

Chemical Analysis Report

WQAP-2022-07-15-01

Florida Department of Environmental Protection
Central Laboratory
2600 Blair Stone Road
Tallahassee, FL 32399-2400
DOH Accreditation E31780

Event Description: **Algal Bloom Response - CEROC**
Request ID: **RQ-2022-07-11-12**
Customer: **WQAP**
Project ID: **BLOOM-RESP**

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Date Certified: 01-AUG-2022 10:03



Case Narrative

Unless otherwise noted, all samples included in this report were received in accordance with protocols referenced in Chapter 62-160, Florida Administrative Code (F.A.C.). Results published in this report pertain only to the samples as submitted to, and received by the laboratory. All times in this report are adjusted to the applicable Eastern Time Zone (EST or EDT).

Results for the following analytical groups are included in this report: Nutrients and Pesticides.

Scientific notation may be used in reporting very large or small values. Values reported using scientific notation will take the form of the following example: 1.3E+03, which is equivalent to 1.3×10^3 or 1300.

Unless otherwise noted, analytical values for soil and sediment samples are reported on a dry weight basis, and analytical values for waste and tissue samples are reported on a wet weight basis.

Results for TNI accredited tests met requirements established by The NELAC Institute. A double asterisk (**) is used to indicate an analyte/matrix/method for which the laboratory is not TNI accredited by the Florida Department of Health Environmental Laboratory Certification Program or where accreditation for that field of testing is not applicable.

Any significant anomalies or deviations from established protocols are documented in Non-Conformance Reports, which, where appropriate, are included within this analytical report. Additional comments related to specific analytical tests may be included as remarks following the analytical results for each sample. Such comments and remarks are for informational purposes only and are not intended to convey judgement about the usability of the reported data.

A quality control report on the performance of the test method for the submitted samples is included. Uncertainty associated with the analytical results contained in this report can be estimated from the reported quality assurance results and from published quality control acceptance limits for each analytical test. Matrix quality control results (matrix spike recoveries and matrix sample precision) pertain only to the matrix sample tested and do not necessarily reflect test method performance for other samples.

Typical matrix quality control (QC) measurements may include matrix spike recovery, matrix spike duplicate recovery, matrix spike precision and matrix sample precision. Not all matrix QC results may be available or reportable; where they are not an explanation is provided. Typical reasons for unavailable QC results include, but are not limited to, a) insufficient matrix sample to perform some or all QC measurements; b) analyte concentration in the sample replicated was too low for a meaningful measurement of precision and c) analyte concentration in the matrix sample spiked was too high (relative to the amount of analyte spiked) for a meaningful measurement of recovery. Where matrix QC results are unavailable, other method performance metrics (e.g., LCS recovery, LCS precision, surrogate recovery) may be used to assess performance of the method. Comments explaining any missing QC measurements are not intended to convey any adverse conclusions about the quality of the reported data.

Precision is reported as relative percent difference unless otherwise noted.

Quality Control codes as defined below may be used in this report to indicate results that are associated with one or more quality control elements which did not fall within established test method criteria. Such results may be qualified as estimates using a J qualifier as required by 62-160 F.A.C. Explanations are included in the report for any results that were reported as estimates for other reasons.

QC Codes used in this report may include:

- LCS – Recovery for the batch Laboratory Control Sample (LCS) was outside existing control limits;
- MS – Recovery for the batch matrix spike (MS) was outside existing control limits;
- CCV – Recovery for a continuing calibration verification (CCV) standard was outside existing control limits;
- SUR – Recovery of a surrogate (SUR) for associated analytes was outside existing control limits;
- RPD – The precision, measured as relative percent difference (RPD), of batch replicate measurements was outside existing control limits;
- RSD – The precision, measured as relative standard deviation (RSD), of batch replicate measurements was outside existing control limits;
- SMP – Sample - used precision derived from replicate analyses of a sample;

The following data qualifiers are used, where applicable, in this report as specified in 62-160 F.A.C.

