Chemical Analysis Report

WQAP-2023-03-15-01

Florida DEP Laboratory
2600 Blair Stone Road
Tallahassee, FL 32399-2400
DOH Accreditation E31780

Event Description: **Algal Bloom Response - CEROC**
Request ID: **RQ-2023-02-27-47**
Customer: **WQAP**
Project ID: **BLOOM-RESP**

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Date Certified: 03-APR-2023 12:22

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: Wood Lake - E Shore **Collection Date/Time: 03/14/2023 11:33**

Field ID: HABCE0168_WoodLake2 Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2393940	EPA 8321B	Anatoxin-a	0.25	U	ug/L	P427204	
		Cylindrospermopsin	0.10	U	ug/L	P427203	
		Desmethyl microcystin LR	0.25	U	ug/L	P427203	
		Microcystin HilR	0.25	U	ug/L	P427203	
		Microcystin HtyR	0.25	U	ug/L	P427203	
		Microcystin LA	0.22	I	ug/L	P427203	
		Microcystin LF	0.10	U	ug/L	P427203	
		Microcystin LR	0.25	U	ug/L	P427203	
		Microcystin LW	0.25	U	ug/L	P427203	
		Microcystin LY	0.10	U	ug/L	P427203	
		Microcystin RR	0.10	U	ug/L	P427203	
		Microcystin WR	0.50	U	ug/L	P427203	
		Neosaxitoxin	0.50	U	ug/L	P427204	
		Microcystin YR	0.25	U	ug/L	P427203	MS
		Saxitoxin	0.50	U	ug/L	P427204	
		Nodularin-R	0.10	U	ug/L	P427203	MS
2393943	EPA 350.1 Rev. 2.0	Ammonia-N	0.007		mg N/L	P427417	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.63		mg N/L	P427433	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.005	I	mg N/L	P427342	
	EPA 365.1 Rev. 2.0	Total-P	0.025		mg P/L	P427332	
2393946	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P427191	

Sample Location: Lake Baldwin - Fleet Peeples Park **Collection Date/Time: 03/14/2023 13:39**

Field ID: HABCE0173_Lake Baldwin Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2393939	EPA 8321B	Anatoxin-a	0.25	U	ug/L	P427204	
		Cylindrospermopsin	0.10	U	ug/L	P427203	
		Desmethyl microcystin LR	0.25	U	ug/L	P427203	
		Microcystin HilR	0.25	U	ug/L	P427203	
		Microcystin HtyR	0.25	U	ug/L	P427203	
		Microcystin LA	0.80		ug/L	P427203	
		Microcystin LF	0.10	U	ug/L	P427203	
		Microcystin LR	0.30	I	ug/L	P427203	
		Microcystin LW	0.25	U	ug/L	P427203	
		Microcystin LY	0.10	U	ug/L	P427203	
		Microcystin RR	0.10	U	ug/L	P427203	
		Microcystin WR	0.50	U	ug/L	P427203	
		Neosaxitoxin	0.50	U	ug/L	P427204	
		Microcystin YR	0.25	U	ug/L	P427203	MS
		Saxitoxin	0.50	U	ug/L	P427204	
		Nodularin-R	0.10	U	ug/L	P427203	MS
2393942	EPA 350.1 Rev. 2.0	Ammonia-N	0.005		mg N/L	P427416	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.72		mg N/L	P427433	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P427342	
	EPA 365.1 Rev. 2.0	Total-P	0.025		mg P/L	P427332	
2393945	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P427191	

Sample Location: Tiger Lake - Center **Collection Date/Time: 03/14/2023 11:21**

Field ID: HABCE0185_TigerLake2 Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2393938	EPA 8321B	Anatoxin-a	0.25	U	ug/L	P427204	
		Cylindrospermopsin	0.10	U	ug/L	P427203	
		Desmethyl microcystin LR	0.25	U	ug/L	P427203	
		Microcystin HilR	0.25	U	ug/L	P427203	
		Microcystin HtyR	0.25	U	ug/L	P427203	
		Microcystin LA	0.26	I	ug/L	P427203	
		Microcystin LF	0.15	I	ug/L	P427203	
		Microcystin LR	3.1		ug/L	P427203	
		Microcystin LW	0.25	U	ug/L	P427203	
		Microcystin LY	0.26	I	ug/L	P427203	
		Microcystin RR	0.27	I	ug/L	P427203	
		Microcystin WR	0.50	U	ug/L	P427203	
		Neosaxitoxin	0.50	U	ug/L	P427204	
		Microcystin YR	0.25	U	ug/L	P427203	MS
		Saxitoxin	0.50	U	ug/L	P427204	
		Nodularin-R	0.10	U	ug/L	P427203	MS
2393941	EPA 350.1 Rev. 2.0	Ammonia-N	0.008		mg N/L	P427416	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.9		mg N/L	P427433	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.027		mg N/L	P427398	
	EPA 365.1 Rev. 2.0	Total-P	0.096		mg P/L	P427332	
2393944	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P427191	

