

Public Water System Harmful Algal Bloom (HAB) Response Plan Template

This template is intended to be used by public water system (PWS) operators that use surface water sources to organize relevant information about source water, treatment, and monitoring, as well as a guide on how to respond if a HAB impacts the system. Please complete the form and share with your staff and your Local Health Department (LHD).

PWS Name: _____

PWS ID: _____

County Served: _____ Population Served: _____

I. Overview

Source Water Summary

Source Water Name	Intake or Well Depth (ft)	Surface Water (SW) or GWUDI (GU)

Has a HAB ever occurred in your source? Yes No Unknown

Treatment Summary

Type of Disinfection: Chlorine Chloramines Chlorine dioxide UV

Typical Disinfectant Residual (ppm): [Click or tap here to enter text.](#)

Does your system treat for bivalves (i.e. invasive mussels)? Yes No

Does your system use oxidation at the intake? Yes No

If yes,

Chemical used	Typical dosage (ppm)

Attach a schematic of your treatment process:

Microcystin Treatment Capabilities

The following treatment adjustments should be evaluated by each water system to determine if they are feasible methods to minimize microcystin in drinking water.

- Increase chlorine dose in water entering the clear well without allowing the chlorine concentration at entry point to exceed the MRDL of 4.0 mg/L Yes No
- Use an alternative source or intake Yes No
- Stop recycling backwash water Yes No
- Reduce or eliminate pre-oxidation Yes No
- Use coagulation aids to help bind and settle out bloom particles. Yes No
- Use powdered activated carbon or granulated activated carbon layer in/on filter bed. Yes No
- More frequent filter backwashing Yes No
- Optimize disinfection to oxidize dissolved toxins that remain after filtration. Yes No
- Add potassium permanganate at the end of treatment train to manage taste and odor and promote additional toxin destruction Yes No
- Use ozone for treating HAB toxins Yes No
- Increase frequency of accumulated sediment removal within the water plant Yes No
- Apply copper sulfate or other algaecides. Yes No

Algaecides and copper sulfate should only be used in certain circumstances due to risk of cell lysis. Appropriate permits must be obtained from the New York State Department of Environmental Conservation prior to algaecide or copper sulfate application.

II. Sampling

Sampling Equipment

List the contact information for an ELAP certified laboratory for total microcystin:

Laboratory Name	Contact Name	Telephone

Laboratories must be certified to analyze for microcystin by the New York State Environmental Laboratory Approval Program (ELAP) for EPA method 546 – Determination of Total Microcystins and Nodularins in Drinking Water and Ambient Water by Enzyme-Linked Immunosorbent Assay (ELISA). A list of certified laboratories is available at <https://www.wadsworth.org/regulatory-programs/regulatory-programs/environmental-laboratory-approval-program/microcystin>

Do you have the appropriate bottles, sampling instructions and shipping information? Yes

List the analytical capabilities of your in-house laboratory (e.g. jar testing, color, iron, etc.):

Analyte	ELAP Certified (Yes or No)

Sampling Locations

Raw water sample location (be specific): [Click or tap here to enter text.](#)

Raw water samples should be collected at a point prior to any treatment, including chlorine or permanganate for invasive mussel control.

Chlorine contact time (min): [Click or tap here to enter text.](#)

Chlorine contact time is the time it takes for water to travel from the point of chlorine injection to the first customer. Please note that chloramines and chlorine dioxide are ineffective treatments for microcystin. If either of these disinfectants are used in addition to sodium hypochlorite or chlorine gas, contact time should be measured from the point of sodium hypochlorite or chlorine gas injection.

Full chlorine contact time (CT) sample location: [Click or tap here to enter text.](#)

Finished sampling location that represents maximum chlorine contact time

III. Routine Monitoring

Do you have a routine monitoring plan for peak HAB season? This is highly recommended by DOH.

Yes No If yes, explain your plan. If not, discuss potential options with your LHD.