- A - Value reported is the mean of two or more determinations.
- B - Results based on colony counts outside the acceptable range.
- I - The reported value is between the laboratory method detection limit and the laboratory practical quantitation limit.
- J - Estimated value and/or the analysis did not meet established quality control criteria.
- K - Actual value is known to be less than value given.
- L - Actual value is known to be greater than value given.
- N - Presumptive evidence of presence of material.
- O - Sampled, but analysis lost or not performed.
- Q - Sample held beyond normal holding time.
- T - Value reported is less than the criterion of detection.
- U - Material was analyzed for but not detected. The reported value is the method detection limit for the sample analyzed.
- V - Analyte was detected in both sample and method blank.
- X - Too few individuals to calculate SCI value.
- Y - The laboratory analysis was from an unpreserved or improperly preserved sample. The data may not be accurate.
- Z - Colonies were too numerous to count (TNTC).

Quality control information from overflow laboratories may not be included in this report. Please refer to the associated report from the overflow laboratory for additional information.

Sample Location: Lake Ivanhoe - Center of Eastern Lobe

Collection Date/Time: 07/14/2022 14:09

Field ID: HABCE0118_Lakelvanhoe1

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2341910	EPA 8321B	Anatoxin-a	0.25	U	ug/L	P416703	
		Cylindrospermopsin	0.10	U	ug/L	P416701	
		Desmethyl microcystin LR	0.25	U	ug/L	P416701	
		Microcystin HILR	0.25	U	ug/L	P416701	
		Microcystin HtyR	0.25	U	ug/L	P416701	
		Microcystin LA	0.10	U	ug/L	P416701	
		Microcystin LF	0.10	U	ug/L	P416701	
		Microcystin LR	0.25	U	ug/L	P416701	
		Microcystin LW	0.25	U	ug/L	P416701	
		Microcystin LY	0.10	U	ug/L	P416701	
		Microcystin RR	0.10	U	ug/L	P416701	
		Microcystin WR	0.50	U	ug/L	P416701	
		Microcystin YR	0.25	U	ug/L	P416701	
		Nodularin-R	0.10	U	ug/L	P416701	
2341917	EPA 350.1 Rev. 2.0	Ammonia-N	0.004	I	mg N/L	P417312	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.57		mg N/L	P416989	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P416971	
	EPA 365.1 Rev. 2.0	Total-P	0.012		mg P/L	P416886	
2341921	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P416744	

Sample Location: Lake Sue - Lakeshore Dr. West Lobe

Collection Date/Time: 07/14/2022 14:51

Field ID: HABCE0110_LakeSue1

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2341908	EPA 8321B	Anatoxin-a	0.25	U	ug/L	P416703	
		Cylindrospermopsin	0.27	I	ug/L	P416701	
		Desmethyl microcystin LR	0.25	U	ug/L	P416701	
		Microcystin HILR	0.25	U	ug/L	P416701	
		Microcystin HtyR	0.25	U	ug/L	P416701	
		Microcystin LA	0.10	U	ug/L	P416701	
		Microcystin LF	0.10	U	ug/L	P416701	
		Microcystin LR	0.25	U	ug/L	P416701	
		Microcystin LW	0.25	U	ug/L	P416701	
		Microcystin LY	0.10	U	ug/L	P416701	
		Microcystin RR	0.10	U	ug/L	P416701	
		Microcystin WR	0.50	U	ug/L	P416701	
		Microcystin YR	0.25	U	ug/L	P416701	
		Nodularin-R	0.10	U	ug/L	P416701	
2341915	EPA 350.1 Rev. 2.0	Ammonia-N	0.004	I	mg N/L	P417312	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.74		mg N/L	P416989	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P416971	
	EPA 365.1 Rev. 2.0	Total-P	0.019		mg P/L	P416886	
2341919	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P416744	

Sample Location: Fish Lake - Sexton Park

Collection Date/Time: 07/14/2022 09:15

Field ID: HABCE0132_FishLake

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2341911	EPA 8321B	Anatoxin-a	0.25	U	ug/L	P416703	
		Cylindrospermopsin	0.16	I	ug/L	P416701	
		Desmethyl microcystin LR	0.25	U	ug/L	P416701	
		Microcystin HIR	0.25	U	ug/L	P416701	
		Microcystin HtyR	0.25	U	ug/L	P416701	
		Microcystin LA	0.10	U	ug/L	P416701	
		Microcystin LF	0.10	U	ug/L	P416701	
		Microcystin LR	0.25	U	ug/L	P416701	
		Microcystin LW	0.25	U	ug/L	P416701	
		Microcystin LY	0.10	U	ug/L	P416701	
		Microcystin RR	0.10	U	ug/L	P416701	
		Microcystin WR	0.50	U	ug/L	P416701	
		Microcystin YR	0.25	U	ug/L	P416701	
		Nodularin-R	0.10	U	ug/L	P416701	
2341918	EPA 350.1 Rev. 2.0	Ammonia-N	0.032		mg N/L	P417312	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.3		mg N/L	P416987	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.014		mg N/L	P416972	
	EPA 365.1 Rev. 2.0	Total-P	0.076		mg P/L	P416886	
2341922	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P416744	

Ref. Method and Comment:

EPA 351.2 Rev. 2.0: Batch matrix spike recoveries are unavailable because of high analyte concentration in the QC sample.

