



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
WASHINGTON, D.C. 20460

NOV 14 2014

OFFICE OF WATER

The Honorable Fred Upton  
Chairman, Committee on Energy and Commerce  
House of Representatives  
Washington, D.C. 20515-6115

Dear Mr. Chairman:

Thank you for your October 1, 2014, letter to the U.S. Environmental Protection Agency regarding the agency's efforts to address harmful algal blooms in drinking water supplies in light of the recent incident in Toledo, Ohio. Enclosed are responses to the specific questions included in your letter.

As this summer's Toledo incident highlights, harmful algal blooms have become a serious and increasing problem that can affect all 50 states. Toledo and the surrounding communities on western Lake Erie remain especially vulnerable to emergency shutdowns from harmful algal blooms, and coordinated federal, state and local actions must continue to protect the nation's waters and precious drinking water supplies. Developing a drinking water health advisory for microcystin-LR will help provide additional information to the public regarding safe levels of this harmful toxin and will help set the stage for additional actions to protect the public from harmful algal blooms.

Again, thank you for your letter. If you have further questions, please contact me or your staff may contact Cathy Davis in the EPA's Office of Congressional and Intergovernmental Relations at Davis.CatherineM@epa.gov or (202) 564-2703.

Sincerely,

A handwritten signature in black ink that reads "Kenneth J. Kopocis".

Kenneth J. Kopocis  
Deputy Assistant Administrator

Enclosure

**Responses to Specific Questions in October 1, 2014, Letter  
From Chairman Upton, Congressman Shimkus and Congressman Latta**

- 1. What types of information will the advisory include, and what will be the level of detail? What should states, municipalities, and residents anticipate gaining from this advisory?**

The EPA expects the health advisory for microcystin-LR will provide information on the environmental properties, health effects, analytical methods and treatment technologies for unregulated drinking water contaminants. Health advisories establish non-regulatory concentrations of drinking water contaminants at which adverse health effects are not anticipated to occur over specific exposure durations (one day, ten days, several years, and a lifetime), when information is available. States, municipalities and other local officials may use the health advisory as informal technical guidance for protecting public health or for the development of their own guidance.

- 2. What is the threshold level of exposure from a public drinking water system at which Microcystin, and its variant Microcystin-LR, poses a risk to human health? Is there a scientific consensus on the threshold human exposure for Microcystin generally, or Microcystin-LR?**

The agency is currently conducting an independent peer review of the draft health advisory for microcystin-LR, and it would be premature to speculate regarding the specific levels that will be included in the health advisory until this process is complete. Depending upon the results of our peer review, we plan to communicate that threshold as part of our health advisory. In addition, we continue to review available literature and consult with scientific experts as part of our advisory development process.

Regarding existing sources of scientific information concerning microcystin-LR, in 1998 the World Health Organization released a provisional guideline of 1 µg/L for microcystin-LR in drinking water. The guideline is provisional due to the lack of toxicological data to derive a guideline value for the other 80 variants of microcystin. Additional studies of microcystin have been completed since the WHO guideline was released, and this information is being evaluated as part of our health assessment.

- 3. Will EPA recommend techniques to treat the water to the specified health advisory level or to a level within a certain range?**

The EPA currently provides information on the treatment practices that water systems can utilize to reduce the levels of cyanotoxins in drinking water in an EPA published document titled *Cyanotoxin/Cyanobacteria Factsheet for Drinking Water Systems*.<sup>1</sup> We expect that the health advisory will also identify available treatment techniques and analytical methods for detecting cyanotoxins. This information will enable water systems and state officials to determine steps to take in response to the presence of toxins in their drinking water supply.

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<sup>1</sup> This document is available at [http://water.epa.gov/scitech/swguidance/standards/criteria/nutrients/upload/cyanobacteria\\_factsheet.pdf](http://water.epa.gov/scitech/swguidance/standards/criteria/nutrients/upload/cyanobacteria_factsheet.pdf).

4. **We understand that ELISA, a testing method many municipalities use, is a screening tool that tests only for Microcystin in general, while the LC-MS/MS testing method is a more robust, higher-cost method that tests for specific variants such as Microcystin-LR.**
- **Will the EPA advisory recommend using LC-MS/MS testing? If so, what challenges will states and municipalities face in accessing and effectively using LC-MS/MS technology? Are there more cost-effective tests that offer comparable efficiency to LC-MS/MS?**
  - **What is the current process for an entity to become U.S. EPA certified in LC-MS/MS testing?**

We anticipate that the health advisory will identify LC-MS/MS as one of multiple analytical techniques to consider to support microcystin monitoring needs. Some states and water systems may benefit from the greater sensitivity and selectivity associated with the LC-MS/MS approach. We are not aware of alternative, cost-effective tests that offer comparable sensitivity for trace concentrations and selectivity for individual microcystin variants/congeners.

Some of the challenges states and water systems might face with LC-MS/MS include greater cost relative to screening when procuring commercial laboratory support and more significant upfront capital investment, as well as hiring/training investment to develop proficient laboratory analysts. The LC-MS/MS method also requires more time to complete the analysis of samples than the ELISA method that is currently in use by many states and drinking water utilities. We anticipate that the health advisory may recommend that states and drinking water systems utilize a combination of screening methods and the more specific LC-MS/MS method to support analysis of algal toxin samples. We do not expect commercial laboratory capacity to be a particular challenge at this time with respect to LC-MS/MS testing. The agency is prepared to provide ongoing technical support to those laboratories investing in LC-MS/MS, consistent with the agency's support for laboratories implementing other drinking water methods.

The EPA establishes laboratory certification/approval requirements for specific methods when they are associated with monitoring mandated by federal regulation (i.e., when the method has been specified to demonstrate compliance with EPA regulated contaminants or to support analyses under the Unregulated Contaminant Monitoring Rule). If microcystins are included in a future Unregulated Contaminant Monitoring Rule (UCMR) cycle, and the LC-MS/MS is specified as an appropriate analytical technique, then the agency would evaluate and approve laboratories seeking to analyze UCMR samples for microcystins using LC-MS/MS. Prior to that time, some states may choose to incorporate LC-MS/MS method approval into their existing laboratory certification programs.

5. **EPA has indicated that algal toxins will be included in the agency's upcoming UCMR, which is due to be proposed in 2016 and finished in 2018. At this point, does EPA expect Microcystin-LR to be on that list and what would preclude it from being listed sooner?**

Cyanotoxins, including microcystins, represent very strong candidates for the next round of UCMR. Among the microcystin congeners, microcystin-LR is of particular interest and is specifically identified as a priority by its inclusion on the EPA's drinking water Contaminant Candidate List (CCL). Though the agency cannot say with certainty at this time, there is a high likelihood that it will be included in the proposed rule for UCMR 4.

Under the Safe Drinking Water Act, the EPA is limited to including no more than 30 contaminants in each UCMR monitoring cycle. The agency took full advantage of that authority by including 30 contaminants in UCMR 3, but cyanotoxins are not included in that list. Therefore, UCMR 4 represents the next opportunity to consider microcystins. We anticipate that we will publish a proposed UCMR 4 in 2015 and a final UCMR 4 in late 2016. Monitoring for UCMR 4 would begin January 2018 and conclude by December 2020. In the interim, we will continue to work with the states and other federal agencies to characterize the prevalence and concentration of cyanotoxins in the source water for the nation's drinking water supplies.