

Cyanotoxin Monitoring Plan (March 2018)

Clearlake Oaks County Water District

Step 1. Visual Inspection and Monitoring Schedule Visually inspect source waters for algae blooms (typically April through Nov). Observations include algae at surface, presence of toxic producing genera present in microscopy, algae build up on raw pH probe. Sample for microcystins ¹ in raw and finish water on a biweekly basis during presence of algae. Sampling is concurrent with tribes biweekly (Adda specific - ELISA). <i>If microcystin concentration exceeds 0.3 ug/L in 2 of 3 finish water samples, continue to Step 2.</i>	
Cyanotoxin Monitoring	Treatment Optimization
Step 2. Confirmation Sample (within 24 hours) Collect a confirmation sample at the entrance to the distribution system in triplicate form. <i>If 2 of 3 samples at entrance to distribution are >0.3 ug/L microcystin, continue to Step 3 and notify stakeholders.</i>	Monitor raw pH and use NTU readings to track plant performance. Monitor ozone dosage, pending extra- and intra-cellular results and microscopy (if <i>Lyngbya</i> or <i>Anabaena</i> – lower dosage). If bloom is in growth stage, consider reducing ozone to less than 2.7 mg/L. If bloom is in decay stage, maximize ozone.
Step 3. Positive Lab Sample Generate public notice and conduct daily sampling at entrance to the distribution system. Consider sampling at the source for extra- and intra-cellular toxins. <i>If microcystin concentration is less than 0.3 ug/L at entrance to distribution system, continue to Step 4.</i>	Use bench top charge analyzer to optimize coagulation/flocculation process and evaluated condition of GAC media. Monitor sludge accumulation at locations with drinking water contact. Use CT sheet to determine appropriate chlorine dosage. Increase filter backwash operations. Evaluate possibility of coag aid and filter aid operations.
Step 4. Confirmation and Lifting notice Collect samples at locations in distribution system specified in Cyanotoxin Sampling Schedule and at the entrance to the distribution system. <i>If any samples are positive, sample at Step 3 locations. If all laboratory samples are absent microcystins, lift notice and conduct weekly monitoring.</i>	Resume operations

¹ Consider sampling for *Cylindrospermopsin* or other toxins if corresponding genera are present.

Cyanotoxin Sampling Schedule

	Step 1. Routine Monitoring	Step 2 @ WTP <i>confirm</i>		Step 3 +MC	Step 4 OFF (DAY1)	Step 4 OFF (DAY2)
Frequency	BIWEEKLY	TRIGGER	Notify stakeholders, prepare PN	DAILY	DAY1	DAY2
Test-Type	ADDA ELISA	ADDA ELISA		ADDA ELISA	ADDA ELISA	ADDA ELISA
LOCATION:						
RAW	X	X		M ^F		M
postOzone		X		M		
postClarifier		X		M		
postFilter		X		M		
postGAC		X		M		
EntryToDist	X	2/3 Step 3		X	X	X
Keys		X			X	X
North Dist					X	X
South Dist					X	X
Elevated Dist						
Other				PN prep	Flush	

M = maybe, if no additional cost; PN – public notification; F = fractionate source sample to look at extra- and intra-cellular distribution of toxin in source water

STAKEHOLDERS:

Public Health Officer, Sara Goldgraben: (707) 263-1090

District Office, Sheri Miller (707) 576-2145

Tribal Communication (707)295-8577 (Karola) (707) 263-3924 x132 (Sarah)

Hospitals: AH Clear Lake (707) 994-6486

Veterinarians: Clearlake Vet (707) 994-9100 Waddington: (707) 995-1138

CLEARLAKE OAKS COUNTY WATER DISTRICT

INFORMACIÓN IMPORTANTE SOBRE SU AGUA POTABLE

Se Encontraron Nivel Bajos de Cianotoxinas en Agua Potable Tratada

Se encontraron bajos niveles de [specific cyanotoxin] en su agua potable tratada. La/el [specific cyanotoxin] es una cianotoxina. Las cianotoxinas son creadas por bacterias conocidas como cianobacterias o algas verde-azules. Bajo ciertas condiciones ambientales, las cianobacterias pueden crear floraciones de algas nocivas que pueden crear un riesgo para la salud si son ingeridas. Sin embargo, no todas la 'floraciones' producen estas cianotoxinas. Se tomaron muestras de su agua potable tratada para determinar si había cianotoxinas presentes en su agua cuando había sospecha de floración. El muestreo se llevó a cabo el [date]. Los resultados de las pruebas confirmados en [date] muestran que hay cianotoxinas presentes en su agua potable tratada y pueden presentar un riesgo para la salud. Como resultado, vamos a cambiar nuestras operaciones de tratamiento para disminuir las concentraciones de [specific cyanotoxin] tan pronto como sea posible.

¿Qué debo de hacer?

- Hasta nuevo aviso, use agua potable embotellada para preparar la fórmula infantil, para cocinar y como fuente de agua potable para los seres humanos y mascotas. Las cianotoxinas no se eliminan hirviendo el agua.
- Busque tratamiento médico inmediatamente si una persona, mascota, o ganado podrían haber estado expuestos a cianotoxinas. Los síntomas comunes de haber estado expuesto a cianotoxinas incluyen: irritación de los ojos, ronchas, úlceras en la boca, vómito, diarrea y síntomas de resfriado o gripe.
- Evitando tragar agua, puede usar esta agua para bañarse, para lavar los trastes, limpiar, lavar la ropa, regar jardines y para el inodoro.

¿Qué se está haciendo?

Estamos trabajando diligentemente para corregir este problema y no se espera que éste problema dure más de [number of days]. Nosotros le notificaremos cuando el agua se pueda usar para beber. Puede encontrar más información en:

<http://www.mywaterquality.ca.gov/habs/what/drinking.html>

Para preguntas, puede contactar a: District Office at (707) 998-3322.

CLEARLAKE OAKS COUNTY WATER DISTRICT

IMPORTANT INFORMATION REGARDING YOUR DRINKING WATER

Low Levels of Cyanotoxins Found in Treated Drinking Water

Low levels of [specific cyanotoxin] were found in your treated drinking water. [specific cyanotoxin] is a cyanotoxin. Cyanotoxins are created by bacteria known as cyanobacteria or blue-green algae. Under certain environmental conditions, the cyanobacteria can create harmful algal blooms that can create a health risk if ingested. However, not all 'blooms' produce these cyanotoxins. Your treated drinking water was sampled to determine if cyanotoxins were present when a suspected bloom was occurring. The sampling was conducted on [date]. The test results confirmed on [date] showed cyanotoxins are present in your treated drinking water and may present a health risk. As a result, we are changing our treatment operations to lower concentrations of [specific cyanotoxin] as quickly as possible.

What should I do?

- Use bottled drinking water for the preparation of baby formula, cooking, and as your source of drinking water for humans and pets until further notice. Boiling water will not remove the cyanotoxins.
- Seek medical treatment immediately if a person, pet, or livestock might have been exposed to cyanotoxins. Common symptoms of exposure to cyanotoxins include: eye irritation, skin rash, mouth ulcers, vomiting, diarrhea, and cold or flu-like symptoms.
- Use this water for showering (avoid swallowing the water), washing dishes, cleaning, laundry, watering gardens, and flushing toilets.

What is being done?

We are working hard to correct this problem, and do not expect this problem to last more than [number of days]. We will notify you when the water is acceptable for drinking. More information can be found at: <http://www.mywaterquality.ca.gov/habs/what/drinking.html>

For questions, please contact: District Office at (707) 998-3322.