

Chemical Analysis Report

WQAP-2021-02-09-02

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

Event Description: **Algal Bloom Response - SWD**
Request ID: **RQ-2020-12-07-38**
Customer: **WQAP**
Project ID: **BLOOM-RESP**

Send Reports to:
FL Dept. of Environmental Protection
13051 N. Telecom Parkway
Temple Terrace, FL 33637
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Certified by: Dr. rer. nat. Bettina Steinbock, Environmental Administrator

Date Certified: 02-MAR-2021 12:26



NON-CONFORMANCE REPORT INCLUDED

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: Harbor Isles-Southern Lobe

Collection Date/Time: 02/08/2021 09:30

Field ID: HAB-SW-0008

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2224320	EPA 8321B	Anatoxin-a	0.25	U	ug/L	P393585	
		Cylindrospermopsin	0.25	U	ug/L	P393585	
		Desmethyl microcystin LR	0.25	U	ug/L	P393585	
		Microcystin HIR**	0.25	U	ug/L	P393585	
		Microcystin HtyR**	0.25	U	ug/L	P393585	
		Microcystin LA	0.25	U	ug/L	P393585	
		Microcystin LF	0.25	U	ug/L	P393585	
		Microcystin LR	3.1		ug/L	P393585	
		Microcystin LW	0.25	U	ug/L	P393585	
		Microcystin LY	0.25	U	ug/L	P393585	
		Microcystin RR	0.25	U	ug/L	P393585	
		Microcystin WR	0.50	U	ug/L	P393585	
		Microcystin YR	0.25	U	ug/L	P393585	
2224323	EPA 350.1 Rev. 2.0	Ammonia-N	0.16	Y	mg N/L	P393916	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen		O	mg N/L	P393838	
	EPA 353.2 Rev. 2.0	NO2NO3-N		O	mg N/L	P393589	
	EPA 365.1 Rev. 2.0	Total-P	0.085	Y	mg P/L	P393715	
2224326	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.008	I	mg P/L	P393560	

Ref. Method and Comment:

EPA 350.1 Rev. 2.0: Sample appears to have been preserved with nitric acid.

EPA 351.2 Rev. 2.0: Sample appears to have been preserved with nitric acid.

EPA 353.2 Rev. 2.0: Sample appears to have been preserved with nitric acid.

EPA 365.1 Rev. 2.0: Total-P: Sample appears to have been preserved with nitric acid.

Sample Location: Harbor Isles-Center Lobe

Collection Date/Time: 02/08/2021 10:00

Field ID: HAB-SW-0026

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2224321	EPA 8321B	Anatoxin-a	0.25	U	ug/L	P393585	
		Cylindrospermopsin	0.25	U	ug/L	P393585	
		Desmethyl microcystin LR	0.25	U	ug/L	P393585	
		Microcystin HIR**	0.25	U	ug/L	P393585	
		Microcystin HtyR**	0.25	U	ug/L	P393585	
		Microcystin LA	0.25	U	ug/L	P393585	
		Microcystin LF	0.25	U	ug/L	P393585	
		Microcystin LR	3.6		ug/L	P393585	
		Microcystin LW	0.25	U	ug/L	P393585	
		Microcystin LY	0.25	U	ug/L	P393585	
		Microcystin RR	0.25	U	ug/L	P393585	
		Microcystin WR	0.50	U	ug/L	P393585	
		Microcystin YR	0.25	U	ug/L	P393585	
2224324	EPA 350.1 Rev. 2.0	Ammonia-N	0.13	Y	mg N/L	P393916	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen		0	mg N/L	P393838	
	EPA 353.2 Rev. 2.0	NO2NO3-N		0	mg N/L	P393589	
	EPA 365.1 Rev. 2.0	Total-P	0.061	Y	mg P/L	P393715	
2224327	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.006	I	mg P/L	P393560	

Ref. Method and Comment:

EPA 350.1 Rev. 2.0: Sample appears to have been preserved with nitric acid.

EPA 351.2 Rev. 2.0: Sample appears to have been preserved with nitric acid.

EPA 353.2 Rev. 2.0: Sample appears to have been preserved with nitric acid.

EPA 365.1 Rev. 2.0: Total-P: Sample appears to have been preserved with nitric acid.