Sample Location: Lake Mann - McQueen Park

Collection Date/Time: 07/14/2022 14:42

Field ID: HABCE0112_LakeMann

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2341909	EPA 8321B	Anatoxin-a	0.25	U	ug/L	P416703	
		Cylindrospermopsin	0.66		ug/L	P416701	
		Desmethyl microcystin LR	0.25	U	ug/L	P416701	
		Microcystin HILR	0.25	U	ug/L	P416701	
		Microcystin HtyR	0.25	U	ug/L	P416701	
		Microcystin LA	0.10	U	ug/L	P416701	
		Microcystin LF	0.10	U	ug/L	P416701	
		Microcystin LR	0.25	U	ug/L	P416701	
		Microcystin LW	0.25	U	ug/L	P416701	
		Microcystin LY	0.10	U	ug/L	P416701	
		Microcystin RR	0.10	U	ug/L	P416701	
		Microcystin WR	0.50	U	ug/L	P416701	
		Microcystin YR	0.25	U	ug/L	P416701	
		Nodularin-R	0.10	U	ug/L	P416701	
2341916	EPA 350.1 Rev. 2.0	Ammonia-N	0.012		mg N/L	P417312	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.0		mg N/L	P416989	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P416971	
	EPA 365.1 Rev. 2.0	Total-P	0.020		mg P/L	P416886	
2341920	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P416744	

Quality Assurance Report Method Blank Results

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P417312

Component	Result	Code	Units
Ammonia-N	0.002	U	mg N/L

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P416987

Component	Result	Code	Units
Kjeldahl Nitrogen	0.080	U	mg N/L

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P416989

Component	Result	Code	Units
Kjeldahl Nitrogen	0.080	U	mg N/L

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P416971

Component	Result	Code	Units
NO2NO3-N	0.004	U	mg N/L

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P416972

Component	Result	Code	Units
NO2NO3-N	0.004	U	mg N/L

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P416886

Component	Result	Code	Units
Total-P	0.002	U	mg P/L

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P416744

Component	Result	Code	Units
O-Phosphate-P	0.004	U	mg P/L

Reference Method: EPA 8321B
Batch ID: P416701

Component	Result	Code	Units
Cylindrospermopsin	0.10	U	ug/L
Desmethyl microcystin LR	0.25	U	ug/L
Microcystin HIR	0.25	U	ug/L
Microcystin HtyR	0.25	U	ug/L
Microcystin LA	0.10	U	ug/L
Microcystin LF	0.10	U	ug/L
Microcystin LR	0.25	U	ug/L
Microcystin LW	0.25	U	ug/L
Microcystin LY	0.10	U	ug/L
Microcystin RR	0.10	U	ug/L

Quality Assurance Report

Method Blank Results

Reference Method: EPA 8321B
Batch ID: P416701

Component	Result	Code	Units
Microcystin WR	0.50	U	ug/L
Microcystin YR	0.25	U	ug/L
Nodularin-R	0.10	U	ug/L

Reference Method: EPA 8321B
Batch ID: P416703

Component	Result	Code	Units
Anatoxin-a	0.25	U	ug/L

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P417312

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Ammonia-N	98.2		P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P416987

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Kjeldahl Nitrogen	102		P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P416989

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Kjeldahl Nitrogen	107		P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P416971

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
NO2NO3-N	98.0		P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P416972

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
NO2NO3-N	94.5		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P416886

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total-P	101		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P416744

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
O-Phosphate-P	101		P	90 - 110

Reference Method: EPA 8321B
Batch ID: P416701

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Cylindrospermopsin	118		P	40 - 150
Desmethyl microcystin LR	93.9		P	40 - 150
Microcystin HIR	96.7		P	40 - 150
Microcystin HtyR	106		P	40 - 150
Microcystin LA	113		P	40 - 150
Microcystin LF	104		P	40 - 150
Microcystin LR	91.7		P	40 - 150
Microcystin LW	96.3		P	40 - 150
Microcystin LY	112		P	40 - 150
Microcystin RR	90.2		P	40 - 150

