Dick: S&A should handle for EPA Reg. Team with NY D.E.C.

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
National Water Quality Laboratory, 6201 Congdon Boulevard
Duluth, Minnesota 55804

SUBJECT: PCB Contamination in the Hudson River

DATE: July 9, 1975

Use Regn Flye on our Tea See bald is Contact in DEC. Je

FROM: Donald I. Mount, Ph.D., Director
NWQL

Richard Fly for copy Chief Water Enforcement Copy of [illegible]

TO: Mr. G. M. Hansler, Regional Administrator
Environmental Protection Agency Region II
New York, NY

Attached you will find a memorandum from Dr. Veith of my staff to me regarding the seriousness of PCB discharges into the Hudson River. Also attached is a rough draft copy of the PCB report stemming from the Lake Michigan Toxic Substances Committee. The purpose of my memo is to convey to you my feeling that there is a very serious PCB problem on the Hudson River because of the relatively large amount of PCBs being discharged into the river. Certainly the measurements to date indicate that the concentrations of PCBs in the river biota are much higher than they are in Lake Michigan. Furthermore, recent work done at the University of Wisconsin at the Medical School indicates that concentrations as low as 2.5 ppm continuously fed in the diet of monkeys resulted in striking skin lesions, baldness and reproductive impairment. This has led the Food & Drug Administration to begin actively enforcing the 5 ppm action level that they have established for fish products and they have also indicated the probability that after review they might even lower the permissible concentration.

We believe that the situation in the Hudson River could develop into one where there is a true health concern for people eating the fish and as Dr. Veith has pointed out in his memorandum, the reason there has not been FDA involvement to date may well be simply because there is not a commercial fishery there or because the fish are not being shipped interstate. That in no way relieves the public health concern for the sports fisherman who might be catching fish from this area of the river and eating them. I personally believe that the PCB problem is going to become much more severe and will result in a great deal of publicity and I think that EPA can "win one" by taking appropriate action in places where there are problems such as on the Hudson River, in advance of the public outcry.

If we can be of assistance to you with this problem, please let us know.

Attachments

cc:
Dr. Gilman Veith, NWQL
Dr. John Buckley, EPA Headquarters

Richard Fly 212-264-9885

Robert Mathews Ex. 8010

PHINIZY

DSW 362269

EPA Form 1320-6 (Rev. 6-72)

STLCOPCB4098190

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
National Water Quality Laboratory, 6201 Congdon Boulevard
Duluth, Minnesota 55804

SUBJECT: A review of the report entitled "Investigations of PCBs in the Hudson River (Hudson Falls-Ft. Edward Area) prepared by the Surveillance and Analysis Division of Region II

DATE: July 7, 1975

FROM: Gilman D. Veith, Ph.D.
Research Chemist, NWQL GV

TO: Dr. Donald I. Mount, Director
NWQL

The preliminary field investigation performed by the Region II staff in the Hudson Falls-Ft. Edward area of the Hudson River has shown that the General Electric facility at Hudson Falls is discharging approximately 17 pounds of PCBs per day and the Ft. Edward facility is discharging approximately 30 pounds of PCBs each day. The PCB mixtures in these discharges are comprised of the PCBs found in Aroclor 1242 or 1016. The report shows that the outfall of the General Electric facility at Ft. Edward contained 2800 ug/l PCBs and that the river and immediate vicinity of the discharge contained 2 - 3 ug/l at several of the sampling sites downstream. Further downstream, the PCB concentration was less than the detection limit of 1 ug/l.

The composite sample of minnows in the "control area" contained about 7 ug/gm PCBs which was a mixture of Aroclor 1254 and 1248. The yellow perch above the dam contained approximately 17 ug/gm total PCBs. In contrast, the minnows collected below the GE discharge contained 78 ug/gm and a rock bass sample collected contained 350 ug/gm quantitated as Aroclor 1242.