Sample Location: Harbor Isles-NW Lobe

Collection Date/Time: 02/08/2021 10:15

Field ID: HAB-SW-0023

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2224322	EPA 8321B	Anatoxin-a	0.25	U	ug/L	P393585	
		Cylindrospermopsin	0.25	U	ug/L	P393585	
		Desmethyl microcystin LR	0.25	U	ug/L	P393585	
		Microcystin HIR**	0.25	U	ug/L	P393585	
		Microcystin HtyR**	0.25	U	ug/L	P393585	
		Microcystin LA	0.25	U	ug/L	P393585	
		Microcystin LF	0.25	U	ug/L	P393585	
		Microcystin LR	4.9		ug/L	P393585	
		Microcystin LW	0.25	U	ug/L	P393585	
		Microcystin LY	0.25	U	ug/L	P393585	
		Microcystin RR	0.25	U	ug/L	P393585	
		Microcystin WR	0.50	U	ug/L	P393585	
		Microcystin YR	0.25	U	ug/L	P393585	
2224325	EPA 350.1 Rev. 2.0	Ammonia-N	0.16	Y	mg N/L	P393916	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen		O	mg N/L	P393838	
	EPA 353.2 Rev. 2.0	NO2NO3-N		O	mg N/L	P393589	
	EPA 365.1 Rev. 2.0	Total-P	0.057	Y	mg P/L	P393715	
2224328	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	I	mg P/L	P393560	

Ref. Method and Comment:

EPA 350.1 Rev. 2.0: Sample appears to have been preserved with nitric acid.

EPA 351.2 Rev. 2.0: Sample appears to have been preserved with nitric acid.

EPA 353.2 Rev. 2.0: Sample appears to have been preserved with nitric acid.

EPA 365.1 Rev. 2.0: Total-P: Sample appears to have been preserved with nitric acid.

Non-Conformance Report

NCR ID: 8665

<u>Event(s)</u>	<u>Job(s)</u>	<u>Sample(s)</u>	<u>Test(s)</u>
WQAP-2021-02-09-02	TLH-2021-02-09-25	2224323	
WQAP-2021-02-09-02	TLH-2021-02-09-25	2224324	
WQAP-2021-02-09-02	TLH-2021-02-09-25	2224325	

NCR Type: SAMPLING

NCR Category: General

Observation: Samples 2224323, 2224324, and 2224325 appear to be preserved with Nitric Acid. The Nitrite/Nitrate concentrations are 504, 594, 480 mg N/L respectively, and there are less than 1.0, 2.0, and 2.0 mg N/L in the respective unpreserved aliquots (samples: 2224326, 2224327, 2224328).

Resolution: Results for the NO₂NO₃-N and Total Kjeldahl Nitrogen components were reported as the non-numeric qualifier O. Results for other affected components were qualified with a Y qualifier for incorrect preservation.

Authorized by/Date: Irina Carbone 2/26/2021

The Non-Conformance Report details exceptions or problems encountered with the events/jobs/samples/test.
Please address questions to:

Chemistry	Colin Wright	(850) 245-8085
Biology	Cheryl Swanson	(850) 245-8177

Quality Assurance Report Method Blank Results

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P393916

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P393838

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P393589

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P393715

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P393560

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

Reference Method: EPA 8321B
Batch ID: P393585

Component	Result	Code	Units
Anatoxin-a	0.25	U	ug/L
Cylindrospermopsin	0.25	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	0.25	U	ug/L
Microcystin LF	0.25	U	ug/L
Microcystin LR	0.25	U	ug/L
Microcystin LW	0.25	U	ug/L
Microcystin LY	0.25	U	ug/L
Microcystin RR	0.25	U	ug/L
Microcystin WR	0.50	U	ug/L
Microcystin YR	0.25	U	ug/L

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P393916

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Ammonia-N	95.6		P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P393838

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P393589

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P393715

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P393560

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

Reference Method: EPA 8321B
Batch ID: P393585

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Anatoxin-a	115		P	40 - 150
Cylindrospermopsin	94.8		P	40 - 150
Desmethyl microcystin LR	97.1		P	40 - 150
Microcystin HIR	109		P	40 - 150
Microcystin HtyR	99.8		P	40 - 150
Microcystin LA	92.6		P	40 - 150
Microcystin LF	100		P	40 - 150
Microcystin LR	87.6		P	40 - 150
Microcystin LW	109		P	40 - 150
Microcystin LY	115		P	40 - 150
Microcystin RR	111		P	40 - 150
Microcystin WR	101		P	40 - 150
Microcystin YR	97.4		P	40 - 150

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P393916

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2224470	Ammonia-N	98.2	101	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P393838

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2224264	Kjeldahl Nitrogen	103	98.6	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P393589

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2224236	NO2NO3-N	102	101	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P393715

