

## Potentially Toxicogenic (PTOX) Cyanobacteria Screen

Project: Lake Carroll Association

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<u>Sample ID</u>	<u>Site</u>	<u>Collected</u>
Lake Carroll	East Marina Bridge	8/30/17
Lake Carroll	Pell Park	8/30/17
Lake Carroll	East Marina Bridge Scum	8/31/17

### Method

One mL aliquots of the non-preserved samples were prepared using a Sedgewick Rafter cells. The samples were received partially frozen and some soft bodied algae/cyanobacteria may have been destroyed prior to observation. Each sample was scanned at 100X for the presence of potentially toxicogenic (PTOX) cyanobacteria using a Nikon Eclipse TS100 Inverted Microscope equipped with phase contrast optics. Higher magnification was used as necessary for identification and micrographs.

### Results

#### Lake Carroll – East Marina Bridge

The sample was dominated by the PTOX cyanobacteria *Microcystis* spp. The cyanobacterium *Limnoraphis birgei* was observed, however, is not currently a suspected toxin producer. The PTOX cyanobacterium *Dolichospermum* sp. was also observed at lower densities.

#### Lake Carroll – Pell Park

The sample was dominated by the PTOX cyanobacteria *Microcystis* spp. The cyanobacteria *Limnoraphis birgei* and *Dolichospermum* sp. were also observed at lower densities.

#### Lake Carroll – East Marina Bridge Scum

The sample was dominated by significant levels of the PTOX cyanobacteria *Microcystis* spp. The cyanobacteria *Limnoraphis birgei* and *Dolichospermum* sp. were also observed at lower densities. This sample had the highest density of cyanobacteria.

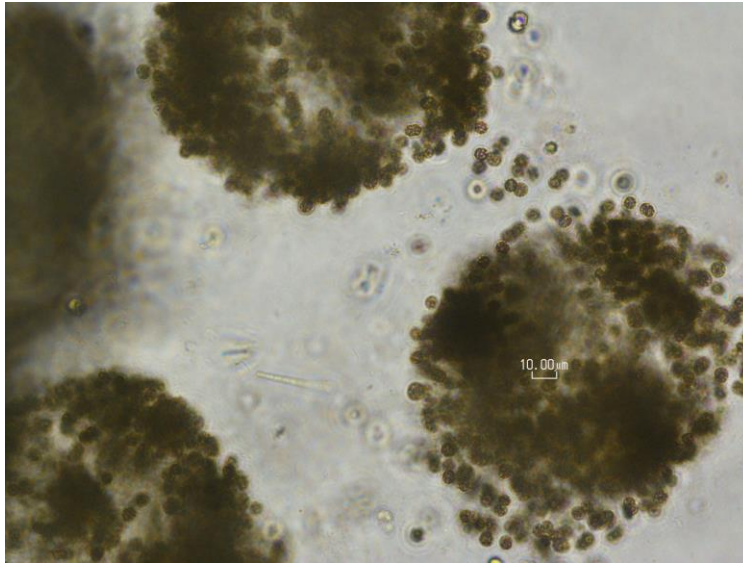
Potential toxin producing genera observed include:

Microcystins	Saxitoxins	Anatoxin-a	Cylindrospermopsin
<i>Microcystis</i>	<i>Dolichospermum</i>	<i>Dolichospermum</i>	<i>Dolichospermum</i>
<i>Dolichospermum</i>			

