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Months after ash spill, Tennessee town still choking

- Story Highlights
- On December 22, town was buried in coal ash spilled from power plant
- Spill released potentially cancer-causing chemicals, radioactive materials
- Some residents report new health problems since the disaster
- Reports by EPA, plant operator say air, water, general environment are safe

By Stephanie Smith
CNN Medical Producer

HARRIMAN, Tennessee (CNN) -- Pamela Hampton stands at the kitchen sink, her gaze trained out of the window of her family's small hillside home. The disaster site is not visible from where she stands, but she knows it is there, down the hill, around a short stretch of highway, less than a mile away.

Six months after the largest industrial spill in U.S. history, Hampton, her husband, Charles, and their three young children say they still do not feel comfortable going outside.

"Everything here is changed," Hampton said, her eyes glistening. "[The landscape] reminds me of what you see on the moon. It breaks my heart."

A few hours before dawn on December 22, the walls of a dam holding back billions of gallons of coal ash waste trembled and, finally, crumbled. The waste, a toxic soup containing ash left over from burning coal, which is then mixed with water, was stored at the [Tennessee Valley Authority](#) coal power plant in neighboring Kingston, Tennessee.

On that cold morning, 1.1 billion gallons of coal ash sludge barreled through this community, covering 300 acres.

Sarah McCain, who lives about a mile from the spill site, awoke to a community in shambles: homes and trees uprooted and a once-lush, green landscape turned to sludge.

"It makes you want to cry, knowing what has been lost," McCain said. "I want my life back."

Residents are afraid of the chemicals that were released into the environment: arsenic, selenium, lead and radioactive materials including chromium and barium.

"It's like dumping the periodic table into everyone's drinking water," said Anna George, a scientist with the Tennessee Aquarium Research Institute who has for months been testing the waters and fish near the spill site. [Watch more from Dr. Sanjay Gupta's investigation »](#)

The TVA says contact with wet coal fly ash does not present a serious health risk, though direct skin contact may cause localized irritation. In a statement on its Web site the authority says: "Testing of the Kingston ash samples shows that concentrations of metals are well below the limits for classification as a hazardous waste." It also says there's been rigorous testing of public drinking water supplies, private wells, river water - and all have met safety standards.

But the mounds of dark, viscous coal ash are sapping the spirit of this community.

"I walked outside [after the spill] and said, 'Where did the lakes go?' " McCain said. The lakes, she added, had been the heart of this once-beautiful community. "The mental agony alone is enough to put people here over the edge."

McCain is a founding member of a support group formed in the wake of the spill, the [Tennessee Coal Ash Survivors Network](#). She says that

many here feel trapped, scared and -- worse -- ignored by the TVA and the government agencies meant to protect them.


"We don't know what to do or where to turn," McCain said. "It's pulling families apart because you don't know, 'Is it safe for me to stay here?' And for those who have children, 'Am I poisoning my kids?' "

The TVA and the [Environmental Protection Agency](#) have released reports indicating that the air, water and general environment here are safe. They say the levels of toxic chemicals found in coal ash do not exceed federal standards. As of mid-May, the TVA said it had taken 44,000 air samples; none had indicated health concerns.

In fact, coal ash is not considered by the EPA to be a hazardous material. Designation as hazardous material would make coal ash waste -- and its storage -- subject to more stringent federal regulation.

"Over time, EPA's regulations have treated it as a solid waste, equivalent to household garbage, but not as a hazardous waste," EPA Administrator Lisa Jackson said. "We know that there are potentially high levels of metals in that ash."

Jackson has promised that the EPA will revisit the potential hazards of breathing in coal ash.

"We've promised that we will address regulation for coal ash by the end of the year," Jackson said. "And so, by the end of the year, we'll make that regulatory determination as to whether or not it's hazardous." 

Whatever the official reports say, the Hamptons believe that the air outside their home could be toxic to their children. Pamela Hampton says she first noticed that her children were having health problems only days after the spill.

First, 11-year-old Monica started complaining about headaches. Then, all three children -- Monica, 6-year-old Noah and 3-year-old Joshua -- began to experience upper-respiratory problems, fevers, ear infections, runny noses and red eyes.

