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Key CDC test focused on different form of chemical

by **Ken Ward Jr.**
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CHARLESTON, W.Va. -- A key corporate study used by federal health officials to set a screening level for "Crude MCHM" in the West Virginia American Water system actually tested a pure form of the material's main ingredient, and may not account for potential toxicity of other components, documents and interviews with public health officials showed this morning.

"That is a huge problem," said Dr. Lynn Goldman, dean of the School of Public Health and Health Services at George Washington University.

U.S. Centers for Disease Control officials did not disclose the issue when they discussed their 1 part-per-million screening level and have not responded this morning to requests for comment.

The issue, revealed when Eastman Chemical Co. made public its previously secret studies of the chemical it made and sold to Freedom Industries, raises more questions following last week's toxic spill that fouled drinking water for more than 300,000 West Virginians.

Gov. Earl Ray Tomblin and other state officials, along with West Virginia American Water have been assuring residents -- except for pregnant women -- that it's safe to use Elk River water, once the water company clears their particular neighborhood and home plumbing systems

Tomblin and his top public health officials have cited the screening number developed on an emergency basis by scientists at the CDC, who were working without any existing regulatory standards or published health guidance and dealing with very little data about the chemical.

The CDC's number was based largely on an April 1990 Eastman study in which rats were exposed to varying levels of 4-methylcyclohexanemethanol. The study concluded that a concentration of 100 milligrams per kilogram of the chemical was the "No Observable Adverse Effects Level, or NOAEL," for the material.

CDC scientists used relatively standard risk assessment procedures to translate that figure into a level of 1 part per million of the chemical that they said would likely cause no adverse health effects.

But, emergency response and public health officials, and company documents have said that the chemical that actually spilled into the Elk River was "Crude MCHM."

An Eastman "material safety data sheet," or MSDS, for that chemical shows that 4-methylcyclohexanemethanol makes up 68 percent to 89 percent of Crude MCHM.

But the MSDS also shows that Crude MCHM includes six other ingredients: 4-(methoxymethyl)cyclohexanemethanol, water, methyl 4-methylcyclohexanecarboxylate, dimethyl 1,4-cyclohexanedicarboxylate, methanol, and 1,4-cyclohexanedimethanol.

Evan Hansen, an environmental consultant with the Morgantown firm Downstream Strategies, has been wondering for several days about whether the health studies and water sampling efforts included the other constituents of Crude

MCHM.

Posting his thoughts on Twitter, Hansen said that the distinction between the two substances is important. "Are water tests in area being done for all constituents of Crude MCHM or just for 4-MCHM," Hansen posted.

Writing on his group's blog Thursday night, Environmental Defense Fund biochemist Richard Denison said that knowing that the Eastman study focused on a different chemical than was spilled "adds some additional uncertainty."

"If other components besides MCHM present in the crude mixture are more or less toxic than MCHM, the mixture's toxicity would differ from that found for the pure material," Denison wrote.

Goldman, who was assistant administrator for toxic substances in the Clinton administration's Environmental Protection Agency, agreed that the difference between the pure 4-MCHM and the "technical grade" of Crude MCHM are important.

"What is the actual concentration of the pure chemical in the technical grade, and then what are the other things in the technical grade and are they in the technical grade in high enough concentrations to be a concern," Goldman said in an interview this morning. "Question mark, question mark, question mark."

Goldman, who dealt with major chemical incidents when she worked for the California Department of Public Health, said that West Virginia officials and the CDC had a difficult task coming up with a plan for a public water supply contaminated by a chemical for which there are few health studies and about which so little is known.

"I think it's putting too much on people," Goldman said. "What they have is not enough data to establish a drinking water standard. I can appreciate why they went down that road, but you can have a database that is too fragile for doing that."

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