

Microcystin Report

Project: Northeast Aquatic Research

Sample Identification

Lower Bolton

Sample Collection Date

7/7/14

Toxins –microcystins (MC)**Sample Prep**

The sample was ultra-sonicated to lyse cells and release toxins.

Analytical Methodology

A microcystins enzyme linked immunosorbent assay (ELISA) was utilized for the quantitative and sensitive congener-independent detection of MCs. The current assay is sensitive down to a LOD/LOQ of 0.15 µg/L for total MCs. The average lab fortified blank (LFB) recovery, spiked with 1 µg/L MCLR, was 82%.

Summary of Results

<u>Sample</u>	<u>MC Levels</u> (µg/L)
Lower Bolton	0.46

LOD/LOQ = 0.15 µg/L

Microcystins were detected in the Lower Bolton sample at low levels (0.46 ppb). Although not requested, cylindrospermopsin and saxitoxin ELISAs were used to screen for other toxins associated with *Dolichospermum* spp. Saxitoxin was not detected above 0.05 ppb and cylindrospermopsin was not detected above 0.10 ppb.

Submitted by:



Mark T. Aubel, Ph.D.

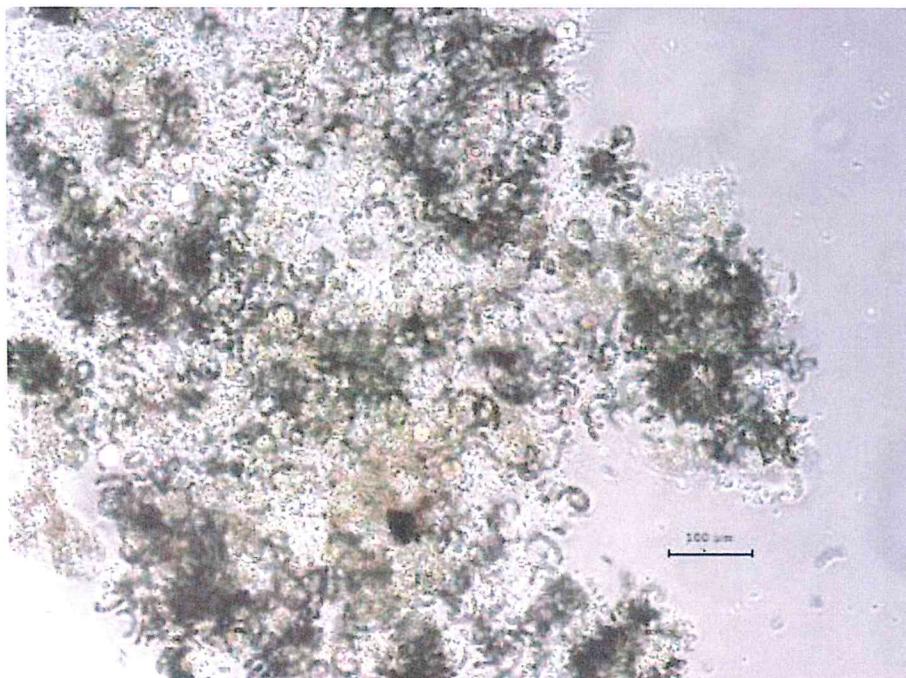
Date:

7/9/14



Bolton Lake

Potentially toxic (PTOX) cyanobacteria observed included *Dolichospermum* sp. (previously classified as *Anabaena*). *Dolichospermum* spp. are potential microcystin, cylindrospermopsin, anatoxin-a and paralytic shellfish toxin (saxitoxins) producers.



Dolichospermum sp. (previously known as *Anabaena* sp.) 100X (scale bar = 100μm)



Dolichospermum sp. (previously known as *Anabaena* sp.) 400X (scale bar = 10μm)

GreenWater Laboratories
205 Zeagler Drive
Suite 302
Palatka FL 32177
Ph: (386) 328-0882
Fax: (386) 328-9646

Contact:
markaubel@greenwaterlab.com
amandafoess@greenwaterlab.com



Northeast Aquatic Research						
MICROCYSTIN RESULTS						
Sample ID/ Date Collected	Initial Conc. Factor	Dilution Ratio	Assay Value, ug/L	Final Dilution Factor	Avg. LFB Recovery(%)	Avg. LFM Concentration (ug/L)
Lower Bolton - Cove Grab 7/7/2014	1x none	1x none	0.44 0.47	1 1	82% —	0.44 0.47
ND = Not detected above LOD/LOQ LOD/LOQ = 0.15 ug/L LFB = 1.0 ug/L MCLR LFM = 1.0 ug/L MCLR						

Amanda Foss
Amanda Foss, M.S.
7/9/2014

Submitted by:
Amanda Foss, M.S.
Date:

Submitted to:
George Knoecklein
Northeast Aquatic Research
74 Higgins Highway
Mansfield CT, 06250
(860) 486-3179
knoecklein@sbcglobal.net

GreenWater Laboratories
205 Zeagler Drive
Suite 302
Palatka FL 32177
Ph: (386) 328-0882
Fax: (386) 328-9646

Contact:
markaubel@greenwaterlab.com
amandafoess@greenwaterlab.com

GreenWater
Cyanotoxins
laboratories

Cyano
LAB

Northeast Aquatic Research						
SAXITOXIN RESULTS						
Sample ID/ Date Collected	Initial Conc. Factor	Dilution Ratio	Assay Value, ug/L	Final Dilution Factor	Avg. LFB Recovery(%)	Avg. LFM Concentration (ug/L)
Lower Bolton - Cove Grab 7/7/2014	1x 1x	none none	0.00 0.00	1 1	85% 85%	<0.05 <0.05
ND = Not detected above LOD/LOQ LOD/LOQ = 0.05 ug/L LFB = 0.20 ug/L STX LFM = 0.20 ug/L STX						

Amanda Foss
Amanda Foss, M.S.
7/9/2014

Submitted by:
Amanda Foss, M.S.
Date:
7/9/2014

Submitted to:
George Knoecklein
Northeast Aquatic Research
74 Higgins Highway
Mansfield CT, 06250
(860) 456-3179
knoecklein@sbcglobal.net

GreenWater Laboratories
205 Zeagler Drive
Suite 302
Palatka FL 32177
Ph: (386) 328-0882
Fax: (386) 328-9646

Contact:
markaubel@greenwaterlab.com
amandafoss@greenwaterlab.com

GreenWater
laboratories

Cyan
LAB

Northeast Aquatic Research						
CYLINDROSPERMOPSIIN RESULTS						
Sample ID/ Date Collected	Initial Conc. Factor	Dilution Ratio	Assay Value, ug/L	Final Dilution Factor	Avg. LFB Recovery(%)	Final Concentration (ug/L)
Lower Bolton - Cove Grab 7/7/2014	1x 1x	none none	0.09 0.09	1 1	102% 102%	<0.10 <0.10
ND = Not detected above LOD/LOQ LOD/LOQ = 0.10 ug/L LFB = 1.0 ug/L CYN LFM = 1.0 ug/L CYN						ND

Amanda Foss
Amanda Foss, M.S.
7/9/2014

Submitted by:
Amanda Foss, M.S.
Date:
7/9/2014

George Knoecklein
Northeast Aquatic Research
74 Higgins Highway
Mansfield CT, 06250
(860) 456-3179
knoecklein@sbcglobal.net