

## **Poisonous mercury oozing out of old gas fields**

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Lee Fulton went prospecting for quicksilver one dark, rainy day last January in a bottomland forest along north Louisiana's Ouachita River.

"I turned a shovel of dirt and something liquid and silver shot out," he said. "I took the cap off of a bottle and started scooping up mercury, almost pure mercury."

Fulton was anything but elated. That's because he's the manager of the Upper Ouachita and D'Arbonne national wildlife refuges near Monroe, and the mercury may be one of several sources of widespread contamination of fish and wildlife in the refuges.

The mercury was found beneath meters that measure the flow of natural gas from some of the 500 production wells on the site. The meters use about 6.5 pounds of mercury each. Industry and environmental officials speculate the contamination resulted from poor housekeeping or vandalism.

The Monroe gas field has about 8,000 such meters, most containing mercury. Some meter sites date back to the field's discovery in 1916.

Louisiana has between 20,000 and 50,000 such meters. There are untold thousands of them nationwide and, until last year, no one really knew they might pose a pollution threat. State health officials last year issued warnings to residents of Louisiana and Arkansas in the areas around the Ouachita to drastically limit their consumption of fish from the river.

Unfortunately, the wildlife can't read those warnings. Recent sampling by U.S. Fish and Wildlife Service agents have shown high levels of mercury in raccoons and great blue herons. The warnings apparently came too late or were ignored by residents of southeastern Arkansas, where health officials have found alarming levels of mercury in some people's blood. No such tests have been conducted on Louisiana residents.

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Fulton and other federal and state officials acknowledge the mercury found beneath the meters is likely to be only a small part of the contamination. But Fish and Wildlife has requested studies that could result in closing large parts of the refuge to the public while the mercury is cleaned up. State officials have launched their own investigation. Still, scientists believe most of the contamination of the Ouachita River is the result of airborne mercury from waste incinerators and power plants that could be hundreds of miles away.

Mercury contamination is becoming one of the nation's fastest growing environmental problems. It already is the cause of 80 percent of all advisories concerning contaminated fish in the nation, the Environmental Protection Agency says.

According to Clean Water Action, a Washington, D.C.-based group, between 540,000 and 1 million pounds of mercury were released into the air in 1991.

Of that amount, about 300,000 pounds came from coal-fired electric power plants and municipal incinerators. Other sources include latex paint, the burning of some other fuels, incineration of medical and industrial wastes, chlorine manufacturing and broken fluorescent lamps.

When rain washes it to earth, mercury contaminates water and soil. The liquid metal also is released into water by a number of industries and publicly owned sewage treatment plants. Key contributors of mercury to sewage treatment plants are dentists, who use mercury amalgam for fillings.

On the ground and in water, mercury is attacked by bacteria that form a compound called methyl mercury. It's absorbed by tiny plants and animals known as plankton. They, in turn, are eaten by insect larvae and small fish, which then are eaten by larger fish.

At each step in this food chain, greater amounts of mercury become concentrated because it isn't automatically removed from fish or animals - including humans - by waste excretion. Mercury contamination in humans can damage the central nervous system, especially in fetuses and young children. It can impair hearing and speech and cause kidney damage. It also has been linked to the development of cerebral palsy, birth defects and mental retardation.

The Food and Drug Administration "action level" for mercury - the level at which the agency urges states to issue advisories restricting consumption - is 1 part per million in the edible parts of fish, shellfish, crustaceans and other aquatic organisms.

In Louisiana, mercury contamination first showed up in a nationwide study of chemical residues in fish in 1987, state Department of Environmental Quality spokeswoman Barbara Romanowski said.

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Follow-up sampling in 1990 showed rates ranging from 1.29 parts per million in largemouth bass to .61 parts per million in channel catfish. Additional sampling in 1992 showed contamination as high as 4.04 parts per million in bass just south of the Arkansas border.

After reading the state reports, Fulton and other federal officials decided to test wildlife on the refuges.

"The more we dug into it, the more we found," he said. "It's not just in fish. It's in anything that eats fish: raccoons, great blue herons and other fish-eating birds."

The most recent tests showed high mercury levels in raccoons and herons. For the raccoons, it was as high as 2.64 parts per million in meat, 26.49 parts in livers and 15.86 parts in fur. For the herons, mercury was found as high as 3.43 parts per million in meat, 109.57 parts in livers and 33.75 parts in feathers.

The Louisiana Department of Health and Hospitals issued its first mercury advisory in August 1992, urging people to severely restrict fish consumption in four parishes - Ouachita, Union, Morehouse and Caldwell - along a 102-mile stretch of the river from the Arkansas line to Columbia, La.

The advisory is still in effect. Jennifer Goodwin, a health department spokeswoman, said it will be re-evaluated as more information is collected.

Arkansas officials have found similar mercury levels in fish and high levels in otters, another fish-eating mammal. Health officials also have found mercury in the blood of 236 people. "We didn't find anyone with levels that were immediately dangerous, life-threatening conditions," Arkansas Department of Health spokesman Stan Evans said.

But the levels are of concern because of potential health problems caused by chronic exposure to mercury, he said.

Evans said 15 percent of those sampled had levels above 20 parts per billion, and state officials have recommended they immediately stop eating fish from the area for at least 60 days. Arkansas' advisories have expanded five times and now cover the Ouachita and most lakes, ponds and streams in the southeastern part of the state.

Arkansas environmental officials have been searching for the sources of mercury contamination in the area for several years - with little luck.

"We know we have some air sources in the state that do discharge mercury, but they're probably not near enough to cause this type of problem," spokesman John Giese said.

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Meanwhile, independent natural gas producers, prodded by questions from Fulton and DEQ officials, are surveying the meters in the Monroe field and vacuuming up any visible mercury as soil samples are taken, said Hugh McDonald, an engineer hired by the independents to advise them on mercury contamination.

He said about 20 pounds of mercury have been collected in the past five months. He said he doesn't believe the river pollution and the mercury beneath the meters are related.

Mike Lyons - a spokesman for the Mid-Continent Oil and Gas Association, which represents major oil and gas production companies in Louisiana - said member companies have volunteered to determine how many mercury meters are in the field and to find out if mercury is under them. But Theodore Kinne, a vice president for environment and safety for Interstate Natural Gas Association of America, said the EPA has given the pipeline industry variances for the past two years allowing delays in cleaning up mercury contamination along transportation pipelines because of a lack of places to dispose of contaminated soil.

Since mercury is liquid, its disposal in landfills is frowned upon under federal hazardous waste regulations. And only two companies are able to remove it from soil and recycle it, Kinne said. Meanwhile, the Fish and Wildlife Service has formally notified the National Response Center of the contamination on the refuges - the first step toward a cleanup under the federal Superfund law.

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#ART:

Sampling project area for  
mercury contamination

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STAFF MAP

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CAPTION:

Mercury contamination is visible on a pipe near the Upper  
Ouachita National Wildlife Refuge. [COLOR]  
PHOTO BY WILLIAM FONTENOT