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2224267	Total-P	102	99.7	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P393560

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2224326	O-Phosphate-P	98.3	99.1	P/P	90 - 110

Reference Method: EPA 8321B
Batch ID: P393585

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2224192	Anatoxin-a	122	108	P/P	40 - 150
2224192	Cylindrospermopsin	91.5	85.6	P/P	40 - 150
2224192	Desmethyl microcystin LR	111	102	P/P	40 - 150
2224192	Microcystin HiLR	116	107	P/P	40 - 150
2224192	Microcystin HtyR	101	95.4	P/P	40 - 150
2224192	Microcystin LA	93.8	84.6	P/P	40 - 150
2224192	Microcystin LF	80.0	88.9	P/P	40 - 150
2224192	Microcystin LR	104	99.4	P/P	40 - 150
2224192	Microcystin LW	79.6	77.4	P/P	40 - 150
2224192	Microcystin LY	103	94.2	P/P	40 - 150
2224192	Microcystin RR	104	92.8	P/P	40 - 150
2224192	Microcystin WR	111	94.0	P/P	40 - 150
2224192	Microcystin YR	114	96.7	P/P	40 - 150

Quality Assurance Report Precision

Reference Method: EPA 350.1 Rev. 2.0
 Batch ID: P393916

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2224470	Ammonia-N	1.97	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
 Batch ID: P393838

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2224264	Kjeldahl Nitrogen	3.51	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
 Batch ID: P393589

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2224236	NO2NO3-N	0.477	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
 Batch ID: P393715

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2224267	Total-P	2.25	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
 Batch ID: P393560

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2224326	O-Phosphate-P	0.748	Spike	P	0 - 20

Reference Method: EPA 8321B
 Batch ID: P393585

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2224192	Anatoxin-a	12.1	Spike	P	0 - 30
2224192	Cylindrospermopsin	6.75	Spike	P	0 - 30
2224192	Desmethyl microcystin LR	8.61	Spike	P	0 - 30
2224192	Microcystin HiIR	8.33	Spike	P	0 - 30
2224192	Microcystin HtyR	5.62	Spike	P	0 - 30
2224192	Microcystin LA	10.3	Spike	P	0 - 30
2224192	Microcystin LF	10.6	Spike	P	0 - 30
2224192	Microcystin LR	4.38	Spike	P	0 - 30
2224192	Microcystin LW	2.85	Spike	P	0 - 30
2224192	Microcystin LY	9.05	Spike	P	0 - 30
2224192	Microcystin RR	11.4	Spike	P	0 - 30
2224192	Microcystin WR	16.3	Spike	P	0 - 30
2224192	Microcystin YR	16.7	Spike	P	0 - 30

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

Quality Assurance Report Surrogates

Lab Sample ID: 2224320
Field Sample ID: HAB-SW-0008

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	Microcystin LR-d7	87.7	P	30 - 160
EPA 8321B	Microcystin LR ethyl-d5	69.9	P	30 - 160

Lab Sample ID: 2224321
Field Sample ID: HAB-SW-0026

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	Microcystin LR-d7	75.9	P	30 - 160
EPA 8321B	Microcystin LR ethyl-d5	64.5	P	30 - 160

Lab Sample ID: 2224322
Field Sample ID: HAB-SW-0023

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	Microcystin LR-d7	92.3	P	30 - 160
EPA 8321B	Microcystin LR ethyl-d5	75.4	P	30 - 160

Quality Assurance Report Calibration Verification

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Run ID: A103496

Included Lab Sample IDs: 2224326, 2224327, 2224328

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

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A103513

Included Lab Sample IDs: 2224323, 2224324, 2224325

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
NO2NO3-N	102	102	P/P	90 - 110

Reference Method: EPA 8321B

Run ID: A103533

Included Lab Sample IDs: 2224320, 2224321, 2224322

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Anatoxin-a	96.6	94.4	P/P	50 - 160
Cylindrospermopsin	84.7	87.9	P/P	60 - 160
Desmethyl microcystin LR	82.3	85.3	P/P	60 - 160
Microcystin HILR	89.9	107	P/P	60 - 160
Microcystin HtyR	87.1	77.9	P/P	60 - 160
Microcystin LA	78.2	82.8	P/P	50 - 160
Microcystin LF	80.8	99.6	P/P	60 - 160
Microcystin LR	81.1	82.4	P/P	60 - 160
Microcystin LW	86.5	70.8	P/P	60 - 160
Microcystin LY	85.8	76.8	P/P	60 - 160
Microcystin RR	96.3	91.3	P/P	60 - 160
Microcystin WR	95.8	97.5	P/P	60 - 160
Microcystin YR	79.6	82.1	P/P	60 - 160