[Click or tap here to enter text.](#)

IV. Event Based Actions

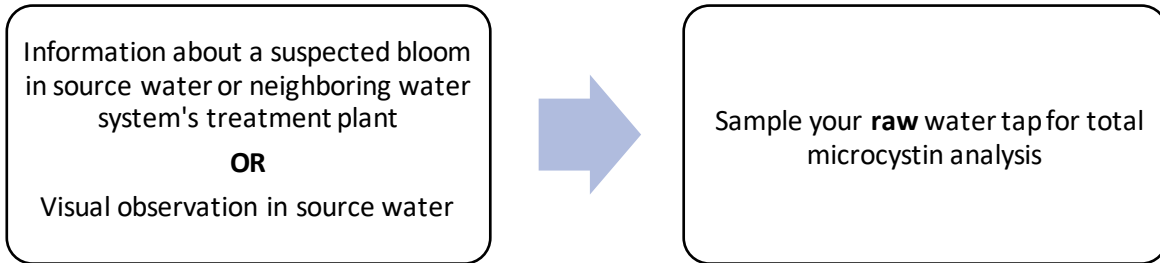
Early Warning Signs

Know and monitor for the early warning signs:

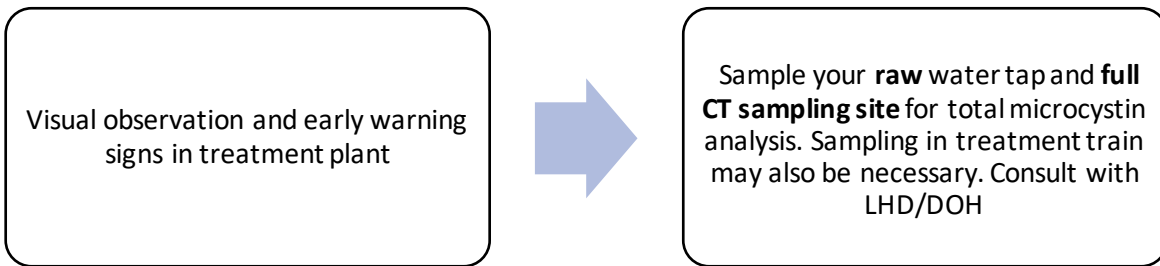
- Visual observation of bloom in source water
- Sunny, hot days that increase water temperature
- A spike in raw water turbidity
- Unusual odor
- A spike in raw water pH
- Increased green color of raw water or anywhere in the treatment plant
- Increase in coagulant or filter aid dose needed
- Decreased filter runtimes
- Increased finished water chlorine demand
- Other: [Click or tap here to enter text.](#)

Common Sampling Scenarios

Scenario 1



Scenario 2



Communication

List internal PWS, laboratory and government staff who should be informed of issues/sampling (i.e. internal PWS staff, local health department and, other local officials):

