

Chemical Analysis Report

WQAP-2022-08-02-01

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

Event Description: **Algal Bloom Response -SOROC- Highlands**
Request ID: **RQ-2022-08-01-68**
Customer: **WQAP**
Project ID: **BLOOM-RESP**

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Date Certified: 22-AUG-2022 16:03



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: Highlands County- Little Red Water

Collection Date/Time: 08/01/2022 07:54

Field ID: HAB-HC-080122-0754

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2344789	EPA 8321B	Anatoxin-a	0.25	U	ug/L	P417543	
		Cylindrospermopsin	0.10	U	ug/L	P417542	
		Desmethyl microcystin LR	0.25	U	ug/L	P417542	
		Microcystin H1R	0.25	U	ug/L	P417542	
		Microcystin HtyR	0.25	U	ug/L	P417542	
		Microcystin LA	0.10	U	ug/L	P417542	
		Microcystin LF	0.10	U	ug/L	P417542	
		Microcystin LR	0.25	U	ug/L	P417542	
		Microcystin LW	0.25	U	ug/L	P417542	
		Microcystin LY	0.10	U	ug/L	P417542	
		Microcystin RR	0.10	U	ug/L	P417542	
		Microcystin WR	0.50	U	ug/L	P417542	
		Microcystin YR	0.25	U	ug/L	P417542	
		Nodularin-R	0.10	U	ug/L	P417542	
2344791	EPA 350.1 Rev. 2.0	Ammonia-N	0.044		mg N/L	P417972	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.80		mg N/L	P418073	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.012		mg N/L	P417646	
	EPA 365.1 Rev. 2.0	Total-P	0.039		mg P/L	P417611	
2344793	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P417512	

Sample Location: Highlands County- Lake Sebring

Collection Date/Time: 08/01/2022 08:32

Field ID: HAB-HC-080122-0832

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2344790	EPA 8321B	Anatoxin-a	0.25	U	ug/L	P417543	
		Cylindrospermopsin	0.10	U	ug/L	P417542	
		Desmethyl microcystin LR	0.25	U	ug/L	P417542	
		Microcystin HIR	0.25	U	ug/L	P417542	
		Microcystin HtyR	0.25	U	ug/L	P417542	
		Microcystin LA	0.10	U	ug/L	P417542	
		Microcystin LF	0.10	U	ug/L	P417542	
		Microcystin LR	0.25	U	ug/L	P417542	
		Microcystin LW	0.25	U	ug/L	P417542	
		Microcystin LY	0.10	U	ug/L	P417542	
		Microcystin RR	0.10	U	ug/L	P417542	
		Microcystin WR	0.50	U	ug/L	P417542	
		Microcystin YR	0.25	U	ug/L	P417542	
		Nodularin-R	0.10	U	ug/L	P417542	
2344792	EPA 350.1 Rev. 2.0	Ammonia-N	0.041		mg N/L	P417816	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.98		mg N/L	P417571	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.015		mg N/L	P417646	
	EPA 365.1 Rev. 2.0	Total-P	0.068		mg P/L	P417611	
2344794	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P417512	

Ref. Method and Comment:

EPA 350.1 Rev. 2.0: Batch matrix spike recoveries are unavailable because of high analyte concentration in the QC sample.

Quality Assurance Report Method Blank Results

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P417816

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P417972

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P417571

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P418073

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P417646

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P417611

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P417512

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

Reference Method: EPA 8321B
Batch ID: P417542

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: P417542

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: P417543

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: P417816

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Ammonia-N	98.6		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P417972

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Ammonia-N	96.4		P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P417571

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Kjeldahl Nitrogen	103		P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P418073

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P417646

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
NO2NO3-N	100		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P417611

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total-P	99.8		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P417512

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
O-Phosphate-P	99.0		P	90 - 110

Reference Method: EPA 8321B
Batch ID: P417542

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Cylindrospermopsin	87.6		P	40 - 150
Desmethyl microcystin LR	91.6		P	40 - 150
Microcystin HIR	93.0		P	40 - 150
Microcystin HtyR	97.8		P	40 - 150
Microcystin LA	97.2		P	40 - 150
Microcystin LF	94.9		P	40 - 150
Microcystin LR	93.8		P	40 - 150
Microcystin LW	89.3		P	40 - 150
Microcystin LY	97.6		P	40 - 150
Microcystin RR	93.5		P	40 - 150

Quality Assurance Report

Laboratory Control Sample Accuracy

Reference Method: EPA 8321B
Batch ID: P417542

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Microcystin WR	92.0		P	40 - 150
Microcystin YR	93.9		P	40 - 150
Nodularin-R	89.8		P	40 - 150

Reference Method: EPA 8321B
Batch ID: P417543

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Anatoxin-a	95.6		P	40 - 150

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 350.1 Rev. 2.0

Batch ID: P417972

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2344791	Ammonia-N	98.0	99.4	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0

