-Crouch
 Salmon and Freshwater Fisheries Laboratory, Whitehall
 Central Veterinary Laboratory, Weybridge
 Veterinary Research Laboratories, Stormont
Ministry of Defence (Army)
 Chemical Defence Experimental Establishment, Porton Down
 Microbiological Research Establishment, Porton Down
Department of Agriculture and Fisheries for Scotland
 Marine Laboratory, Aberdeen
 Freshwater Fisheries Laboratory, Pitlochry
National Institute for Medical Research Council, Mill Hill
Department of Marine Sciences, University College North Wales, Bangor
Nature Conservancy, Headquarters, Belgrave Square
Nature Conservancy, Monks Wood Experimental Station
Nature Conservancy, Merlewood Research Station
Nature Conservancy, Scotland
Nature Conservancy, Wales
Scottish Marine Biological Association
 Dunstaffnage Marine Research Laboratory, Oban
 Oceanographic Laboratory, Edinburgh
Marine Biological Station, Port Erin, I.O.M.

The following Government Departments sent observers:

Cabinet Office
Home Office
Scottish Office
Ministry of Housing and Local Government
Department of Education and Science
Department of Health and Social Security
Department of Local Government and Regional Planning

**COMPANY
CONFIDENTIAL**

TRAN 005557