

# CyanoHABs Laboratory List

The purpose of this laboratory list is to readily provide information about laboratories capable of analyzing water samples for cyanobacteria and the toxins cyanobacteria can produce. This list is not intended to describe any regulatory requirements or make any laboratory endorsements. The laboratories are listed in alphabetic order. Please note: laboratories should be contacted prior to submitting any samples. Many laboratories discussed flexibility in prices and the need to coordinate any sampling and analysis.



Laboratory	Matrix	Cyanotoxin	Method	MDL (µg/L)	RL (µg/L)	Response Time	Sample Storage/ Shipping Condition
<a href="#">Bend Genetics, LLC</a> Contact: (916) 550-1048 or <a href="mailto:customer_service@bendgenetics.com">customer_service@bendgenetics.com</a> Location: Sacramento, CA	DW, AW	Microcystins, total	ELISA	0.15	0.15	Standard turnaround time is 4 business days (M-F). Rush response is available for additional cost	Must be collected in glass bottles and stored below 10°C. Samples need to be sent to the lab within 5 days of collection.
	DW, AW	Microcystins, total	EPA 546	Contact lab	0.3		
	DW, AW	Anatoxin-a	ELISA	0.15	0.15		
	DW, AW	Cylindrospermopsin	ELISA	0.05	0.05		
	DW, AW	Saxitoxins	ELISA	0.02	0.02		
	DW, AW	Domoic acid	ELISA	6.0	6.0		
	Tissue (shellfish)	Microcystins	ELISA	Contact lab	Contact lab		
	Tissue (shellfish)	Saxitoxins	ELISA	Contact lab	Contact lab		
	Tissue (shellfish)	Domoic acid	ELISA	Contact lab	Contact lab		
<a href="#">EcoAnalysts, Inc.</a> Contact: <a href="mailto:sales@ecoanalysts.com">sales@ecoanalysts.com</a> Location: Moscow, ID	DW, AW	Microcystins, total	ELISA	Contact lab	0.15	Contact lab	Contact lab
	DW, AW	Anatoxin-a	ELISA	Contact lab	0.15		
	DW, AW	Cylindrospermopsin	ELISA	Contact lab	0.05		
	DW, AW	Saxitoxins	ELISA	Contact lab	0.02		
<a href="#">Eurofins Eaton Analytical, Inc.</a> Contact: (800) 566-5227 or <a href="mailto:Us20_sales@eurofinsus.com">Us20_sales@eurofinsus.com</a> Location: Monrovia, CA	DW, AW	Microcystins, total	EPA 546	Contact lab	0.3	48 hours	Store and ship cold in the dark; ship overnight on ice. Contact lab for details.
	DW, AW	Microcystins (LA,LF,LR,LY,RR,YR)	No Certified Method - L231	Contact lab	0.006-0.02		
	DW, AW	Nodularin	No Certified Method - L231	Contact lab	0.005-0.1		
	DW	Anatoxin-a	EPA 545	NA	0.02-0.03		
	DW	Cylindrospermopsin	EPA 545	NA	0.05-0.09		
	DW, AW	Saxitoxin	Not available	Not available	Not available		
	DW	Microcystins	EPA 544	Contact lab	Various		
	DW	Nodularin	EPA 544	Contact lab	0.0073		