Batch ID: P417571

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2344738	Kjeldahl Nitrogen	93.1	97.2	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0

Batch ID: P418073

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2344648	Kjeldahl Nitrogen	103	103	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0

Batch ID: P417646

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2344791	NO2NO3-N	96.2	97.6	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0

Batch ID: P417611

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2344791	Total-P	99.6	101	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Batch ID: P417512

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2344794	O-Phosphate-P	102	104	P/P	90 - 110

Reference Method: EPA 8321B

Batch ID: P417542

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2344789	Cylindrospermopsin	88.1	88.0	P/P	40 - 150
2344789	Desmethyl microcystin LR	93.2	97.6	P/P	40 - 150
2344789	Microcystin HILR	93.4	94.7	P/P	40 - 150
2344789	Microcystin HtyR	94.0	93.3	P/P	40 - 150
2344789	Microcystin LA	94.6	96.0	P/P	40 - 150
2344789	Microcystin LF	101	100	P/P	40 - 150
2344789	Microcystin LR	95.9	92.8	P/P	40 - 150
2344789	Microcystin LW	77.2	91.9	P/P	40 - 150
2344789	Microcystin LY	94.3	92.4	P/P	40 - 150
2344789	Microcystin RR	92.7	93.5	P/P	40 - 150
2344789	Microcystin WR	78.2	91.4	P/P	40 - 150
2344789	Microcystin YR	92.3	89.6	P/P	40 - 150
2344789	Nodularin-R	88.2	88.8	P/P	40 - 150

Quality Assurance Report

Matrix Spike Accuracy

Reference Method: EPA 8321B
Batch ID: P417543

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2344789	Anatoxin-a	105	104	P/P	40 - 150

Quality Assurance Report Precision

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P417816

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2344747	Ammonia-N	0.808	Spike	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P417972

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2344791	Ammonia-N	0.749	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P417571

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2344738	Kjeldahl Nitrogen	4.08	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P418073

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2344648	Kjeldahl Nitrogen	0.0645	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P417646

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2344791	NO2NO3-N	1.46	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P417611

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2344791	Total-P	1.73	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P417512

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2344794	O-Phosphate-P	1.26	Spike	P	0 - 20

Reference Method: EPA 8321B
Batch ID: P417542

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2344789	Cylindrospermopsin	0.152	Spike	P	0 - 30
2344789	Desmethyl microcystin LR	4.57	Spike	P	0 - 30

Quality Assurance Report Precision

Reference Method: EPA 8321B
Batch ID: P417542

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2344789	Microcystin HllR	1.30	Spike	P	0 - 30
2344789	Microcystin HtyR	0.780	Spike	P	0 - 30
2344789	Microcystin LA	1.39	Spike	P	0 - 30
2344789	Microcystin LF	0.568	Spike	P	0 - 30
2344789	Microcystin LR	3.29	Spike	P	0 - 30
2344789	Microcystin LW	17.4	Spike	P	0 - 30
2344789	Microcystin LY	2.05	Spike	P	0 - 30
2344789	Microcystin RR	0.864	Spike	P	0 - 30
2344789	Microcystin WR	15.5	Spike	P	0 - 30
2344789	Microcystin YR	2.99	Spike	P	0 - 30
2344789	Nodularin-R	0.697	Spike	P	0 - 30

Reference Method: EPA 8321B
Batch ID: P417543

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2344789	Anatoxin-a	0.510	Spike	P	0 - 30

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

Quality Assurance Report Surrogates

Lab Sample ID: 2344789
Field Sample ID: HAB-HC-080122-0754

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	Microcystin LR ethyl-d5	91.1	P	30 - 160
EPA 8321B	Neosaxitoxin-15N7	81.7	P	30 - 160

Lab Sample ID: 2344790
Field Sample ID: HAB-HC-080122-0832

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	Microcystin LR ethyl-d5	89.2	P	30 - 160
EPA 8321B	Neosaxitoxin-15N7	86.0	P	30 - 160

Quality Assurance Report Calibration Verification

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Run ID: A113856

Included Lab Sample IDs: 2344793, 2344794

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	100	99.3	P/P	90 - 110

Reference Method: EPA 8321B

Run ID: A113885

Included Lab Sample IDs: 2344789, 2344790

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Cylindrospermopsin	96.5	104	P/P	60 - 160
Desmethyl microcystin LR	89.0	92.3	P/P	60 - 160
Microcystin HtR	93.2	96.5	P/P	60 - 160
Microcystin HtyR	93.6	101	P/P	60 - 160
Microcystin LA	98.1	102	P/P	50 - 160
Microcystin LF	78.6	99.1	P/P	60 - 160
Microcystin LR	93.0	91.8	P/P	60 - 160
Microcystin LW	84.4	90.5	P/P	60 - 160
Microcystin LY	99.3	93.8	P/P	60 - 160
Microcystin RR	90.9	91.4	P/P	60 - 160
Microcystin WR	90.7	94.8	P/P	60 - 160
Microcystin YR	96.6	91.6	P/P	60 - 160
Nodularin-R	89.5	92.6	P/P	60 - 160