Quality Assurance Report

Laboratory Control Sample Accuracy

Reference Method: EPA 8321B
Batch ID: P416701

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Microcystin WR	102		P	40 - 150
Microcystin YR	122		P	40 - 150
Nodularin-R	93.2		P	40 - 150

Reference Method: EPA 8321B
Batch ID: P416703

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Anatoxin-a	92.6		P	40 - 150

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P417312

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2341915	Ammonia-N	97.6	98.8	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P416989

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2342258	Kjeldahl Nitrogen	108	105	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P416971

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2341915	NO2NO3-N	99.5	98.0	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P416972

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2341918	NO2NO3-N	96.1	96.1	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P416886

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2341916	Total-P	99.0	103	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P416744

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2341827	O-Phosphate-P	98.4	97.9	P/P	90 - 110

Reference Method: EPA 8321B
Batch ID: P416701

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2341881	Cylindrospermopsin	118	121	P/P	40 - 150
2341881	Desmethyl microcystin LR	105	103	P/P	40 - 150
2341881	Microcystin H1LR	108	105	P/P	40 - 150
2341881	Microcystin HtyR	117	113	P/P	40 - 150
2341881	Microcystin LA	117	110	P/P	40 - 150
2341881	Microcystin LF	106	104	P/P	40 - 150
2341881	Microcystin LR	101	99.4	P/P	40 - 150
2341881	Microcystin LW	114	108	P/P	40 - 150
2341881	Microcystin LY	112	106	P/P	40 - 150
2341881	Microcystin RR	96.3	94.1	P/P	40 - 150
2341881	Microcystin WR	110	110	P/P	40 - 150
2341881	Microcystin YR	132	127	P/P	40 - 150
2341881	Nodularin-R	102	99.8	P/P	40 - 150

Quality Assurance Report

Matrix Spike Accuracy

Reference Method: EPA 8321B
Batch ID: P416703

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2341881	Anatoxin-a	114	103	P/P	40 - 150

Quality Assurance Report Precision

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P417312

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2341915	Ammonia-N	1.12	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P416987

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2341918	Kjeldahl Nitrogen	4.90	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P416989

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2342258	Kjeldahl Nitrogen	1.79	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P416971

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2341915	NO2NO3-N	1.52	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P416972

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2341918	NO2NO3-N	0.0	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P416886

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2341916	Total-P	3.77	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P416744

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2341827	O-Phosphate-P	0.383	Spike	P	0 - 20

Reference Method: EPA 8321B
Batch ID: P416701

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2341881	Cylindrospermopsin	2.45	Spike	P	0 - 30
2341881	Desmethyl microcystin LR	1.60	Spike	P	0 - 30

Quality Assurance Report Precision

Reference Method: EPA 8321B
Batch ID: P416701

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2341881	Microcystin HllR	1.92	Spike	P	0 - 30
2341881	Microcystin HtyR	2.75	Spike	P	0 - 30
2341881	Microcystin LA	6.87	Spike	P	0 - 30
2341881	Microcystin LF	2.43	Spike	P	0 - 30
2341881	Microcystin LR	2.01	Spike	P	0 - 30
2341881	Microcystin LW	6.11	Spike	P	0 - 30
2341881	Microcystin LY	5.51	Spike	P	0 - 30
2341881	Microcystin RR	2.34	Spike	P	0 - 30
2341881	Microcystin WR	0.524	Spike	P	0 - 30
2341881	Microcystin YR	4.14	Spike	P	0 - 30
2341881	Nodularin-R	1.83	Spike	P	0 - 30

Reference Method: EPA 8321B
Batch ID: P416703

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2341881	Anatoxin-a	10.3	Spike	P	0 - 30

* Sample, spike and/or laboratory control sample precision (LCS) is reported.

