



# Public Water System Harmful Algal Blooms – Overview of Upcoming Rules

## What are Harmful Algal Blooms?

Harmful Algal Blooms (HABs) are large growths of cyanobacteria (also referred to as blue-green algae) that can produce a variety of harmful chemicals known as cyanotoxins which can cause illness and death in humans and animals. These cyanotoxins include liver toxins, nerve toxins and skin toxins.

The United States Environmental Protection Agency (U.S. EPA) recently issued national health advisory levels for two cyanotoxins: microcystins and cylindrospermopsin. The health advisory values are based on oral ingestion of drinking water at these levels for up to 10 days.

Cyanotoxin	10-day health advisory level	
	Bottle-fed infants and pre-school children	School-age children and adults
microcystins	0.3 µg/L	1.6 µg/L
cylindrospermopsin	0.7 µg/L	3 µg/L

## What will the HAB rules require?

The new rules in Chapter 3745-90 (Harmful Algal Blooms) of the Administrative Code and amended rules in Chapter 3745-89 (laboratory certification) will:

- I. Establish microcystins action levels in drinking water based on U.S. EPA’s health advisory levels.**
- II. Establish monitoring requirements for public water systems using surface water including:**
  1. Routine biweekly cyanobacteria screening.
  2. Routine weekly source and finished water monitoring for microcystins from May 1 to October 31.
  3. Routine biweekly source water monitoring for microcystins November 1 through April 30 (microcystins detections will trigger increased monitoring).
  4. Increased monitoring based on detections of microcystins above 5 µg/L in the raw water (three days a week) or detection of microcystins in finished water (daily monitoring).
  5. Increased monitoring if an action level is exceeded in finished water:
    - a. Resample within 24 hours of receiving the results of the initial action level exceedance;
    - b. Repeat within 24 hours of receiving the resample results;
    - c. If a resample or repeat sample exceeds the action level, notify any consecutive (purchased) water systems and collect distribution samples.
  6. Opportunity for decreased screening and monitoring schedule, depending on results.
- III. Establish treatment technique requirements:**
  1. If microcystins are detected in raw or finished drinking water, the water system will be required to develop and submit written cyanotoxin treatment optimization protocols.
  2. If microcystins exceed 1.6 µg/L in raw water on two or more occasions within a 12-month period or are detected in finished drinking water, the water system will be required to submit and implement an approved cyanotoxin general plan with one or a combination of source water protection activities, reservoir management and in-plant treatment technologies. In some instances, the general plan may document existing treatment is sufficient for cyanotoxin destruction or removal.
- IV. Require public notification for monitoring or reporting violations, treatment technique violations and exceedance of action levels in repeat samples of finished water; require action level exceedances to be included in consumer confidence reports.**
- V. Establish recordkeeping requirements.**
- VI. Establish requirements for laboratory certification, analytical techniques and reporting deadlines.**

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## Who will be affected by these rules?

These rules apply to all public water systems and certified laboratories, as follows:

### Surface water systems

All of the above requirements apply to water systems which use surface water as a source.

### Consecutive (purchased) water systems

The routine monitoring and treatment technique requirements do not apply to consecutive water systems that purchase water from an Ohio public water system. If their wholesale water system has an action level exceedance, consecutive systems may be required to conduct monitoring at distribution sampling points, issue public notification, include the exceedance in their Consumer Confidence Report and keep records. Consecutive water systems receiving water from an out-of-state surface water system are required to monitor their finished water for microcystins.

### Ground water systems

The routine monitoring requirements do not apply to ground water systems. If samples collected voluntarily by a ground water system or Ohio EPA exceed an action level, the ground water system may be required to issue public notification, include the exceedance in their Consumer Confidence Report, fulfill treatment technique requirements and/or keep records.

### Certified laboratories

These rules incorporate microcystins and cyanobacteria screening into the existing laboratory certification program. Laboratories granted acceptance in 2015 must submit new MDL results 30 days before the expiration date on the acceptance letter. Acceptance will be granted until one year from the rule's effective date. The \$1,550 laboratory certification fee for these parameters will be deferred until one year from the rule's effective date. The approved analytical method for microcystins is Ohio EPA Total (Extracellular and Intracellular) Microcystins - ADDA by ELISA Analytical Methodology Ohio EPA DES 701.0 version 2.2 (November 2015). Ohio EPA may accept other analytical methods in the future. Microcystins samples must be analyzed within five days of collection, except in limited circumstances which require analysis within 24 hours.

Ohio EPA will be using quantitative polymerase chain reaction (qPCR) as a new method for cyanobacteria screening in lieu of algal identification. Ohio EPA's Division of Environmental Services (DES) intends to be prepared to certify laboratories in this method beginning in 2017. Until such time as there is sufficient capacity at certified laboratories to perform this method, DES will conduct the cyanobacteria screening required under these rules. Cyanobacteria screening samples must be analyzed within seven days of collection.

Results must be reported by the 10th day following the month in which the sample was collected, except for the following which must be reported by the end of the next business day: all detections of microcystins in finished water samples; all results above five micrograms per liter total microcystins in raw water samples; and all results of cyanobacteria screening that indicate the potential for production of cylindrospermopsin, saxitoxins or anatoxin-a.

## How will the rules and HAB strategy coordinate with each other?

Ohio EPA will update the HAB strategy to incorporate this regulatory approach to microcystins and cyanobacteria screening into the broader, statewide HAB program. The requirements for microcystins monitoring and associated potential requirements if an action level is exceeded will replace the approach to microcystins in the current HAB Strategy. With respect to the other cyanotoxins, the results of the cyanobacteria screening required by these rules will be used by Ohio EPA to determine if monitoring for cyanotoxins other than microcystins needs to be conducted by Ohio EPA (or voluntarily by the PWS). These results will provide additional data to determine the occurrence of these cyanotoxins and inform whether any future rulemaking for these parameters is warranted.

## What is the rulemaking process and schedule?

Ohio EPA plans to adopt final rules to be effective June 1, 2016.

## How can I get more information?

For more information visit the Ohio EPA website at [epa.ohio.gov/ddagw/HAB.aspx](http://epa.ohio.gov/ddagw/HAB.aspx) or call (614) 644-2752.