

**Microcystin, Cylindrospermopsin, & Saxitoxin Report**  
**Project: Utah DEP – Division of Water Quality**

<u>Sample ID</u>	<u>Site</u>	<u>Date Collected</u>
4917310	Utah Lake 0.5 mi W of Geneva Discharge #15A	7/26/16
4917520	Utah Lake 2 mi E of Saratoga Springs #12	7/26/16
4917370	Utah Lake 1 mi E of Pelican Point	7/26/16
4917500	Utah Lake 3 mi WNW of Lincoln Beach	7/26/16
4917770	Utah Lake Outside Entrance to Provo Bay	7/26/16
NA	Utah Lake State Park Marina – Dock	7/26/16
4917390	Utah Lake 1 mi W of Provo Harbor	7/26/16

**Toxins** – microcystins/nodularins (MCs), cylindrospermopsin (CYN), saxitoxin (STX),

**Sample Prep**

The samples were ultra-sonicated to lyse cells and release toxins. Duplicate samples were spiked (lab fortified matrices, LFM) with CYN (1.0 µg/L) and STX (0.2 µg/L) and MC-LR (1.0 µg/L).

**Analytical Methodology****MC**

The Adda (Abraxis) microcystins enzyme linked immunosorbent assay (ELISA) was utilized for the quantitative and sensitive congener-independent detection of MCs. The current assay is sensitive to down to a LOD/LOQ of 0.15 µg/L for total MCs. The average recovery of a laboratory fortified blank (LFB) spiked with 1.0 µg/L MCLR was 96%.

**CYN**

A cylindrospermopsin ELISA (Abraxis) was utilized for the quantitative detection of CYN. The current assay is sensitive down to a LOD/LOQ limit of 0.10 µg/L for CYN. The average LFB recovery was 101%.

**STX**

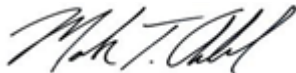
A saxitoxin enzyme linked immunosorbent assay (ELISA) was utilized for the quantitative detection of STX. The current assay is sensitive down to a LOD/LOQ limit of 0.05 µg/L STX. The average LFB recovery was 100%.

**Summary of Results**

<u>Sample</u>	<u>MC levels</u> (µg/L)	<u>CYN levels</u> (µg/L)	<u>STX levels</u> (µg/L)
4917310	ND	ND	ND
4917520	ND	ND	ND
4917370	ND	ND	ND
4917500	ND	ND	ND
4917770	ND	ND	ND
Utah Lake State Park Marina – Dock	ND	ND	ND
4917390	ND	ND	ND
<i>Detection Limits (µg/L)</i>	<i>0.15</i>	<i>0.10</i>	<i>0.05</i>

ND = Not detected above the detection limit

Submitted by:



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Date:

7/29/16