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CINCINNATI -- As a West Virginia chemical spill reached Cincinnati on the Ohio River Wednesday morning, utilities and environmental analysts from around the country turned to local water experts to find out how to test for and measure the little-known and little-understood compound.

Cincinnati and Northern Kentucky water intake valves remained closed Thursday morning as hourly testing continued to show low levels of Crude MCHM, or mostly 4-Methylcyclohexanemethanol (<http://www.wvgazette.com/News/201401100078>), which cleans impurities like sulfur and other pollutants from coal.

City officials stressed that levels detected here remained far lower than the Center for Disease Control's "safe" limit, which was set after the spill at Charleston, W. Va., about 200 miles from Cincinnati.

Those monitoring the slow flow of the chemical along the Ohio estimate it could take up to another 24 hours to clear the region.

"Our goal is not to open until we don't have any detections," said Jeff Swertfeger, [Cincinnati Water Works \(http://www.cincinnati-oh.gov/water/\)](http://www.cincinnati-oh.gov/water/) assistant superintendent of Water Quality and Treatment.

Testing For Crude MCHM

Being able to test for and measure the chemical in the water proved to be the first challenge for health and utilities officials in the areas exposed to it, Swertfeger said.

No water testing methods existed for the Crude MCHM, which can be classified as either "moderately" or "slightly" toxic, according to different government agencies.

"We realized there wasn't something readily available," said Swertfeger, who spent his weekend in the lab with a chemist working with small samples of highly concentrated Crude MCHM.

Working in tandem with partner utilities along the spill's route, Swertfeger and his team modified existing water testing methods to get more and more accurate measurements.

Now utilities and labs in Kentucky, Indiana and beyond are contacting Cincinnati to learn about their methods so that they can replicate and refine them further.

Those refinements allow scientists to measure the levels of the chemical more quickly and accurately, Swertfeger said. But they also make it difficult to compare current measures with those taken further upriver, closer to the spill itself, when testing was not as accurate.

Measures of Crude MCHM in Cincinnati ranged from .01 to .03 particles of chemical per million particles of water, well below the CDC's limit of 1 particle per million.

Taking Extra Precautions

Once officials no longer detect any of the chemical near Cincinnati's Ohio River water intakes, which sit near the California Nature Preserve east of downtown, they will still take extra precautions to ensure no Crude MCHM enters the city's water supply.

Like other utilities upriver, Water Works will add powdered activated carbon to the raw river water to absorb any potential toxic compounds left in the water.

"We've done some testing and we've seen the powdered activated carbon is very effective" on Crude MCHM, Swertfeger said.

He noted that other water systems upriver "don't have the luxury" of shutting off intake valves, yet their use of carbon treatments have kept chemical levels in the "safe" range.

While the powdered activated carbon is an additional step for Cincinnati Water Works, Swertfeger said that they regularly use granular activated carbon to protect the city's water from toxic spills that never make headlines because they are never discovered.

"We make sure we are taking precautions," he said.

Two "good things" about the Crude MCHM spill, according to Swertfeger? First, the new methods developed may allow for faster and more accurate water testing in the future; second, public concerns may lead to increased inspections of chemicals used all around us.

"We need to be sure we are protecting the environment from these chemicals," he said.

Water facts:

- Most of Cincinnati's water supply, roughly 88 percent, comes from the Ohio River and is treated at the Richard Miller Treatment Plant on Kellogg Avenue.
- The rest of the city's water supply, about 12 percent, comes from a groundwater treatment facility in Fairfield.

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