

Laboratory Services Branch

Direction des services de laboratoire

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Certificate of Analysis

Workorder: 1-1B7A7M (3214)

Chain: 1-1B5L1K

Workorder Description:

Client: Eastern Region - Kingston District Office
Profile: KDEC - Surface Water
Line Item: Watershed Studies

Report To: Mr. Trevor Dagilis
DWECD-ER-Kingston Dist.
Office
Unit 3, 1259 Gardiners Rd
Kingston, ON K7P 3J6
Canada

Date Reported: 10/22/2021 10:46:33 AM

Date Approved: 10/22/2021 10:02:08 AM

The results relate only to the items tested as received.

Customer service feedback for this test report and/or other services by LaSB may be provided by calling the HelpDesk at 416-235-6030, the Customer Service Manager at 416-235-5831, or through LabOnline.

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Laboratory Services Branch is accredited to ISO/IEC 17025 by the Canadian Association for Laboratory Accreditation Inc. (CALA) for specific tests listed on the scope of accreditation. Accreditation is matrix- and parameter-specific. A complete listing of accredited test methods, matrices, and parameters is available from www.cala.ca. The tests on this report may not necessarily be included in the scope of accreditation.

Calculated results for IBC3196 (Ion Balance) and DTKN3424 (Total Kjeldahl Nitrogen) are provided in the test report only if all required parameters were requested/measured.

Approved for release by:



Jennifer Koene

Certificate of Analysis

Workorder: 1-1B7A7M (3214)

Chain: 1-1B5L1K

Sample Summary

Lab ID	Field ID	Matrix	Method	Tests Ordered	Container Condition	Sampling Date & Time	Received Date & Time	Sampled By
3214001	1-1B8658	WO	E3450, E3469, E3568, E3573	ALGAEID, ANAA3568, MCYST3450, MCYST3469		10/07/2021 11:00	10/08/2021 08:46	

Certificate of Analysis

Workorder: 1-1B7A7M (3214)

Chain: 1-1B5L1K

Method: E3450

Lab ID: 3214001	Date Collected: 10/7/2021 11:00:00 AM
Field ID: 1-1B8658	

Analyte	Result	Rmk	RDL	Units	Analyzed
Algal & Aesthetic Factors					
Anatoxin-a	6.2		0.50	µg/L	10/18/2021
3-Desmethyl-microcystin-LR	<0.50		0.50	µg/L	10/18/2021
3-Desmethyl-microcystin-RR	<0.50		0.50	µg/L	10/18/2021
Microcystin-HiIR	<0.50		0.50	µg/L	10/18/2021
Microcystin-HtYR	<0.50		0.50	µg/L	10/18/2021
Microcystin-LA	18		0.50	µg/L	10/18/2021
Microcystin-LF	<0.50		0.50	µg/L	10/18/2021
Microcystin-LR	7.0		0.50	µg/L	10/18/2021
Microcystin-LW	<0.50		0.50	µg/L	10/18/2021
Microcystin-LY	0.67		0.50	µg/L	10/18/2021
Microcystin-RR	<0.50		0.50	µg/L	10/18/2021
Microcystin-WR	<0.50		0.50	µg/L	10/18/2021
Microcystin-YR	<0.50		0.50	µg/L	10/18/2021

Certificate of Analysis



Workorder: 1-1B7A7M (3214)

Chain: 1-1B5L1K

Method: E3568

Lab ID: 3214001	Date Collected: 10/7/2021 11:00:00 AM
Field ID: 1-1B8658	

Analyte	Result	Rmk	RDL	Units	Analyzed
Anatoxin-A	360		0.20	µg/L	10/14/2021

Certificate of Analysis



Workorder: 1-1B7A7M (3214)

Chain: 1-1B5L1K

Method: E3573

Lab ID: 3214001

Field ID: 1-1B8658

Date Collected: 10/7/2021 11:00:00 AM

Analyte	Result	Remark	RDL	Units	Analyzed
Algal mat	No			N/A	10/18/2021
Cyano bloom	Yes			N/A	10/18/2021
Algae bloom	Yes			N/A	10/18/2021
1	Dolichospermum (formerly Anabaena)			N/A	10/18/2021
2	Microcystis			N/A	10/18/2021
3	Synedra			N/A	10/18/2021
4	Asterionella			N/A	10/18/2021
5	Cymbella			N/A	10/18/2021
6	Bacteria			N/A	10/18/2021
7	unidentified organic materials			N/A	10/18/2021
8	Debris			N/A	10/18/2021

