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Discussed are various methods of PCB cleanup.

Cost of Taking PCB's From Hudson Soars

By RICHARD SEVERO
Special to The New York Times

FORT EDWARD, N. Y.—New York State has been advised that it will cost $150 million to dredge the toxic chemical compound PCB from a badly contaminated 35.7-mile stretch of the Hudson River between here and Troy.

The cost is vastly higher than anyone had anticipated, and the state, which does not have the funds to cope with it, is now seeking help from Washington.

A year ago, the General Electric Company paid $4 million to settle charges brought by the state that it was the principle source of PCB's—polychlorinated biphenyls—in the Hudson between here and New York City, nearly 200 miles to the south.

At the time of the settlement, which Governor Carey called "an excellent example of ways that industry and the state can work together to solve complex social and environmental problems," environmentalists doubted that the $4 million would be enough to clean up the river. But few realized that the shortfall would be as enormous as it apparently is, even considering that the settlement package also contained a pledge of $3 million in state money.

Of the original $7 million, New York has already spent nearly $2 million on studies to determine how and when the river can be cleaned up. But the scientists who have been studying the damage remain uncertain about what to do and how the cleanup will be financed. The dredging estimate came from the main Hudson River engineering consultant to state's Department of Environmental Conservation, Malcolm Pirnie Inc. of White Plains.

PCB's, which have been linked to cancer in laboratory tests over the last five years, were used by General Electric in making capacitors at two plants, one here and the other at nearby Hudson Falls. Their presence in water is of concern to scientists and public-health officials because they contaminate fish and because it is estimated that they are in the drinking water of 150,000 upstate residents.

The company has stopped using the substance and has constructed a new facility that reportedly eliminates river discharges of any kind from the two plants. Under terms of the settlement, General Electric is relieved of making any further mandatory payments.

General Electric has been issued state and Federal permits to discharge the PCB's into the river. Thus, Prof. Abraham D. Sofaer of the Columbia University Law School, who conducted the hearings that determined the company's role in creating the problem, advised the Natural Resources Defense Council, which represented environmental groups, that further litigation might present problems.

Professor Sofaer felt that there was a good chance the company might be upheld in its contention that, at the very least, the permits suggested that there was join culpability.

Moreover, members of the Carey Administration, most notably Commerce Commissioner John S. Dyson, expressed concern that holding the company to high environmental standards would place it at a competitive disadvantage with companies in other states.

Although neither the state's Department of Enviromental Conservation nor its PCB Settlement Advisory Committee has definitely decided to undertake a major dredging project, there is a feeling among scientists that some dredging will probably be necessary as part of any total effort to remove PCB's from the river.

The reason is that, in the upper Hudson, preliminary evidence indicates that in certain areas PCB's are heavily concentrated in sediments that have gathered in "pools" in the river. If the heavy concentrations are not removed, the PCB's will, in all probability, continue to do what they have already done—wash over the dam at Troy and contaminate the lower Hudson.

Commissioner Peter A. A. Berle of the state's Department of Environmental is seeking Federal help. He has conferred with Eckhard C. Beck, the regional administrator of the Federal Environmental Protection Agency.

"If it is concluded that dredging is the best alternative," Mr. Beck said, "E.P.A. will explore all the means at its disposal for assisting New York State."

Section 115 of the Federal Pollution Control Act authorized $15 million for such problems as those now faced by New York, but some of the money has already beenallocated and Mr. Beck did not refer to it or to any specific amount that the Federal Government might be willing to allocate.

He made it clear that the problem faced by New York was viewed by his agency as part of a national problem, since rivers throughout the country have been contaminated with toxic chemicals.

In New York, the problems of the Hudson River are viewed now with even more apprehension than they were just a year ago.

"We are dealing with a mammoth problem and it keeps getting bigger," said Dr. John Sanders, the chairman of the geology department at Columbia University's Barnard College and the chairman of the PCB Settlement Advisory Committee. The committee was set up last October to advise the Commissioner of Environmental Conservation on the feasibility of any solutions proposed for the river's contamination.

Dr. Sanders said one major unanswered question was what levels of PCB's remained in the river. "We still don't have a good idea of what the total burden is we are supposed to be dealing with," he said.

Scientists tend to feel that something substantive can be done about the upper Hudson—finances permitting—but they are pessimistic that much can be done to remove PCB's from the lower river, between Troy and New York City.

"I can't foresee any remedial action being taken in the lower river, except to let nature take its course," said Dr. Leo J. Hetling, the director of the Bureau of Water Research of the Department of Environmental Conservation.