This field investigation has revealed the largest source of PCBs into the aquatic environment that I know of. The combined effluents of the GE facilities in this area of the Hudson River are discharging approximately 48 pounds per day of PCBs into the Hudson River. This is in contrast to the estimated total loading of all of the streams in the State of Wisconsin into Lake Michigan at approximately 8 pounds per day, and typical municipal waste treatment plants discharge a few tenths of a pound per day into receiving waters. The 48 pounds per day is about 2.1×10^{10} micrograms of PCBs per day and would therefore be capable of contaminating approximately 10^{13} liters of water each day with PCBs at the level of a recommended water quality criteria of 1 part per trillion.

The mean flow of the Hudson River at the Hudson Falls site is approximately 4500 cfs, which is approximately 10^{10} liters per day. Consequently, if the GE discharges were thoroughly mixed with the Hudson River, one would expect approximately 2 ug/l of the PCBs in the Hudson River in the vicinity below the discharge. The data presented in this report indicate that between 2 and 3 ug/l of PCBs are present in the discharge area. Moreover, the laboratory-determined bioconcentration factors of PCBs in small fish range from approximately $5X10^4$ for mixtures such as Aroclor 1242 to approximately $2.5X10^5$ for Aroclor 1254 and 1260. This report has presented

DSW 362270

STLCOPCB4098191

bioconcentration factors for fish in the Hudson River to be approximately $7.8X10^4$ for the common shiner and $1.2X10^5$ for rock bass. Thus, the field investigation has not only produced water data which is consistent with mass balance considerations, but also is in close agreement with the bioconcentration of PCBs anticipated from laboratory experiments.

It is my opinion that this report has been written in a conservative manner and does not, by itself, adequately describe the significance of the GE discharge into the Hudson River. For example, on page 9, "The highest concentration of Aroclor 1016 is representative of the outfall concentrations more than the ambient river concentrations (less than 1 ug/l). However, the downstream stations are representative of ambient river concentration below 1 ug/l. The fact the detection limit was 1 ug/l in this initial study has made it possible only to identify the areas heavily contaminated with PCBs. Moreover, the river for many miles downstream from the GE discharge could be contaminated with PCB s at levels one hundred times over the 10 ppt tuideline set forth by EPA in 1972 and a thousand times higher than the recommended water quality criteria of 1 ug/l.

The concentrations of Aroclor 1242 of 78 ug/gm in shiner minnows and 350 ug/gm in rock bass show that the fish in the Hudson River are heavily contaminated with PCBs. Even though it would be difficult to show an imminent health hazard to residents in the vicinity of the Hudson River, this GE dishcarge does pose a threat to the use of biological resources in the Hudson River. The Food & Drug Administration has set a tolerance for PCBs of 5 ug/gm in the edible portion of fish. There has been a great deal of concern in the Lake Michigan system because PCBs have reached whole fish concentrations of 15 to 20 ug/gm in the larger fish. Similarly, discharges from Minneapolis have resulted in tissue concentrations of 20 to 50 ug/gm in fish in the Lake Pepin area of the Mississippi River. The FDA has seized 20,000 lbs. of these fish fillets and prevented the sale for human consumption and animal feeds. Moreover, a number of states in the midwest area have recently cautioned the public to limit the intake of fish taken from these contaminated areas because of the potential human health hazard.

The fish below the GE discharge contain two to seven times more PCBs than any of the fish being seized in the Lake Michigan or the Mississippi River system. The fact that there is not an active commercial fishing operation on the Hudson River in the area of the GE discharge should not be cause for the EPA to ignore this contamination.

It is my opinion that the EPA should initiate a more extensive study of the distribution of PCBs in the water and the fish of the Hudson River below the GE discharge. The data presented in this report is certainly a justification for EPA to investigate jointly with GE in bringing about an immediate reduction of the total loading of PCBs to

the Hudson River. I recommend that we encourage Region II to initiate a fish and water sampling program and that the National Water Quality Laboratory offer assistance, if needed, in bringing about a prompt investigation of the contamination of the fish in the Hudson River.

Attachment

DSW 362272

STLCOPCB4098193