Certificate of Analysis

Workorder: 1-1B7A7M (3214)

Chain: 1-1B5L1K

Method: E3469

Lab ID: 3214001	Date Collected: 10/7/2021 11:00:00 AM
Field ID: 1-1B8658	

Analyte	Result	Rmk	RDL	Units	Analyzed
Total Microcystins	46.72		0.10	µg/L	10/14/2021

Certificate of Analysis

Workorder: 1-1B7A7M (3214)

Chain: 1-1B5L1K

Workorder Summary

Sample Comments

3214001 (1-1B8658) - Production sample

Microscopic examination of the contents of the sample observed abundant algal cells indicative of an algal bloom. The most abundant algae present in the bloom included blue-green algae (also called cyanobacteria), this type of algae has the potential to produce toxins. The sample also included a bloom of a diatom (Synedra). However, freshwater diatoms are not known to produce toxins. This determination was based on the amount of algal material present in the submitted sample.

Method Summary

E3450

THE DETERMINATION OF MICROCYSTINS AND ANATOXIN-A IN WATER BY 2DLC-ESI-HRQToFMS RESOLUTION MASS SPECTROMETRY

E3469

Method E3469: The Screening and Semi-Quantitative Analysis of Water Samples for Microcystins by Enzyme-Linked Immunosorbent Assay (ELISA)

E3568

Method E3568: Quantitative Analysis of Water Samples for Anatoxin-a by Enzyme-Linked Immunosorbent Assay (ELISA)

E3573

Screening of algae bloom occurrence by identification of algae cells with microscopic methods

Task Comments

3214001 - 195870 - E3450 Microcys/Anatox in H2O - TOXI/1351

RESULT OBTAINED ON DILUTED SAMPLE

Additional Information

Sample 3214001 - Algae ID Additional Info.

Algae condition	Extremely deteriorated
Municipality	Rideau Lakes
Preservative type	None
Preserved Duplicate	N
Region	Eastern
Water body	Bass Lake

Certificate of Analysis

Workorder: 1-1B7A7M (3214)

Chain: 1-1B5L1K

QC Results

QC Batch: MICI/2143
Preparation Method: E3469
Associated Lab IDs: 3214001

Analysis Method: E3469

Method Blank(39583)

Parameter	Result	Units	RDL	Qual
Total Microcystins	<0.10	µg/L	0.10	

Certificate of Analysis

Workorder: 1-1B7A7M (3214)

Chain: 1-1B5L1K

QC Results

QC Batch: MICI/2147
Preparation Method: E3568
Associated Lab IDs: 3214001

Analysis Method: E3568

Method Blank(39709)

Parameter	Result	Units	RDL	Qual
Anatoxin-A	<0.20	µg/L	0.20	

Certificate of Analysis

Workorder: 1-1B7A7M (3214)

Chain: 1-1B5L1K

QC Results

QC Batch: TOXI/1351
Preparation Method: E3450
Associated Lab IDs: 3214001

Analysis Method: E3450

Method Blank(40572)

Parameter	Result	Units	RDL	Qual
Anatoxin-a	<0.050	µg/L	0.050	
3-Desmethyl-microcystin-RR	<0.050	µg/L	0.050	
Microcystin-RR	<0.050	µg/L	0.050	
Microcystin-YR	<0.050	µg/L	0.050	
Microcystin-HtYR	<0.050	µg/L	0.050	
3-Desmethyl-microcystin-LR	<0.050	µg/L	0.050	
Microcystin-LR	<0.050	µg/L	0.050	
Microcystin-HilR	<0.050	µg/L	0.050	
Microcystin-WR	<0.050	µg/L	0.050	
Microcystin-LA	<0.050	µg/L	0.050	
Microcystin-LY	<0.050	µg/L	0.050	
Microcystin-LW	<0.050	µg/L	0.050	
Microcystin-LF	<0.050	µg/L	0.050	

Certificate of Analysis



Workorder: 1-1B7A7M (3214)

Chain: 1-1B5L1K