"You're taking your child to the doctor yet again, or two children, and then in a week, the next child is sick," Hampton said. "After about the third or fourth time, that's when I started realizing that this is not a coincidence. It's like being sucker-punched."

Noah Hampton's ear infections were so persistent, his ears so inflamed, Pamela Hampton says, the family's doctor said it looked like he had growths in his ears resembling small grapes.

The doctors' visits over the past six months have been frequent, expensive and inconclusive.

"We're stuck. We're stuck. For however long, we don't know," Pamela Hampton said. "And what's going to happen with the future symptoms? Is this stuff going to cause permanent DNA damage to our children? Death? Cancer?"

Two miles away from the Hamptons, Pam Phillips is also feeling trapped.

For the past nine years, Phillips has suffered from debilitating seizures, the cause of which her doctors could never quite pinpoint. What seems to trigger them, she says, is stress and fatigue.

For years before the spill, Phillips says, her seizures were under control, striking once every two or three months. After the December deluge, her seizures started to get worse and come more frequently.

"Now I have them every other day," Phillips said, adding that increasingly, she awakens from seizures in more and more perilous situations. "I've passed out on the ground and hurt my shoulder, fell down the steps in the basement."

Phillips believes that her stress and anger about the spill and her family's health are triggering the seizures. Phillips says that since the spill, her 9-year-old son, Steven, has had a relapse of chronic bronchitis he had not experienced in several years. Other family members, including Phillips' husband and daughter, complain about headaches, problems breathing and nosebleeds.

Like Hampton and McCain, Phillips says the TVA has failed to respond to community concerns.

The TVA has said that it will set up clinics to test community members' blood for potential toxics. McCain says those clinics have been promised for months.

"We recognize that people may have difficulty trusting TVA since we were the ones who caused the -- we didn't cause it -- we were the ones who experienced this spill," said Anda Ray, senior vice president of the TVA's Office of Environment and Research. "We are committed to a long-term cleanup of this area because the environment was impacted. There's habitat that's no longer there, and we will work with that." The TVA has begun dredging the Emory River and by mid-May had purchased about 100 affected properties.

But locals say they want more than cleanup. They want answers about their health problems.

"TVA is denying health issues, yet they tell us 'don't breathe it, don't touch it, don't let kids near it,' " McCain said. "I know darn well that stuff's hazardous, and you know what, they know it too," McCain said.

In the immediate aftermath of the spill, a Duke University study concluded that toxic elements in the coal ash could be suspended into the atmosphere, posing a health risk to local communities. The study also concluded that the coal ash caused contamination in surface waters

and that accumulation of toxic contaminants in river sediment could poison fish.

Anna George and colleagues have found high levels of potential toxics, including arsenic and selenium, in the tissues of fish still swimming amid the coal ash in the Tennessee, Clinch and Emory rivers.

George calls fish a "canary in a coal mine" when it comes to forecasting eventual human health problems. An issue among the fish, which could have implications for humans, is breathing problems.

"We've seen some fish where the gills were completely coated in [coal ash] sediment," George said. "Fish absorb oxygen right across their gills the same way we absorb oxygen right across our lungs."

In a community desperate for answers, it turns out that science offers very few, at least about long-term health impact of breathing in contaminants.

Studies show that ingesting arsenic, an ingredient in the coal ash that spilled from the TVA site, at certain levels could cause cancer. In fact, a [study](#) released by environmental groups and universities in May found levels of arsenic 260 times the federal drinking water standard -- and lead levels at least 16 times the drinking water standard.

There was also a higher than normal level of selenium which in high doses could cause neurological problems; the International Agency for Research on Cancer describes it as a "probable human carcinogen."

George says that although the risk to fish and wildlife in the area is becoming clearer, the impact on humans may take decades to sort out.

And many other communities may find out as well: an [EPA report](#) last month identified 44 more sites like the TVA's that pose a "high hazard" to nearby communities if they leak or fail.

The Hamptons, the Phillipses and the McCoins have no choice but to stay here. All three families are participants in lawsuits filed against the TVA so that they can be compensated -- so that they may have the funds to leave the area.


"We're like a leper colony that's been lost," McCoin said.

"People think they're going to die before they'll see results," Hampton said.

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