Laboratory	Matrix	Cyanotoxin	Method	MDL (µg/L)	RL (µg/L)	Response Time	Sample Storage/ Shipping Condition
<a href="#">GreenWater Laboratories</a> Contact: (386) 328-0882 or <a href="mailto:info@greenwaterlab.com">info@greenwaterlab.com</a> Location: Palatka, FL	DW, AW	Microcystin suite (14+ targeted congeners)	LC-MS-MS	0.05	0.05	5 business days (shorter turnaround times available)	For liquid 250 mL. Dry weight 2 to 10 g. Samples must be shipped overnight and kept cool. Sampling kits are available upon request.
	DW, AW	Microcystins, adda	ELISA	0.15	0.30		
	DW, AW	Total microcystins, adda (MMPB)	LC-MS-MS	0.06	0.10		
	DW, AW	Cylindrospermopsin	LC-MS-MS	0.05	0.05		
	DW, AW	Anatoxin-a	LC-MS-MS	0.05	0.05		
	DW, AW	Anatoxin-a suite	LC-MS-MS	0.05 – 0.50	Contact lab		
	DW, AW	Saxitoxin	ELISA	0.02	0.05		
	DW, AW	Saxitoxin suite (13 analogs)	LC-MS-MS	0.02-1.0	Contact lab		
	DW, AW	Dermatoxin suite	LC-MS-MS	1-5	Contact lab		
	DW, AW	Nodularin	LC-MS-MS	0.05	0.05		
	DW, AW	BMAA (includes BAMA, DAB, AEG)	LC-MS-MS	5.0	Contact lab		
<a href="#">King County Environmental Laboratory</a> Contact: (206) 477-7200 <a href="mailto:Fritz.grothkopp@kingcounty.gov">Fritz.grothkopp@kingcounty.gov</a> Location: Seattle, WA	DW, AW	Microcystins, total and nodularin	ELISA	0.16	Contact lab	Typically 48-72 hours, depending on current sample load (contact lab)	Ship overnight on ice; keep sample in the dark. Water sample size 250 mL minimum.
	DW, AW	Microcystins and Nodularin	LC-MS-MS	0.2	Contact lab		
	DW, AW	Anatoxin-a	RBA	Contact lab	Contact lab		
	DW, AW	Anatoxin-a	LC-MS-MS	0.01	Contact lab		
	DW, AW	Saxitoxins	ELISA	0.16	Contact lab		
	DW, AW	Cylindrospermopsin	ELISA	0.16	Contact lab		
	Note: Lab also tests sediment, tissue, and serum (dogs) samples for various cyanotoxins				Contact lab		

Laboratory	Matrix	Cyanotoxin	Method	MDL (µg/L)	RL (µg/L)	Response Time	Sample Storage/ Shipping Condition
Lake Superior State University, <a href="#">Superior Analytics Laboratory</a> Contact: (906) 635-2076 Location: Marie, MI	DW, AW	Microcystins, anatoxin-a, cylindrospermopsin, saxitoxins	ELISA	Contact lab	Contact lab	ELISA and HPLC < 48 Hours (Upon receipt of sample). Liquid Samples and LC-MS-MS ~ 72 Hours. Samples that require digestion, may add 1 day extra	Contact lab
	DW, AW		HPLC	Contact lab	Contact lab		
	DW, AW		LC-MS-MS	Contact lab	Contact lab		
	Note: Lab also tests tissue, serum, and powders for microcystin, anatoxin-a, cylindrospermopsin, saxitoxins			Contact lab	Contact lab		
University California Davis, <a href="#">California Animal Health and Food Safety Laboratory</a> Contact: (530) 752-7578 Location: Davis, CA	Note: Lab analyzes samples related to <i>animal health</i> . The lab can analyze animal samples (tissues and stomach contents) related to possible animal exposures to cyanotoxins from harmful algal blooms			Contact lab	Contact lab	Contact lab	Contact lab
University California Santa Cruz, <a href="#">Biological and Satellite Oceanography Laboratory</a> Contact: Raphael Kudela at <a href="mailto:kudela@ucsc.edu">kudela@ucsc.edu</a> Location: Santa Cruz, CA	DW, AW	Microcystins	LC-MS	< 0.25	Contact lab	3 days upon receipt	250 mL sample size, amber glass bottles, store in cold and dark, ship cold.
	DW, AW	Anatoxin-a	LC-MS	< 0.26	Contact lab		
	DW, AW	Cylindrospermopsin, saxitoxins, lyngbyatoxin-a, yessotoxin	LC-MS	Contact lab	Contact lab		
Weck Laboratories Contact: (626) 336-2139 <a href="mailto:info@wecklabs.com">info@wecklabs.com</a> Location: City of Industry, CA	DW	Anatoxin-a	EPA 545	Contact lab	0.02-0.03	Contact lab	Contact lab
	DW	Cylindrospermopsin		Contact lab	0.05-0.09		
	DW	Microcystins	EPA 544	Contact lab	Various		
	DW	Nodularin		Contact lab	0.0073		
	DW, AW	Microcystins, total	EPA 546	Contact lab	0.3		
	DW, AW	Domoic acid	LC-MS-MS	0.10	Contact lab		

