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## State Water Resources Control Board

**TO:** Lauren Zeise, Ph.D., Director  
Office of Environmental Health Hazard Assessment

**FROM:** Darrin Polhemus, P.E.  
Deputy Director  
**DIVISION OF DRINKING WATER**

**DATE:** February 4, 2021

**SUBJECT:** REQUEST FOR RECOMMENDATION ON NOTIFICATION LEVELS FOR FOUR  
CYANOTOXINS: MICROCYSTINS, CYLINDROSPERMOPSIN, ANATOXIN-A,  
AND SAXITOXIN

The Division of Drinking Water requests the advice of the Office of Environmental Health Hazard Assessment (OEHHA) in establishing Drinking Water Notification Levels (NLs) for the following cyanobacterial toxins (cyanotoxins): microcystins, cylindrospermopsin, anatoxin-a, and saxitoxin. The Division notes that in May 2012, OEHHA issued a report entitled *Toxicological Summary and Suggested Action Levels to Reduce Potential Adverse Health Effects of Six Cyanotoxins* (2012 Report). The 2012 Report considered the potential health effects (in humans and domestic animals) of exposure to six cyanotoxins (anatoxin-a, cylindrospermopsin, and four microcystin variants), and recommended health protective “action levels”. The action levels apply to incidental exposure during recreational activities and are not intended to address drinking water.

Also of note, is the recently released (December 2020) World Health Organization cyanotoxin advisories for drinking water ([https://www.who.int/water\\_sanitation\\_health/water-quality/guidelines/chemicals/en/#C](https://www.who.int/water_sanitation_health/water-quality/guidelines/chemicals/en/#C)).

Regarding the toxins of interest, the Division requests your consideration of the following:

### Microcystins and Cylindrospermopsin

In 2015, the United States Environmental Protection Agency (USEPA) issued 10-Day Drinking Water Health Advisories (HAs) for microcystins and cylindrospermopsin; HAs are non-regulatory concentrations at or below which adverse health effects are not anticipated to occur over specific exposure durations. Information on the HAs, including health effects support documentation, may be found at <https://www.epa.gov/ground-water-and-drinking-water/drinking-water-health-advisory-documents-cyanobacterial-toxins>. The federal HAs specify two distinct, age-dependent concentrations for each contaminant to account for increased vulnerability in very young children

We request OEHHA's review of USEPA's findings and provide recommendation regarding the establishment of NLs for microcystins and cylindrospermopsin. Specific considerations include:

- The 10-day exposure duration provided by USEPA, which indicates an exposure of less than 10 days should not result in adverse health effects. The Division has not typically specified an exposure timeframe when adopting drinking water concentrations for acute toxicity, and,
- Use of age-dependent concentrations similar to USEPA's approach or a single value based on exposure in vulnerable subpopulations.

#### Anatoxin-a

USEPA also considered adopting a HA for anatoxin-a but concluded that the available health effects information was inadequate. However, available monitoring data indicate that anatoxin-a may present a threat in drinking water supplies. We request that OEHHA assess the available information for anatoxin-a and recommend a NL if the information supports it.

#### Saxitoxin

OEHHA's 2012 Report did not address saxitoxin and USEPA did not formally consider a HA for this contaminant. However, available monitoring data indicate that saxitoxin may present a threat in drinking water supplies. We request that OEHHA assess the available information on saxitoxin and recommend a NL if the information supports it.

Thank you for your consideration. If you have any questions or would like to discuss our request, please contact Stefan Cajina at (510) 620-3452 or [Stefan.Cajina@waterboards.ca.gov](mailto:Stefan.Cajina@waterboards.ca.gov) or Melissa Hall at (916) 323-0373 or [Melissa.Hall@waterboards.ca.gov](mailto:Melissa.Hall@waterboards.ca.gov).

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