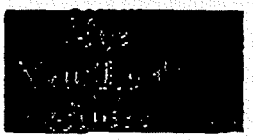
PCB's in Hudson Are Found to Persist and to Enter the Air



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By ANDREW C. REVKIN

New studies by federal and New York state scientists have found that the coating of PCBs on the shores and bottom of the Hudson River is not being cleaned up by natural processes, as some industrial polluters have asserted, and that substantial amounts of these toxic compounds are evaporating from mud flats and wafting in the air.

A separate federal study also found that PCBs -- the river's last major taint -- are showing up in some birds along the Hudson's most contaminated banks in concentrations much higher than have been measured in birds elsewhere -- even around other polluted sites.

For General Electric, the company whose factories dumped the bulk of the PCBs into the river, the new studies constitute a sharp challenge to a long-held position that the Hudson's PCBs are best left buried in the mud, rather than removed through dredging. The company strongly criticized some of the new studies Friday as "unsupported speculation" and said its own studies point to different conclusions.

PCBs, polychlorinated biphenyls, are oily compounds that were used for decades to insulate electrical equipment but are now banned in this country because they may cause cancer in humans and can cause reproductive problems in wildlife. The Hudson River is one of the worst PCB pollution sites in the world, and its bottom was designated a federal Superfund site in 1983.

PCBs along the Hudson have not been directly linked to health problems in humans, although several medical studies are getting under way. But medical problems have been disclosed by studies in the Great Lakes, upstate New York and the Arctic.

The heart of the new findings on the persistent nature of the chemical threat is a three-volume report by the federal Environmental Protection Agency that was released on Wednesday.

The report said that buried deposits of PCBs do not always lie dormant, as GE has maintained. In 1993, for example, the rain-swollen Hoosic River sent a burst of water into the Hudson that scoured the mud and set clouds of PCBs in motion, according to the report.

The agency also rejected another longstanding contention of the company that all the PCBs will eventually break down and lose their chlorine atoms, and thus their potency.

Douglas Tomchuk, the program director for the seven-year-old, $16 million study, said it showed that less than 10 percent of the mass of PCBs is being lost to this "dechlorination" process. The breakdown of PCBs seems to be limited to the "hot spots" where the PCBs are thickest, he said, and is hardly evident where the molecules are widely dispersed.

Ultimately, he said, "Dechlorination is not going to clean the river."

A spokesman for General Electric, David Warshaw, said Friday that the company had compiled a list of dozens of studies showing that dechlorination can solve the problem.

He said the company had spent $45 million since 1989 on stemming the flow of fresh PCBs from the ground under the two now-abandoned factories that were the source of the pollution for 30 years, in Fort Edward and Hudson Falls. He added that GE was planning a new study of the most contaminated stretch of river, the six-mile-long Thompson Island Pool, to examine what it says are weaknesses in the EPA report.

But private environmental groups said they were energized by the EPA findings, which they say support their view that the worst spots need to be dredged if the river is ever to heal itself.

"This study explodes every one of the myths GE has been spreading," said Andre Mele, environmental director for the Hudson River Sloop Clearwater, a private environmental group.

Warshaw of General Electric said, "At the end of the day, GE is going to pay for the remedy -- whatever that might be." But he added, "We owe it to everyone who uses, lives near, and loves the Hudson River to have that remedy based on the most complete understanding of river conditions."

Tomchuk said that the next phase of the EPA study, to be released next winter, will decide what actions should be taken. In the meantime, separate studies were pointing to new problems. A study by the State University School of Public Health in Albany is pointing to the ease with which the compounds apparently rise into the air each time the water level falls and muddy river banks are exposed.

In a recent summary of laboratory studies of wet Hudson River mud, Dr. Sean P. Bushart, who was part of the state study, said that 3 to 4 percent of a sample's PCB content evaporated in a day. If the sample was moistened again, another 3 to 4 percent of the PCBs evaporated.

In the summary, which was published in a newsletter of the Clearwater group in December, Bushart said, "When we next went out to actual Hudson River sites that had exposed sediments and measured PCB concentrations in the air, we found elevated PCB levels similar to those seen in our lab experiments."

The state Health Department has proposed testing whether the airborne PCBs can accumulate in humans by studying tissue levels of PCBs in people living along the most polluted stretches of the river. If people who do not eat fish have elevated PCB concentrations in their tissue, that would show the evaporation is a problem.

Once airborne, the molecules "can travel anywhere in the world," said Dr. Dennis J. Gregor, an environmental chemist at the University of Waterloo in Ontario, Canada, who has been tracking PCB levels in Arctic snow.

And most disturbing to environmental scientists is a federal Fish and Wildlife Service study that shows levels of PCBs in tree swallows along the river higher than any measured in any other birds so far. The swallows also show some signs of reproductive problems, said Anne Secord, the federal wildlife biologist who was a co-author of the study. The findings have been reviewed by a variety of biologists and are to be released in two weeks.

Swallows are heavily exposed to PCBs because they tend to eat flying insects that first develop in the river-bottom mud. Other studies of swallows near contaminated sites along the St. Lawrence River and Green Bay, Wis., disclosed significant amounts of PCBs in eggs and nestlings, Ms. Secord said.

But when she and Dr. John McCarty, an ecologist, studied nests along a stretch of the Hudson extending 27 miles south of Fort Edwards, they found levels in eggs and baby birds that were many times higher than the levels detected elsewhere. The highest concentration of PCBs detected in swallow eggs until the Hudson study was 4 parts per million, she said. Around Fort Edwards, she said, the tested eggs averaged 42 parts per million.

The birds also showed some signs of abnormal feather development and an increased tendency to abandon nests, she said, although she stressed that more work needs to be done to be sure that PCBs were a cause.

She said her greatest concern arose from the fact that swallows, overall, appear to be strongly resistant to the effects of PCBs. So far, no studies have been done on terns, herons or kingfishers, which are probably more vulnerable to the chemicals.

Ms. Secord said she was preparing to conduct a study, along with biologists from the state Department of Environmental Conservation, to see whether a similar problem could explain the persistent failure of the Hudson's nesting pairs of bald eagles to breed, while eagles elsewhere in the state and nearby regions are breeding successfully.

On Thursday, state biologists tried unsuccessfully to lure an eagle into a trap by planting bait on the ice north of Albany. They say they hope to try again if a cold snap hardens the river's thin coat of ice.



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