Laboratory	Matrix	Metagenomics - 16S/18S Amplicon or Shotgun (Identification and enumeration of cyanobacteria or microbial community)	Additional Information	Molecular Diagnostics PCR/QPCR (Rapid enumeration of toxin and taste & odor producing cyanobacteria/bacteria)	Additional Information	Sample Bottles/Storing
<a href="#">Bend Genetics, LLC</a> Contact: (916) 550-1048 or <a href="mailto:customer_service@bendgenetics.com">customer_service@bendgenetics.com</a> Location: Sacramento, CA	DW	X	<a href="#">Sequencing information</a>	X	<a href="#">qPCR information</a>	Water samples need to be stored cold (4°C) and dark, <u>never frozen</u> . Alternately, samples can be concentrated onto glass fiber filters or membrane filters and stored frozen (similar to Chl- <i>a</i> sample prep).
	AW	X		X		
	Sediments	X		X		Cold (4°C) and dark

Laboratory	Identification (Genus/Species)	Cell Density	Enumeration	Pigments - Chlorophyll-a	Pigments - Phycocyanin	Response Time	Sample Storing/ Shipping
<a href="#">Bend Genetics, LLC</a> Contact: (916) 550-1048 or <a href="mailto:customer_service@bendgenetics.com">customer_service@bendgenetics.com</a> Location: Sacramento, CA	X	X	X	X	X	Standard turnaround time is 4 business days (M-F)	Store samples cold (4°C) and dark, never frozen. Must not be preserved (e.g., Lugols) if molecular analysis (by qPCR) is desired.
California State University, San Marcos, <a href="#">CA Primary Algae Laboratory</a> Contact: (760) 750-8023 or <a href="mailto:rhrstov@csusm.edu">rhrstov@csusm.edu</a> Location: San Marcos, CA	X	X	X			Rush service available	Prefer 2 sets of samples: 1 fresh/live sample kept cool and 1 preserved by Lugol's. Ship cold.
<a href="#">EcoAnalysts, Inc.</a> Contact: <a href="mailto:sales@ecoanalysts.com">sales@ecoanalysts.com</a> Location: Moscow, ID	X	X	X	X	X	1-5 business days	If preserved, preserved in Lugol's. No glass containers. If collected fresh, put on ice and overnight them (M-F).

Laboratory	Identification (Genus/Species)	Cell Density	Enumeration	Pigments - Chlorophyll-a	Pigments - Phycocyanin	Response Time	Sample Storing/ Shipping
<a href="#">Eurofins Eaton Analytical, Inc.</a> Contact: (800) 566-5227 or <a href="mailto:Us20_sales@eurofinsus.com">Us20_sales@eurofinsus.com</a> Location: Monrovia, CA	X	X	X			Contact lab	Store and ship cold in the dark; ship overnight on ice. Contact lab for details.
<a href="#">GreenWater Laboratories</a> Contact: (386) 328-0882 or <a href="mailto:info@greenwaterlab.com">info@greenwaterlab.com</a> Location: Palatka, FL	X	X	X	X	X	Contact lab	None specified
<a href="#">King County Environmental Laboratory</a> Contact: (206) 477-7200 <a href="mailto:Fritz.grothkopp@kingcounty.gov">Fritz.grothkopp@kingcounty.gov</a> Location: Seattle, WA	X	X	X	X		Contact lab	Ship on ice in the dark
Lake Superior State University, <a href="#">Superior Analytics Laboratory</a> Contact: (906) 635-2076 Location: Marie, MI	X		X	X		Contact lab	None specified

This laboratory list is not an exhaustive review of available laboratories. If there is a laboratory that wishes to be considered for this list or if there are any corrections, please contact [OIMA-Helpdesk@waterboards.ca.gov](mailto:OIMA-Helpdesk@waterboards.ca.gov). Note: data for list compiled in 2021; approved February 2022.

### Definitions

**AW** – Samples collected for Ambient Water analysis, including sampling for protection of recreation uses

**DW** – Samples collected for Drinking Water analysis

**ELISA** – Enzyme Linked Immunosorbent Assay

**HPLC** – High performance liquid chromatography

**LC-MS** – Liquid Chromatography Mass Spectrometry

**LC-MS-MS** – Liquid Chromatography with multiple Mass Spectrometry

**MDL** – Method Detection Limit

**RBA** – Receptor Binding Assay

**RL** – Reporting Limit

**Microcystins** – refers to the laboratory analysis of more than one congener of microcystins class (consisting of 200+ congeners), typically resulting from analytical chemistry methods (e.g. LC-MS)

**Microcystins, total** – refers to the sum of microcystins class detected by analytical method, typically resulting from biological methods (e.g. ELISA)