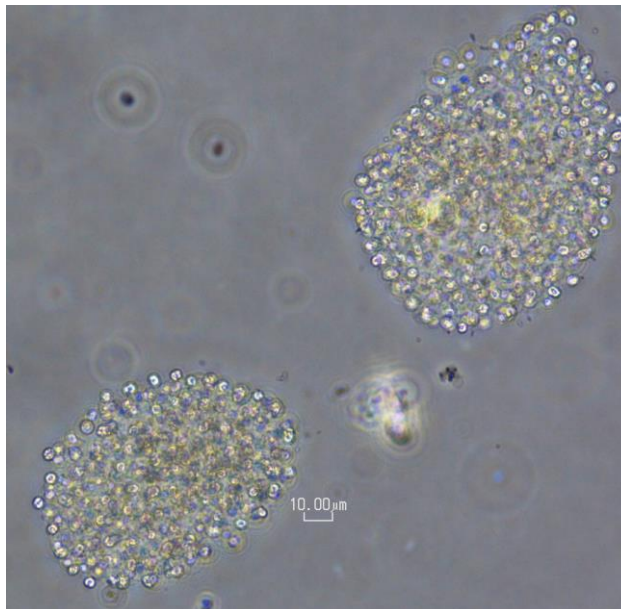
**Recommendations:**

Based on the significant presence of *Microcystis* observed, toxin analysis for microcystins is currently recommended. Levels of *Dolichospermum* were not high enough to warrant additional toxin analyses at this time.

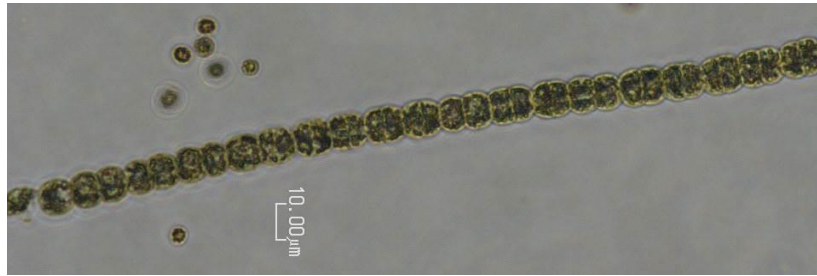
**Micrographs**



*Microcystis* sp. at 400X (**East Marina Bridge**)



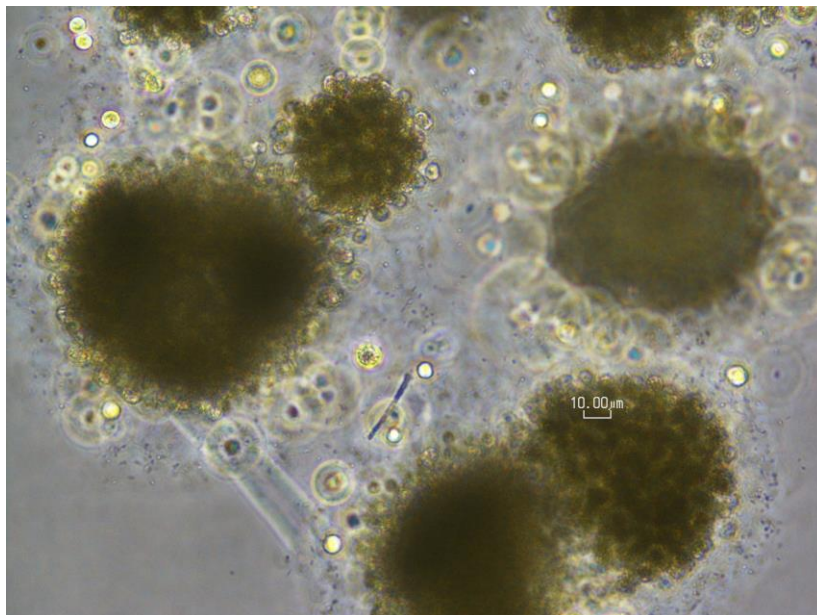
*Microcystis* sp. at 400X (**East Marina Bridge**)



*Dolichospermum* sp. at 400X (**East Marina Bridge**)