Name	Agency	Address	Contact Phone	Contact email

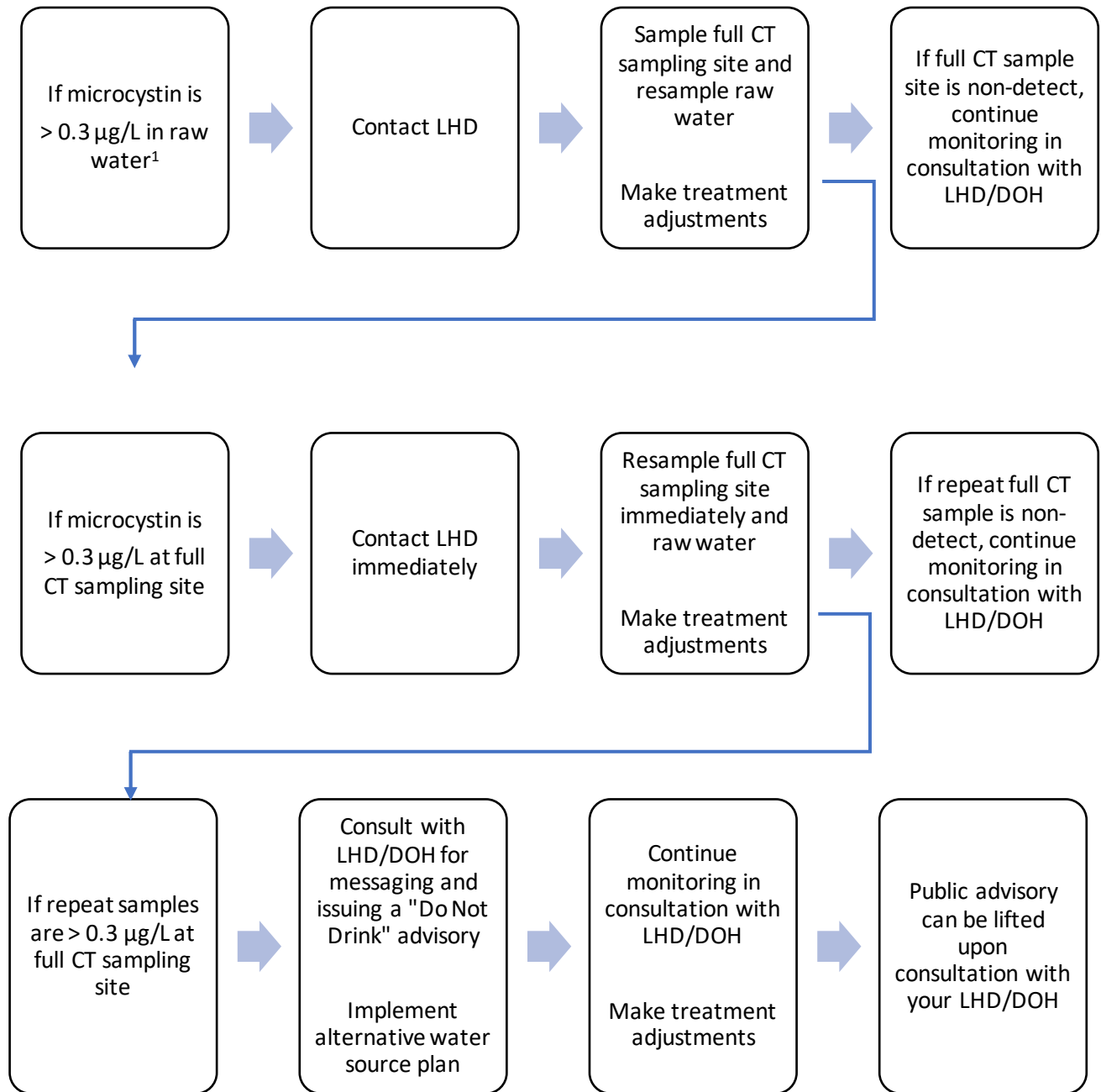
List public water supplies that utilize the same water source who should be informed of a bloom:

PWS Name	Operator Name	Source	Contact Phone	Contact email

List consecutive systems who should be informed of issues/sampling:

PWS Name	Operator Name	Source	Contact Phone	Contact email

Interpretation of Results



¹ The turnaround time for microcystin samples may vary by individual laboratory. If microcystin is detected in your raw water, expedited turnaround time should be requested from your laboratory.

V. Emergency Response (Issuing a “Do Not Drink” Advisory)

Do you have a water supply emergency plan (ERP) that has been submitted to your local health department? Yes No

Alternative Water Supply

Do you have an interconnection? Yes No

If no, do you have plan for obtaining, storing and distributing bottled water/bulk water? Yes No

Water suppliers should work with their County Emergency Management Office or Public Health Department to determine if there are contracts in place for bottled and bulk water well in advance of an emergency. Water systems should also work with municipal leaders to develop a bottled/bulk water distribution plan. The plan can establish times when bottled/bulk water is available; a list of contacts for employees or volunteers that can assist; a method of determining that bottled/bulk water is being obtained only by those served by your water system; and a system of accounting for the water distributed.

Public Notification

Have you developed and reviewed a communication strategy (e.g. reverse 911, NY WARN, etc.)?
 Yes No

Your Local Health Department will be available to assist you with developing appropriate public notices to deliver to your customers in the event microcystin is detected in your finished water. Public notification templates are also available from the United States Environmental Protection Agency and New York State Department of Health. If microcystin is detected in the finished water, these results must also be reported in your Annual Water Quality Report. Your local health department should be consulted prior to issuing any public advisory, and prior to instructing customers to resume normal use of their water.

EPA’s Public Notification Template: https://www.epa.gov/sites/production/files/2017-06/documents/003_drinking_water_advisory_everyone.pdf

NYSDOH’s Public Notification Template: <https://www.health.ny.gov/environmental/water/drinking/bluegreenalgae/docs/drinkingwatemotificationhabs.pdf>

List vulnerable populations (i.e. hospitals, nursing homes, manufacturers and daycares) that will need to be contacted:

Customer Type	Contact Name	Address	Contact Phone	Method of Communication