

# Water Quality



**The frog does not drink up the pond in which he lives.**

- Native American Saying

**When the well is dry, we know the worth of water.**

- Benjamin Franklin

# COMCD

## Central Oklahoma Master Conservancy District

Charged by the Department of the Interior with supplying water from Lake Thunderbird to Norman, Midwest City, Del City.

Interacts directly with the Bureau of Reclamation.

Manages the lake, dam, land immediately adjacent to the lake, pumping facilities and pipelines.

# Water Quality: Problems

Lake Thunderbird – an “impaired” water body  
-designated as a Sensitive Water Supply (SWS)

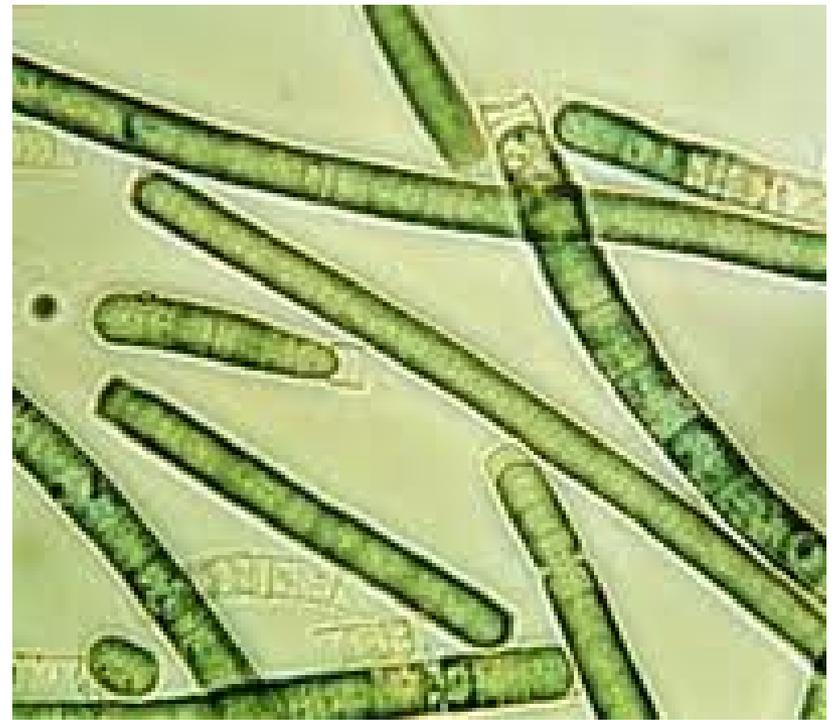
(Failure to meet Oklahoma Water Quality Standards)

excessive levels of turbidity

low dissolved oxygen

excessive chlorophyll *a* levels (due to algae in lake)

# Toxic Blue-Green Algae (aka cyanobacteria)



- ...photosynthetic, may exist as single cells or groups of cells.
- ...occur naturally in surface waters.
- ...can quickly multiply into a **bloom** under optimal conditions\*

\*Warm water

\*Elevated levels of nutrients (*phosphorous and nitrogen*)

\*Lack of water turbulence

*Cyanobacteria* can produce toxins that attack:  
liver (hepatotoxins)  
nervous system (neurotoxins)  
other toxins simply irritate the skin.

## Microcystins

- most common of cyanobacterial toxins found in water.
- most often responsible for poisoning animals and humans.
- extremely stable in both warm and cold water.
- tolerate radical changes in water chemistry.
- about 50 different kinds of microcystins.

Source: Health Canada

# Lake Hodges, California



# Lake Erie, Ohio



Another water quality concern:  
trace pollutants and emerging contaminants.  
(present in very small amounts)

Three broad groups:

1. Industrials
2. Pesticides and herbicides
3. Pharmaceutical and  
personal care products

# What is COMCD doing about all of this?

## 1. Turbidity

 Shoreline stabilization project

## 2. Contaminants of emerging concern

 Systematic measurement of  
contaminants now in Lake Thunderbird.