There is hope that, if enough of the compound is removed above Troy, the PCB's in the river to the south will eventually become buried in the river bottom.

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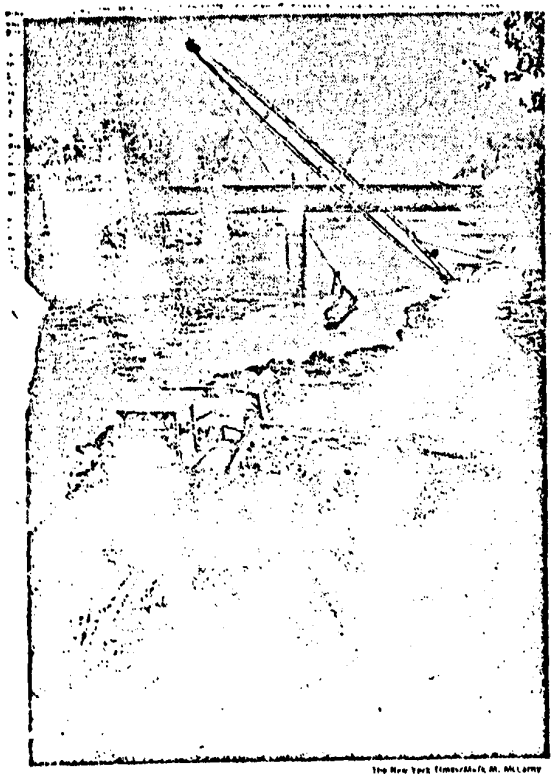
PCB's in the river are a source of concern because about 150,000 people in various upstate communities take their drinking water from the river, and recent studies indicate that the substance is not being removed by water-purification methods now being employed. Most of the people using the river water for drinking live on the lower Hudson, with the biggest concentration at Poughkeepsie.

But the concern is by no means limited to drinking water. Most commercial fishing in the Hudson is banned, but seafood lovers are still getting contaminated with PCB's, since the Hudson is a major spawning area for the entire Northeast Coast fishery. Striped bass tagged in the Hudson, but example, have been found off the Massachusetts coast.



The New York Times/Mark M. McCarthy

Dredging operations continue on channel of Hudson River near Fort Edward

Experiments establishing that PCB's cause cancer have been conducted for more than five years on laboratory animals, including monkeys. High doses of the substance have killed the animals, and liver tumors have occurred in mice and rats.

A $1 million dredging operation is under way at Fort Edward. Although it is removing many pounds of PCB's from the river, its primary aim is to keep the chagnel open. The channel was blocked after a Niagara-Mohawk dam, which had been used to generate electricity, was taken down by General Electric in 1973.

The dredging operation is under the supervision of the state's Department of Transportation, but the department modified its standard dredging operations so that the PCB's, contained in the dark-brown cinder-like substance being removed, could be disposed of safely.

The sediments are being trucked to a "spoil site" in nearby Moreau Township, where an area has been lined with clay to minimize the PCB's leaching out and contaminating ground water or flowing back into the river, a few hundred yards away.

Because of the tremendous expense of dredging even small portions of the river, scientists have examined—and abandoned — other methods of removing PCB's.

For example, there was one theory that PCB's might be removed by the controlled harvesting of contaminated fish. But Dr. Edward G. Horn, a research scientist with the Department of Environmental Conservation, said that if a level of 20 parts per million of PCB's was taken as the average in Hudson River fish, a million pounds of fish would have to be removed just to get 20 pounds of PCB's.

Another study being conducted at General Electric's facility at Schenectady is the use of Pseudomonas, a genus of bacteria that researchers hope can be used to metabolize PCB's. The research is in a very early stage.

Research in Progress

Dr. Dominick Pirone, an assistant professor of biology at Manhattan College and another member of the PCB advisory committee, said he was "excited about the possibilities of a long-term solution" to the problem by financing work such as that being conducted by Dr. Charles Wurster, a researcher in marine science at the State University at Stony Brook.

Dr. Wurster is studying phytoplankton, which is basic to the river's food web. It tends to take in PCB's. Phytoplankton is eaten by small invertebrate animals, which in turn are eaten by larger fish.

Dr. Wurster has not received funds as yet, but Dr. Pirone said he should be given a grant from the settlement funds, so that "we can thus learn the most basic aspects of the dynamics, transport and effects of PCB's on the organisms of the Hudson River."

What is needed, Dr. Pirone said, is "a long-term biological solution, rather than a quick overnight or one-thrust type of engineering solution, which, based on past experience, has often led to a worse catastrophic than the one we were dealing with."