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A103604

Included Lab Sample IDs: 2224323, 2224324, 2224325

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

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A103638

Included Lab Sample IDs: 2224323, 2224324, 2224325

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	97.7	98.4	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A103655

Included Lab Sample IDs: 2224323, 2224324, 2224325

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	99.7	102	P/P	90 - 110

Quality Assurance Report

Calibration Verification

* 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	95.6	98.2	101			1.97
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	103	103	98.6			3.51
EPA 353.2 Rev. 2.0	NO ₂ NO ₃ -N	101	102	101			0.477
EPA 365.1 Rev. 2.0	Total-P	99.5	102	99.7			2.25
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	98.6	98.3	99.1			0.748
EPA 8321B	Anatoxin-a	115	122	108			12.1
	Cylindrospermopsin	94.8	91.5	85.6			6.75
	Desmethyl microcystin LR	97.1	111	102			8.61
	Microcystin HiLR	109	116	107			8.33
	Microcystin HtyR	99.8	101	95.4			5.62
	Microcystin LA	92.6	93.8	84.6			10.3
	Microcystin LF	100	80.0	88.9			10.6
	Microcystin LR	87.6	104	99.4			4.38
	Microcystin LW	109	79.6	77.4			2.85
	Microcystin LY	115	103	94.2			9.05
	Microcystin RR	111	104	92.8			11.4
	Microcystin WR	101	111	94.0			16.3
	Microcystin YR	97.4	114	96.7			16.7

Reference Method Descriptions

Method	Description	Associated Samples
EPA 350.1 Rev. 2.0	Ammonia in aqueous matrices as mg N/L	2224323, 2224324, 2224325
EPA 351.2 Rev. 2.0	Total Kjeldahl Nitrogen in aqueous matrices	2224323, 2224324, 2224325
EPA 353.2 Rev. 2.0	Nitrite/Nitrate in aqueous matrices as mg N/L	2224323, 2224324, 2224325
EPA 365.1 Rev. 2.0	Total Phosphorus in aqueous matrices as mg P/L	2224323, 2224324, 2224325
EPA 365.1 Rev. 2.0 dissolved	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	2224326, 2224327, 2224328
EPA 8321B	Microcystins in water matrices by HPLC/MS/MS	2224320, 2224321, 2224322

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	02/09/2021			02/17/2021 17:05	Ping Hua	2224323
	02/09/2021			02/17/2021 17:06	Ping Hua	2224324
	02/09/2021			02/17/2021 17:08	Ping Hua	2224325
EPA 351.2 Rev. 2.0	02/09/2021	02/16/2021 12:30	Yen Ta	02/17/2021 14:18	Julia Storbeck	2224323
	02/09/2021	02/16/2021 12:30	Yen Ta	02/17/2021 14:19	Julia Storbeck	2224324
	02/09/2021	02/16/2021 12:30	Yen Ta	02/17/2021 14:21	Julia Storbeck	2224325
EPA 353.2 Rev. 2.0	02/09/2021			02/10/2021 10:25	Beverly Y. Sanders	2224323
	02/09/2021			02/10/2021 10:27	Beverly Y. Sanders	2224324
	02/09/2021			02/10/2021 10:28	Beverly Y. Sanders	2224325
EPA 365.1 Rev. 2.0	02/09/2021	02/12/2021 14:20	Lipi Saha	02/16/2021 11:36	Shengyu Wang	2224323
	02/09/2021	02/12/2021 14:20	Lipi Saha	02/16/2021 11:37	Shengyu Wang	2224324
	02/09/2021	02/12/2021 14:20	Lipi Saha	02/16/2021 11:38	Shengyu Wang	2224325
EPA 365.1 Rev. 2.0 dissolved	02/09/2021			02/09/2021 15:37	Blanca Fach	2224326
	02/09/2021			02/09/2021 15:39	Blanca Fach	2224327
	02/09/2021			02/09/2021 15:40	Blanca Fach	2224328
EPA 8321B	02/09/2021	02/10/2021 11:00	Pramila Ghimire	02/10/2021 21:16	Pramila Ghimire	2224320
	02/09/2021	02/10/2021 11:00	Pramila Ghimire	02/10/2021 21:33	Pramila Ghimire	2224321
	02/09/2021	02/10/2021 11:00	Pramila Ghimire	02/10/2021 21:49	Pramila Ghimire	2224322