Quality Assurance Report Surrogates

Lab Sample ID: 2341908

Field Sample ID: HABCE0110_LakeSue1

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	Microcystin LR ethyl-d5	102	P	30 - 160
EPA 8321B	Neosaxitoxin-15N7	98.8	P	30 - 160

Lab Sample ID: 2341909

Field Sample ID: HABCE0112_LakeMann

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	Microcystin LR ethyl-d5	98.4	P	30 - 160
EPA 8321B	Neosaxitoxin-15N7	89.0	P	30 - 160

Lab Sample ID: 2341910

Field Sample ID: HABCE0118_LakeIvanhoe1

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	Microcystin LR ethyl-d5	98.7	P	30 - 160
EPA 8321B	Neosaxitoxin-15N7	101	P	30 - 160

Lab Sample ID: 2341911

Field Sample ID: HABCE0132_FishLake

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	Microcystin LR ethyl-d5	104	P	30 - 160
EPA 8321B	Neosaxitoxin-15N7	85.9	P	30 - 160

Quality Assurance Report Calibration Verification

Reference Method: EPA 8321B

Run ID: A113512

Included Lab Sample IDs: 2341908, 2341909, 2341910, 2341911

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Anatoxin-a	95.1	93.3	P/P	50 - 160

Reference Method: EPA 8321B

Run ID: A113513

Included Lab Sample IDs: 2341908, 2341909, 2341910, 2341911

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Cylindrospermopsin	110	111	P/P	60 - 160
Desmethyl microcystin LR	88.8	90.3	P/P	60 - 160
Microcystin H1R	92.7	88.4	P/P	60 - 160
Microcystin HtyR	100	98.6	P/P	60 - 160
Microcystin LA	104	106	P/P	50 - 160
Microcystin LF	80.6	74.0	P/P	60 - 160
Microcystin LR	88.1	84.3	P/P	60 - 160
Microcystin LW	82.9	74.5	P/P	60 - 160
Microcystin LY	101	96.2	P/P	60 - 160
Microcystin RR	85.4	84.1	P/P	60 - 160
Microcystin WR	93.2	91.4	P/P	60 - 160
Microcystin YR	119	110	P/P	60 - 160
Nodularin-R	88.8	86.3	P/P	60 - 160

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Run ID: A113537

Included Lab Sample IDs: 2341919, 2341920, 2341921, 2341922

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	100	102	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A113636

Included Lab Sample IDs: 2341915, 2341916, 2341917, 2341918

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
NO2NO3-N	98.0	98.0	P/P	90 - 110
NO2NO3-N	99.0	98.0	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A113659

Included Lab Sample IDs: 2341918

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	98.0	99.5	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A113693

Included Lab Sample IDs: 2341915, 2341916, 2341917

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	100	100	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A113704

Included Lab Sample IDs: 2341918

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	96.9	96.7	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A113720

Included Lab Sample IDs: 2341915, 2341916, 2341917

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	100	98.1	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A113763

Included Lab Sample IDs: 2341915, 2341916, 2341917, 2341918

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	99.6	101	P/P	90 - 110

* Pass/Fail determinations are made for each bracketing calibration verification check.

Control limits for initial calibration checks may be different from those for continuing checks, depending on method requirements.

Where they are different, both control limits are provided.

Quality Assurance Report Summary

Ref. Method	Analyte	LCS % Recovery	MS % Recovery		LCS	Precision	MS
						SMP	
EPA 350.1 Rev. 2.0	Ammonia-N	98.2	97.6	98.8			1.12
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	102					4.90
	Kjeldahl Nitrogen	107	108	105			1.79
EPA 353.2 Rev. 2.0	NO2NO3-N	98.0	99.5	98.0			1.52
	NO2NO3-N	94.5	96.1	96.1			0.0
EPA 365.1 Rev. 2.0	Total-P	101	99.0	103			3.77
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	101	98.4	97.9			0.383
EPA 8321B	Anatoxin-a	92.6	114	103			10.3
	Cylindrospermopsin	118	118	121			2.45
	Desmethyl microcystin LR	93.9	105	103			1.60
	Microcystin HiLR	96.7	108	105			1.92
	Microcystin HtyR	106	117	113			2.75
	Microcystin LA	113	117	110			6.87
	Microcystin LF	104	106	104			2.43
	Microcystin LR	91.7	101	99.4			2.01
	Microcystin LW	96.3	114	108			6.11
	Microcystin LY	112	112	106			5.51
	Microcystin RR	90.2	96.3	94.1			2.34
	Microcystin WR	102	110	110			0.524
	Microcystin YR	122	132	127			4.14
	Nodularin-R	93.2	102	99.8			1.83

