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AN EDITORIAL SERIES

PCBs: The damage done

Clean the Hudson River

One hundred miles north of Poughkeepsie, the Hudson River is a most insidious and extensive pollution problem: the toxic PCBs discharged over three decades by the General Electric Co. Fifteen years after the discharges stopped, thousands of pounds of PCBs remain in the river bottom, a cleanup mired in environmental gridlock.

In balancing the risks of leaving the chemicals in the Hudson against those of taking them out, the Journal will advocate that the gridlock at last be broken — that action be taken to finally and forever remove GE's buried poisons. The editorial, which will run for several Sundays and occasionally afterward, will critique claims that the river is cleaning itself, suggest ways that the process can, and should, be accelerated and address the debate on the serious health effects of PCBs.

In this series of editorials, the Journal analyzes the Hudson River's most insidious and extensive pollution problem: the toxic PCBs discharged over three decades by the General Electric Co. Fifteen years after the discharges stopped, thousands of pounds of PCBs remain in the river bottom, a cleanup mired in environmental gridlock.

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Next Sunday: Is the Hudson River 'curing' PCBs?

less contaminated lower Hudson — making it impossible to ever recover them and assuring they will enter the food chain.

Organisms in the river are slowly changing and, to some extent, degrading the PCBs. But the rate of natural degradation is unknown and a key ingredient to complete the breakdown, oxygen, is usually missing in sediment.

The limits of natural degradation are obvious. Forty-five years after the dumping began and 15 years after it stopped, "Contamination remains severe throughout the 190-mile reach," concluded a recent interim report on fish from the state Department of Environmental Conservation. PCB levels in sediment averaged more than 100 parts per million in several river hot spots tested by GE in 1990, twice the federal definition of hazardous waste.

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Questions answered:

What are PCBs?
Polychlorinated biphenyls are a group of 209 synthetic compounds which vary according to the number and position of chlorine atoms surrounding two connected benzene rings. The higher the chlorine content, the more toxic the compound. Their use was banned in 1977 because of concerns about the environmental and health consequences.

What were they used for?

Two General Electric Company plants used PCBs as insulators in electrical capacitors because they are highly stable and resistant to heat and fire.

What health effects have been linked to PCBs?

Certain PCBs have been shown to cause liver cancer in rats; health studies on people indicate increased skin and other cancers but the results are not considered conclusive. The non-carcinogenic effects of PCBs may be more serious. Researchers have linked PCB exposure to low birth weight, and behavioral and developmental problems in children whose mother ate PCB-contaminated fish.

How do PCBs enter people?

PCBs accumulate in fat and are passed along the food chain from smaller to larger organisms, for example from worms to crayfish to catfish. The higher up on the food chain an organism is, the higher the dose of PCBs. People are exposed mainly through eating fish, but PCBs also fall from the atmosphere and are in water and other foods at very low levels.

Is Hudson River water safe to drink?

Because they accumulate in fat, PCBs are generally a million times more concentrated in fish than in the water in which they live. Hence levels in water are quite low. Even more is removed when the water is treated, making it safe to drink.

How much of the chemical was discharged into the Hudson?

From 1957 to 1975, the federal government estimates that 200,000 to 1.5 million pounds were discharged, among the 15 million pounds purchased by the company in those years. However, use of the chemical extended beyond those years, from 1946 to 1977.

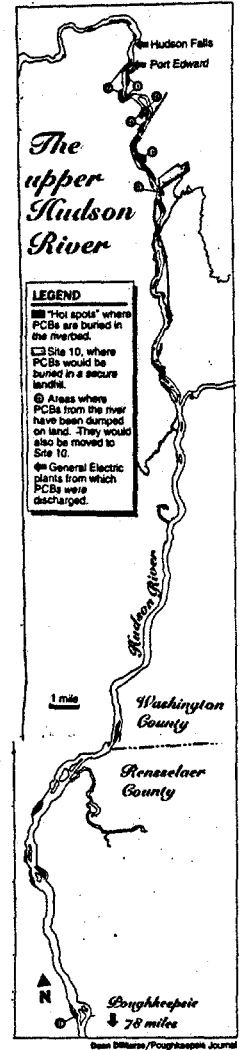
Was it legal?

Discharge of PCBs and many industrial chemicals were regulated under passage of the Water Pollution Control Act in 1972. GE was granted a permit to discharge the PCBs in January 1973. It was a colossal misjudgment in light of a state law prohibiting discharge of toxic waste "in amounts that will be injurious to life, or impair the waters for any best usage."

Can fish from the river be eaten?

The commercial fishing ban on the lower river and recreational ban on the upper river is still in effect. On the lower river, five species should not be eaten: American eel, white perch, carp, goldfish, white catfish and striped bass (except south of the Tappan Zee Bridge, where no more than a meal a month is recommended). There are sharp limits on consumption for 11 other species.

Because of today's special editorial, columnists and letters per: on an expanded page 12A



To comment on this issue, write to Constantine Sidamon-Eristoff, Regional Administrator, U.S. Environmental Protection Agency, 26 Federal Plaza, New York, NY 10278. Send copies to area representatives, whose support of a cleanup is essential.

A tortured history: 45 years of neglect

The following is a chronology of the Hudson River's PCB saga.

1946: General Electric Company begins using polychlorinated biphenyls in capacitors at its Fort Edward plant on the Hudson River.

1952: GE starts using PCBs at its Hudson Falls plant, one-half mile north.

October 1970: Sports Illustrated publishes the first evidence of high PCB levels in Hudson River fish.

December 1972: GE applies for permission to discharge PCBs, newly required under federal law.

July-October 1973: A dam at Fort Edward is removed, allowing tons of PCB-contaminated sediments and lumber waste to wash downstream. PCBs infiltrate the estuary.

January 1975: GE is granted a federal permit to discharge 30 pounds per day of PCBs into the Hudson River.

August-September 1976: State authorities announce that high levels of PCBs have been found in Hudson River fish. Hearings begin alleging that GE has violated state environmental law.

September 1975: Commercial fishing is banned in the lower river; all fishing is banned in the upper river.

September 1976: The state settles with GE, which agrees to cease discharges and pay \$4 million toward rehabilitation of the river. The state puts up \$3 million. The settlement states that GE did no wrong.

July 1978: The state applies to build a hazardous waste landfill on farmland in Washington County, called Site 10, where PCBs removed from the river would be placed.

November 1978: State applies to the federal government for grants to dredge the river.

1980: Congress approves \$20 million to "demonstrate" methods of selective removal of polychlorinated biphenyls contaminating bottom sediments of the Hudson River.

March 1981: The federal EPA approves release of \$1.7 million of the \$20 million to prepare to dredge 20 PCB "hot spots."

April 1982: The state receives approval to build a landfill for the PCBs in Washington County.

December 1982: EPA Administrator

Anne Gorsuch refuses to release the balance of the \$20 million.

July 1983: State approval for the hazardous waste landfill revoked by a court on technical and zoning grounds.

September 1983: The Hudson River is placed on the National Priority List of the worst toxic waste sites in the country, citing GE as "a responsible and liable party."

September 1984: After an 18-month review, the federal EPA announces that "no action" is necessary to remove PCBs for the time being. The state said would be reassessed in five years.

March 1985: A new location, called Site G, is selected for the PCB landfill.

January 1986: Site G is rejected for environmental reasons. State officials reconsider Site 10 in light of a new state law that overrides local zoning.

December 1986: The EPA says it will reassess whether to relocate the Hudson River's PCBs. Expected completion: mid-1994.

Sources: New York State Department of Environmental Conservation, Hudson River Slope Study, Northeastern Environmental Science

