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October 5, 1966

cc Papageorge
H.O. Carder - [illegible]
W.C. Dunlap - [illegible]
[illegible] Leisy
[illegible] Miller

Mr. L. C. Fuhrmeister
Technical Services Superintendent
Monsanto Chemical Company
Anniston, Alabama 36202

Dear Mr. Fuhrmeister:

The following is a brief report of our activities in August and September, excluding the information contained in my letter of September 19, 1966:

1) The sample of PNP provided by Monsanto was used in preliminary tests to determine its toxicity to bluegills (Lepomis macrochirus). Specimens measuring 1.5 to 2.0 inches in length were exposed in concentrations up to 1000 ppb at room temperature (72 ± 2 F). All fish survived. PNP in relatively non-toxic compared with insecticides.

2) Previously, we reported tentative 36-hr TL_m values for bluegills to be about 25 ppb for methyl parathion and about 75 ppb for ethyl parathion. Additional tests have confirmed the 25 ppb value for methyl parathion but indicate that the parathion value may be closer to 65 ppb. Although these points may be further refined, I am confident that they are accurate within ± 2.5 ppb.

3) On September 20, we collected 50 mosquitofish (Gambusia affinis) from Choccolocco Creek (4 miles east of Boiling Spring) and subjected them to bioassay. These screening tests indicate 36-hr TL_m values of about 80 ppb for parathion and about 60 ppb for methyl parathion. The accuracy of these estimates will improve when additional specimens are tested.

4) The following is a summary of water, mud, and fish samples analyzed to date:

DATE	COLLECTION SITE	SAMPLE	PESTICIDES (ppb)
8/18/66	Bridge - 4 miles E. Boiling Spring	Water	DDT 0.37 DDE 0.24 Methyl Parathion trace 3 unidentified peaks

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ALL-STATE LEGAL® PLAINTIFF'S EXHIBIT 2A01A

DATE	COLLECTION SITE	SAMPLE	PESTICIDES (ppb)
8/18/1966	Bridge - 4 miles E. Boiling Spring	Fish (Golden Redhorse)	DDT 294 DDE 172 TDE 32
	Interference in first 8.5 minutes of effluent.		
8/18/1966	Anniston Sewage Plant	Water	DDT 0.37 DDE 0.36 Lindane ? 0.07 Methyl Parathion 0.44 3 unidentified peaks
8/18/1966	Bridge - Highway # 21	Water	DDT 0.62 DDE 0.63 TDE 0.15 Heptachlor trace 3 unidentified peaks
8/18/1966	Jackson Shoal	Water	DDT 0.20 DDE 0.31 Lindane trace 4 unidentified peaks
8/18/1966	Jackson Shoal	Mud	DDT and metabolites
	Interference for first 9 minutes of effluent and high background.		
9/19/1966	4 miles E. Boiling Spring	Water (Main Stream)	DDT trace DDE 0.69 TDE trace 4 unidentified peaks
9/19/1966	4 miles E. Boiling Spring	Water (Backwater)	DDT 1.04 DDE 0.71 TDE 0.82 4 unidentified peaks
9/19/1966	Anniston Sewage Plant	Water	DDT 1.05 DDE 0.50 2 unidentified peaks

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DATE	COLLECTION SITE	SAMPLE	PESTICIDES (ppb)
9/19/1966	3 miles SW Coldwater Spring	Water	DDT 1.29 DDE 0.58 TDE 0.50 5 unidentified peaks

The water analyses are based on 700 ml samples. The August samples were extracted with chloroform and the September samples with hexane, which may account for the higher levels of chlorinated hydrocarbons in the September samples. All samples were run on a Dow-11 column (non-polar). Several samples were run on a Q F-1 column (polar) for confirmation. About 4 or 5 unidentified peaks appear in nearly all the samples. The largest of these may be malathion or heptachlor epoxide, for which we do not presently have chromatographic standards. Also, samples from 4 miles East of Boiling Spring contain something that behaves similar to toxaphene. Endrin, aldrin, dieldrin and parathion were absent; heptachlor, lindane, and methyl parathion were present in trace amounts only.

Sincerely yours,

Denzel E. Ferguson
Professor of Zoology

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