Microcystin, Cylindrospermopsin, & Saxitoxin Report

Project: Utah DEP – Division of Water Quality

Sample ID	Site	Date Collected
4917345	Lindon Marina	7/26/16
4917512	American Fork Marina	7/26/16
4917486	Saratoga Private	7/26/16
4917485	Saratoga Public	7/26/16
4917716	Lincoln Beach Harbor	7/26/16
4917715	Sandy Beach	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, LFMs) with CYN (1 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 laboratory fortified blanks (LFB) spiked with 1.0 µg/L MCLR was 101%.

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

Sample	MC levels (µg/L)	CYN levels (µg/L)	STX levels (µg/L)
4917345	**ND**	**ND**	**ND**
4917512	**ND**	**ND**	**ND**
4917486	**ND**	**ND**	**ND**
4917485	**ND**	**ND**	**ND**
4917716	**0.41**	**ND**	**ND**
4917715	**0.48**	**ND**	**ND**
Detection Limits (µg/L)	*0.15*	*0.10*	*0.05*

ND = Not detected above the detection limit

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