Reference Method: EPA 8321B

Run ID: A113886

Included Lab Sample IDs: 2344789, 2344790

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Anatoxin-a	105	98.3	P/P	50 - 160

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A113906

Included Lab Sample IDs: 2344791, 2344792

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
NO2NO3-N	100	101	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A113932

Included Lab Sample IDs: 2344792

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	97.7	97.2	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A113937

Included Lab Sample IDs: 2344791

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	101	103	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A113982

Included Lab Sample IDs: 2344792

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	101	99.8	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A113990

Included Lab Sample IDs: 2344792

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	91.8	96.0	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A114030

Included Lab Sample IDs: 2344791

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	101	99.4	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A114125

Included Lab Sample IDs: 2344791

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	94.6	96.5	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		Precision	
					LCS	SMP
EPA 350.1 Rev. 2.0	Ammonia-N	98.6				0.808
	Ammonia-N	96.4	98.0	99.4		0.749
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	103	93.1	97.2		4.08
	Kjeldahl Nitrogen	98.2	103	103		0.0645
EPA 353.2 Rev. 2.0	NO2NO3-N	100	96.2	97.6		1.46
EPA 365.1 Rev. 2.0	Total-P	99.8	99.6	101		1.73
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	99.0	102	104		1.26
EPA 8321B	Anatoxin-a	95.6	105	104		0.510
	Cylindrospermopsin	87.6	88.1	88.0		0.152
	Desmethyl microcystin LR	91.6	93.2	97.6		4.57
	Microcystin H1LR	93.0	93.4	94.7		1.30
	Microcystin HtyR	97.8	94.0	93.3		0.780
	Microcystin LA	97.2	94.6	96.0		1.39
	Microcystin LF	94.9	101	100		0.568
	Microcystin LR	93.8	95.9	92.8		3.29
	Microcystin LW	89.3	77.2	91.9		17.4
	Microcystin LY	97.6	94.3	92.4		2.05
	Microcystin RR	93.5	92.7	93.5		0.864
	Microcystin WR	92.0	78.2	91.4		15.5
	Microcystin YR	93.9	92.3	89.6		2.99
	Nodularin-R	89.8	88.2	88.8		0.697

Reference Method Descriptions

Method	Description	Associated Samples
EPA 350.1 Rev. 2.0	Ammonia in aqueous matrices as mg N/L	2344791, 2344792
EPA 351.2 Rev. 2.0	Total Kjeldahl Nitrogen in aqueous matrices	2344791, 2344792
EPA 353.2 Rev. 2.0	Nitrite/Nitrate in aqueous matrices as mg N/L	2344791, 2344792
EPA 365.1 Rev. 2.0	Total Phosphorus in aqueous matrices as mg P/L	2344791, 2344792
EPA 365.1 Rev. 2.0 dissolved	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	2344793, 2344794
EPA 8321B	Microcystins in water matrices by HPLC/MS/MS	2344789, 2344790
EPA 8321B	Saxitoxin in water matrices by HPLC/MS/MS	2344789, 2344790

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	08/02/2022			08/09/2022 10:36	Judith K. Clark	2344792
	08/02/2022			08/11/2022 10:57	Ping Hua	2344791
EPA 351.2 Rev. 2.0	08/02/2022	08/04/2022 15:38	Samantha L Bates	08/09/2022 15:27	Samantha L Bates	2344792
	08/02/2022	08/15/2022 14:45	Simonne.V. Calhoun	08/16/2022 12:24	Alexandra J Mattheus	2344791
EPA 353.2 Rev. 2.0	08/02/2022			08/04/2022 11:31	Beverly Y. Sanders	2344791
	08/02/2022			08/04/2022 11:32	Beverly Y. Sanders	2344792
EPA 365.1 Rev. 2.0	08/02/2022	08/04/2022 15:40	Simonne.V. Calhoun	08/05/2022 11:27	Simonne.V. Calhoun	2344792
	08/02/2022	08/04/2022 15:40	Simonne.V. Calhoun	08/05/2022 14:13	James L Waggerby	2344791
EPA 365.1 Rev. 2.0 dissolved	08/02/2022			08/02/2022 14:16	Chandler E Cox	2344794
	08/02/2022			08/02/2022 14:19	Chandler E Cox	2344793
EPA 8321B	08/02/2022	08/03/2022 10:35	Manjita Shrestha	08/03/2022 17:25	Manjita Shrestha	2344789
	08/02/2022	08/03/2022 10:35	Manjita Shrestha	08/03/2022 17:39	Manjita Shrestha	2344790
	08/02/2022	08/03/2022 10:35	Umesh Chiluwal	08/03/2022 13:27	Umesh Chiluwal	2344789
	08/02/2022	08/03/2022 10:35	Umesh Chiluwal	08/03/2022 13:44	Umesh Chiluwal	2344790