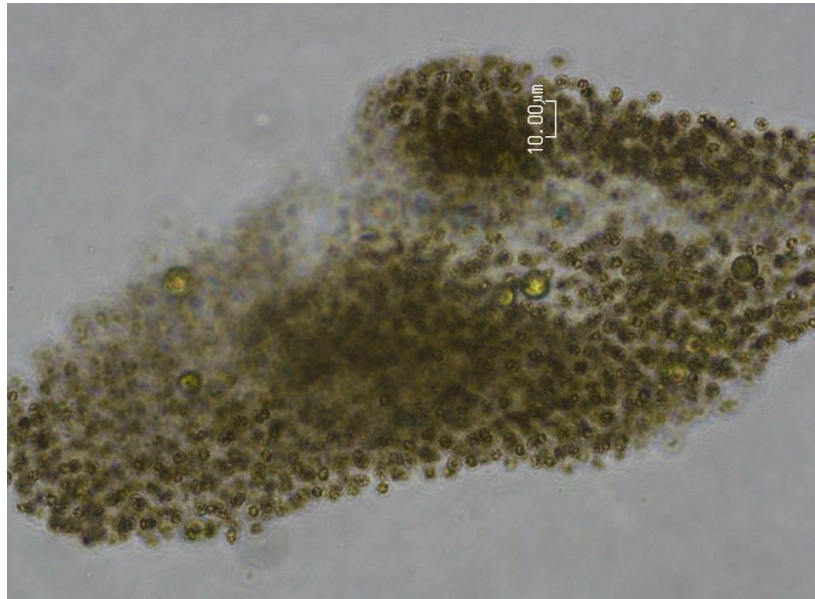


*Limnoraphis birgei* at 400X (**East Marina Bridge**)

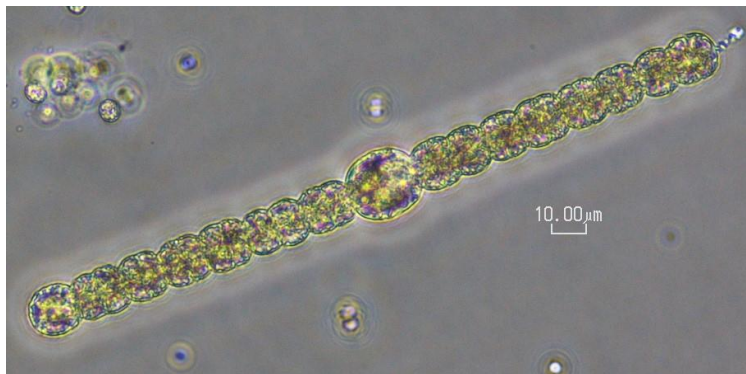


*Microcystis* sp. at 400X (**Pell Park**)