Reference Method Descriptions

Method	Description	Associated Samples
EPA 350.1 Rev. 2.0	Ammonia in aqueous matrices as mg N/L	2341915, 2341916, 2341917, 2341918
EPA 351.2 Rev. 2.0	Total Kjeldahl Nitrogen in aqueous matrices	2341915, 2341916, 2341917, 2341918
EPA 353.2 Rev. 2.0	Nitrite/Nitrate in aqueous matrices as mg N/L	2341915, 2341916, 2341917, 2341918
EPA 365.1 Rev. 2.0	Total Phosphorus in aqueous matrices as mg P/L	2341915, 2341916, 2341917, 2341918
EPA 365.1 Rev. 2.0 dissolved	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	2341919, 2341920, 2341921, 2341922
EPA 8321B	Microcystins in water matrices by HPLC/MS/MS	2341908, 2341909, 2341910, 2341911
EPA 8321B	Saxitoxin in water matrices by HPLC/MS/MS	2341908, 2341909, 2341910, 2341911

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
EPA 350.1 Rev. 2.0	07/15/2022			07/28/2022 10:32	Ping Hua	2341915
	07/15/2022			07/28/2022 10:38	Ping Hua	2341916
	07/15/2022			07/28/2022 10:40	Ping Hua	2341917
	07/15/2022			07/28/2022 10:41	Ping Hua	2341918
EPA 351.2 Rev. 2.0	07/15/2022	07/25/2022 12:53	Simonne.V. Calhoun	07/26/2022 11:10	Samantha L Bates	2341918
	07/15/2022	07/25/2022 15:00	Simonne.V. Calhoun	07/26/2022 14:38	Samantha L Bates	2341915
	07/15/2022	07/25/2022 15:00	Simonne.V. Calhoun	07/26/2022 14:40	Samantha L Bates	2341916
	07/15/2022	07/25/2022 15:00	Simonne.V. Calhoun	07/26/2022 14:41	Samantha L Bates	2341917
EPA 353.2 Rev. 2.0	07/15/2022			07/21/2022 09:56	Beverly Y. Sanders	2341915
	07/15/2022			07/21/2022 10:10	Beverly Y. Sanders	2341916
	07/15/2022			07/21/2022 10:11	Beverly Y. Sanders	2341917
	07/15/2022			07/21/2022 10:18	Beverly Y. Sanders	2341918
EPA 365.1 Rev. 2.0	07/15/2022	07/21/2022 15:53	Adam P Silver	07/22/2022 10:29	James L Waggeberby	2341918
	07/15/2022	07/21/2022 15:53	Adam P Silver	07/25/2022 14:17	James L Waggeberby	2341916
	07/15/2022	07/21/2022 15:53	Adam P Silver	07/25/2022 14:18	James L Waggeberby	2341915
	07/15/2022	07/21/2022 15:53	Adam P Silver	07/25/2022 14:19	James L Waggeberby	2341917
EPA 365.1 Rev. 2.0 dissolved	07/15/2022			07/15/2022 14:14	Chandler E Cox	2341919
	07/15/2022			07/15/2022 14:15	Chandler E Cox	2341920
	07/15/2022			07/15/2022 14:16	Chandler E Cox	2341921
	07/15/2022			07/15/2022 14:17	Chandler E Cox	2341922
EPA 8321B	07/15/2022	07/15/2022 12:00	Manjita Shrestha	07/15/2022 17:19	Manjita Shrestha	2341908
	07/15/2022	07/15/2022 12:00	Manjita Shrestha	07/15/2022 17:33	Manjita Shrestha	2341909
	07/15/2022	07/15/2022 12:00	Manjita Shrestha	07/15/2022 17:47	Manjita Shrestha	2341910
	07/15/2022	07/15/2022 12:00	Manjita Shrestha	07/15/2022 18:01	Manjita Shrestha	2341911
	07/15/2022	07/15/2022 12:00	Umesh Chiluwal	07/15/2022 15:41	Umesh Chiluwal	2341908
	07/15/2022	07/15/2022 12:00	Umesh Chiluwal	07/15/2022 15:58	Umesh Chiluwal	2341909
	07/15/2022	07/15/2022 12:00	Umesh Chiluwal	07/15/2022 16:15	Umesh Chiluwal	2341910
	07/15/2022	07/15/2022 12:00	Umesh Chiluwal	07/15/2022 16:32	Umesh Chiluwal	2341911