



## Private Drinking Water

Approximately 1 million Ohioans use private water systems as their drinking water source. Private water systems include wells, ponds, and springs, all of which are regulated by Ohio Administrative Code Chapter 3701-28.

In recent years there has been increased awareness about Harmful Algal Blooms (HABs) and the cyanobacteria toxins that can be produced by a HAB event. Note that different types of cyanobacteria produce different types of toxins. In Ohio's lake and ponds, microcystin appears to be predominant HAB. For more information about HABs and the toxins they produce, view the following ODH [Blue-Green Algae/Cyanobacteria HABs](#) fact sheet.

Public water systems that get their water from HAB-contaminated surface waters test for these toxins regularly and post recreational contact and drinking water advisories, warning people that recreate and/or drink from these public water sources. Private water systems are not required to test for these contaminants. However, if you believe your private drinking water supply has been impacted by HABs, ODH suggests you have the water tested for the presence of cyanotoxins.

Ponds, and to a lesser degree, springs, and private well water systems are most likely to be impacted by a HAB because they use surface (or near surface) water as their water supply. For more information about [Pond Water - Drinking Water Treatment of Blue-Green Algae](#), click on the blue hyperlinked text. Also, shallow wells, wells with casing which does not extend very far below the ground, or older wells with deteriorated construction can potentially be impacted by a HAB from nearby contaminated surface waters.

## How do I test my water for cyanotoxins?

The owner of a private water system can have their water tested at a private lab. The test used for detecting microcystin in a private water system is called the Enzyme-Linked Immunosorbent Assay (or ELISA) test. The method of collecting and analyzing the samples is called the consensus microcystin Abraxis ELISA-ADDA (also known as ADDA by ELISA). For more information, click here: [Ohio EPA ADDA by ELISA Analytical Methodology](#)

If your source of water is a pond, spring, or a well that goes through a water treatment system (except for a water softener or UV), ODH strongly recommends you collect a pre-treated sample directly from the source (before it is treated or filtered). The toxin levels detected in pre-treated water sample will help determine how well your treatment system is functioning to remove cyanotoxin, and will help determine if any changes need to be made to the filtration/treatment system. ODH then recommends a sample be collected at a location that provides the water you and your family use to drink and cook (kitchen sink). **Note:** Care must be taken when collecting the source water sample to ensure you do not have skin contact with the water.

Currently, ELISA tests are available for all of the cyanotoxins, except anatoxin (one is being developed). If you want to test for anatoxin, you will need to request another laboratory method such as Liquid Chromatography-Mass Spectrometry, Liquid Chromatography-Tandem Mass Spectrometry, or High Performance Liquid Chromatography Photo Diode Array.

To help ensure your water sample was collected, prepared and transported correctly, ODH recommends trained personnel collect your water sample for analysis. If you decide to collect the sample yourself, make sure you contact the lab you plan to use **BEFORE** collecting the sample. They will ship you the proper collection containers, materials and instructions. Follow the instructions carefully and be prepared to ship or transport the samples **on ice** immediately to the lab. For any sample taken at a faucet (before or after treatment), ODH recommends you first run the water for at least five (5) minutes to ensure you are getting a fresh sample of the water. The Ohio EPA sampling protocol for cyanotoxin sampling can be found in section four (4) of [Ohio EPA's 2014 draft response strategy for public water supplies](#).

The following is a listing of currently known laboratories that will analyze a private water sample for the presence of cyanotoxins. This list should not be considered complete, as additional labs may be adding ELISA cyanotoxin analytical services.

**Beagle Bioproducts Inc.**

959 Schrock Road  
Columbus, OH 43229  
Phone: (614) 682-6588  
[info@beaglebioproducts.com](mailto:info@beaglebioproducts.com)

**BSA Environmental Services, Inc.**

23400 Mercantile Road, Suite 8  
Beachwood, OH 44122  
Phone: (216) 765-0582 Fax: (216) 765-0583  
[j.beaver@bsaenv.com](mailto:j.beaver@bsaenv.com)

**EnviroScience, Inc.**

5070 Stow Road  
Stow, OH 44224  
Phone: (330) 688-0111  
[jvydra@enviroscienceinc.com](mailto:jvydra@enviroscienceinc.com)

**GreenWater Laboratories/Cyano Lab**

205 Zeagler Dr., Suite 302  
Palatka, FL 32177  
Phone: (386) 328-0882 Fax: (386) 328-9646  
[info@greenwaterlab.com](mailto:info@greenwaterlab.com)

**Note:** ODH does not offer an endorsement of a specific lab.



## What are the established levels of HAB toxins in water?

In June 2015, the U.S. EPA established national health advisory levels for microcystin and cylindrospermopsin based on drinking water for 10 days.

### Drinking Water - Numeric Cyanotoxin Thresholds

Type of Advisory	Microcystin*	Anatoxin-a	Cylindrospermopsin	Saxitoxin*
Drinking Water: <i>Do Not Drink Advisory</i> (infants, children younger than six years, pregnant and nursing women, elderly immunocompromised and liver conditions)	0.3 µg/L	20 µg/L	0.7 µg/L	0.2 µg/L
Drinking Water: <i>Do Not Drink Advisory (for All)</i>	1.6 µg/L	20 µg/L	3 µg/L	0.2 µg/L
Drinking Water: <i>Do Not Use Advisory</i>	20 µg/L	300 µg/L	20 µg/L	3 µg/L

Note that values are reported in µg/L (microgram per cubic liter), which is equal to one (1) part per billion (ppb).

**Drinking Water Advisory - Do Not Drink (bottle-fed infants - children younger than five years and at-risk populations)** - when the cyanotoxin levels exceed the recommended thresholds, a Do Not Drink Advisory will be issued for bottle-fed infants, children younger than six years, pregnant and nursing women, the elderly, immunocompromised, people with pre-existing liver conditions, and those receiving dialysis treatment. Alternative water should be used for drinking, making infant formula, making ice, brushing teeth, and preparing food. Healthy school-age children (ages six and older) and adults may continue to use the water for washing hands, bathing, washing dishes and doing laundry. Children should be supervised when bathing to prevent accidental ingestion. Do not boil the water. Boiling the water will not destroy toxins, and some may become more dangerous as a result of boiling.

**Drinking Water Advisory - Do Not Drink (for all)** - when the cyanotoxin levels exceed the recommended thresholds, a Do Not Drink Advisory (for all) will be issued. Alternative water should be used for drinking, making infant formula, making ice, brushing teeth, and preparing food. Children should be supervised when bathing to prevent accidental ingestion. Healthy adults may use the water for bathing, washing hands, washing dishes and doing laundry. Do not boil the water.

**Drinking Water Advisory - Do Not Use** - when the cyanotoxin levels exceed the recommended thresholds, a Do Not Use Advisory will be issued. Alternative water should be used for all purposes. Do not boil the water.

## Where can I learn more about HABs?

For other public health HAB documents

<http://www.odh.ohio.gov/odhprograms/eh/HABs/HABDocumentsResources.aspx> For a one-stop shop for the current algae information in Ohio, visit [www.Ohioalgaefinfo.com](http://www.Ohioalgaefinfo.com)