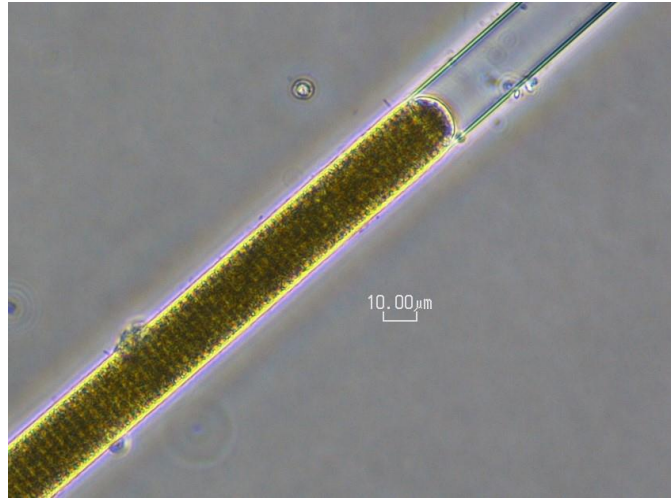




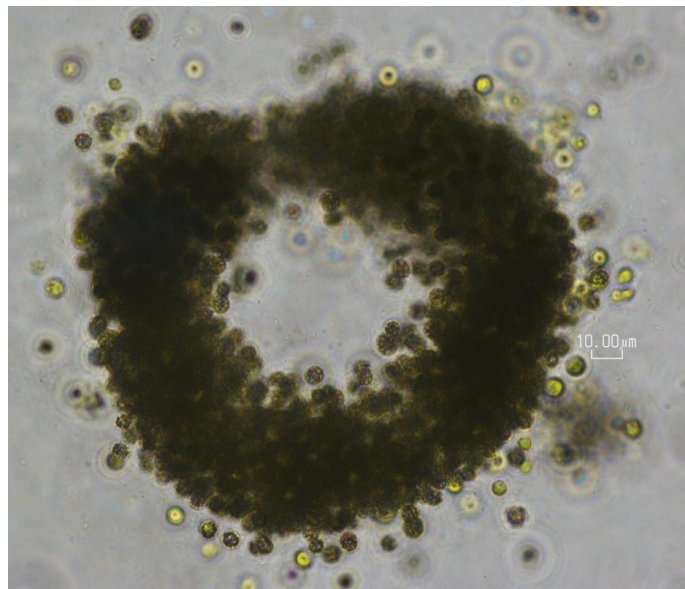
*Microcystis* sp. at 400X (**Pell Park**)



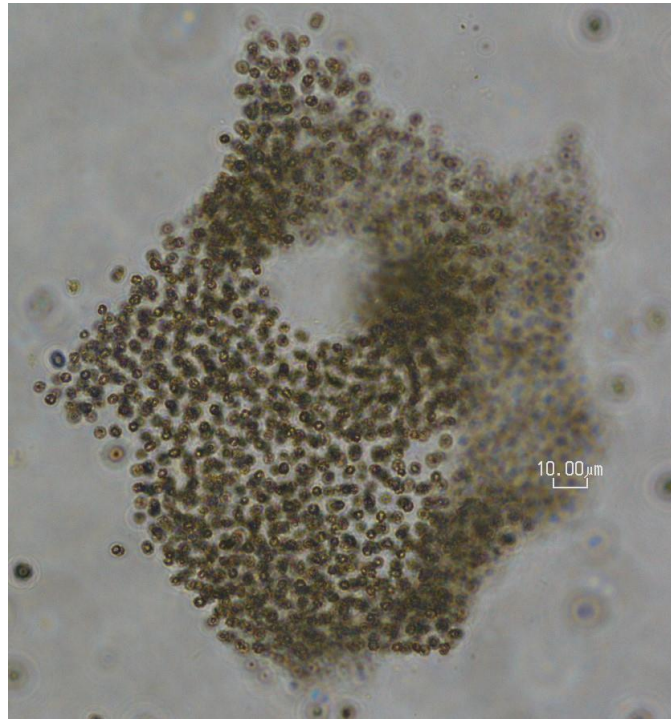
*Dolichospermum* sp. at 400X (**Pell Park**)



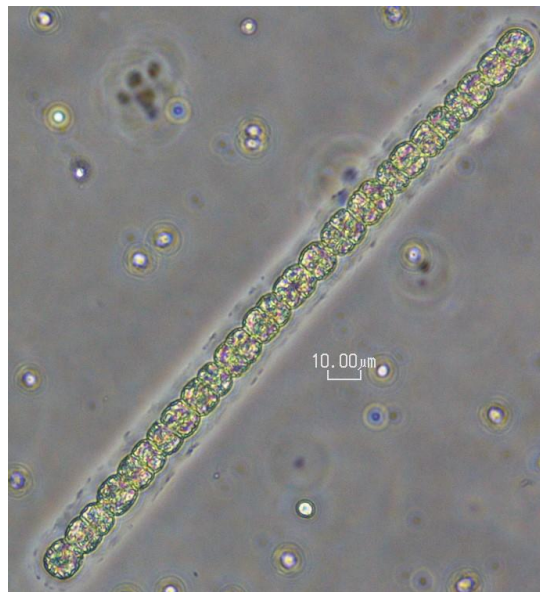
*Limnoraphis birgei* at 400X (**Pell Park**)



*Microcystis* sp. at 400X (**East Marina Bridge Scum**)



*Microcystis* sp. at 400X (East Marina Bridge Scum)



*Dolichospermum* sp. at 400X (East Marina Bridge Scum)





*Limnoraphis birgei* at 400X (East Marina Bridge Scum)

Submitted by: Sarah Fuller

Sarah Fuller

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