

August 7-8 **or** August 9-10

Syllabus and instructors subject to change

Dealing with Cyanobacteria, Algal Toxins and Taste & Odor Compounds

Non-Credit Workshop
Offered with 13 Ohio EPA contact hours for PWS Operators

Prerequisites: None, however we recommend that you complete a phytoplankton ID class prior to attending this workshop.

Description: Lecture, laboratory, and field workshop to learn about cyanobacteria , their toxins, and the taste and odor compounds they produce; monitoring, collecting and processing methods; addressing algal toxins and taste and odor compounds in source water and water treatment plants; using remote sensing to track HABs; understanding recent initiatives at the state and national level dealing with algal toxins.

This non-credit workshop fee is **\$352** that includes room and meals for one night and two days.

Objectives:

- Participants will learn basic limnology concepts that relate to harmful algal bloom (HAB) development and the problems that HABs cause
- Participants will learn which cyanobacteria are toxin and/or taste and odor producers
- Participants will learn about algal toxin characteristics and how they are removed at water treatment plants
- Participants will learn sampling and monitoring procedures for cyanobacteria and algal toxin detection
- Participants will learn reservoir and source water management strategies to deal with cyanobacteria
- Participants will learn about NOAA's remote sensing program to track HABs.
- Participants will learn about recent national and state level HAB initiatives that include tracking HABs, and new guidance for PWS operators.

Grading: Satisfactory/Unsatisfactory

Texts/ Materials: Handouts will be prepared. No texts or materials are required. You may bring samples of your water for microscopic analysis.

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Day One

8:00-9:00 AM Check-In

9:30-10:0 AM Orientation

10:00 AM – Noon

Greetings/Introduction/Orientation
What are Cyanobacteria-Basic Ecology
Limnology Concepts

Noon-1:00 PM – Lunch

1:00 PM – 5:00 PM

Cyanobacteria Toxins
HAB Monitoring
Historic & Recent Occurrence

Break (15 minutes)

Reservoir Management
Ohio HAB Response Strategy and HAB Rules

5:00-6:00 PM – Dinner

6:00 PM- Optional Tour of Gibraltar Island

7:00 PM--Optional Cyanobacteria Lab ID Session

Day Two

7:00 AM – Breakfast

8:00 AM – Noon

Cyanobacterial Cell and Toxin Removal Options for Drinking Water Treatment Plants

Break (15 minutes)

Overview of Applied HAB Research Projects (invited speaker)
Cyanobacteria Relationship with Taste and Odor Compounds

Noon- 1:00 PM – Lunch

1:00 PM- 1:30PM

Cyanotoxin Analysis Options

1:30 PM - 4:00 PM Board boat, transfer to PIB

Tour of Water Quality Lab (ELISA & FLOWCAM demo)
Sampling and Monitoring Demonstrations on Boat
(Secchi Disk, Integrated Tube sampler, Datasonde, Plankton net, Sample Preservation)
Open Discussion

4:00 PM – Depart Stone Laboratory

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