Quality Assurance Report
Method Blank Results

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P427416

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P427417

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P427433

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P427342

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P427398

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P427332

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P427191

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

Reference Method: EPA 8321B
Batch ID: P427203

Component	Result	Code	Units
Cylindrospermopsin	0.10	U	ug/L
Desmethyl microcystin LR	0.25	U	ug/L
Microcystin HilR	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: P427203

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: P427204

Component	Result	Code	Units
Anatoxin-a	0.25	U	ug/L
Neosaxitoxin	0.50	U	ug/L
Saxitoxin	0.50	U	ug/L

Quality Assurance Report
Laboratory Control Sample Accuracy

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P427416

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Ammonia-N	96.2		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P427417

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Ammonia-N	97.8		P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P427433

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P427342

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P427398

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P427332

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P427191

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

Reference Method: EPA 8321B
Batch ID: P427203

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Cylindrospermopsin	92.2		P	40 - 150
Desmethyl microcystin LR	77.2		P	40 - 150
Microcystin HilR	91.5		P	40 - 150
Microcystin HtyR	91.5		P	40 - 150
Microcystin LA	104		P	40 - 150
Microcystin LF	95.2		P	40 - 150
Microcystin LR	91.8		P	40 - 150
Microcystin LW	94.6		P	40 - 150
Microcystin LY	111		P	40 - 150
Microcystin RR	97.4		P	40 - 150

Quality Assurance Report
Laboratory Control Sample Accuracy

Reference Method: EPA 8321B
Batch ID: P427203

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Microcystin WR	92.4		P	40 - 150
Microcystin YR	108		P	40 - 150
Nodularin-R	93.2		P	40 - 150

Reference Method: EPA 8321B
Batch ID: P427204

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Anatoxin-a	73.5		P	40 - 150
Neosaxitoxin	96.3		P	40 - 150
Saxitoxin	76.5		P	40 - 150

Quality Assurance Report
Matrix Spike Accuracy

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P427416

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2393848	Ammonia-N	94.6	94.4	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P427417

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2393943	Ammonia-N	105	99.0	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P427433

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2393942	Kjeldahl Nitrogen	97.5	99.0	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P427342

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2393901	NO2NO3-N	99.0	99.5	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P427398

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2393849	NO2NO3-N	99.0	99.0	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P427332

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2393959	Total-P	103	102	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P427191

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2393945	O-Phosphate-P	99.8	100	P/P	90 - 110

Reference Method: EPA 8321B
Batch ID: P427203

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2393926	Cylindrospermopsin	93.4	88.4	P/P	40 - 150
2393926	Desmethyl microcystin LR	117	114	P/P	40 - 150
2393926	Microcystin HilR	133	122	P/P	40 - 150
2393926	Microcystin HtyR	138	126	P/P	40 - 150
2393926	Microcystin LA	115	112	P/P	40 - 150
2393926	Microcystin LF	106	102	P/P	40 - 150
2393926	Microcystin LR	140	150	P/P	40 - 150
2393926	Microcystin LW	113	106	P/P	40 - 150
2393926	Microcystin LY	133	120	P/P	40 - 150
2393926	Microcystin RR	109	99.5	P/P	40 - 150

Quality Assurance Report
Matrix Spike Accuracy

Reference Method: EPA 8321B
Batch ID: P427203

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2393926	Microcystin WR	117	113	P/P	40 - 150
2393926	Microcystin YR	160	142	F/P	40 - 150
2393926	Nodularin-R	152	147	F/P	40 - 150

Reference Method: EPA 8321B
Batch ID: P427204

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2393926	Anatoxin-a	64.3	61.3	P/P	40 - 150
2393926	Neosaxitoxin	67.9	64.0	P/P	40 - 150
2393926	Saxitoxin	60.2	56.8	P/P	40 - 150

Quality Assurance Report
Precision

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P427416

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2393848	Ammonia-N	0.171	Spike	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P427417

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2393943	Ammonia-N	5.53	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P427433

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2393942	Kjeldahl Nitrogen	1.11	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P427342

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2393901	NO2NO3-N	0.264	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P427398

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2393849	NO2NO3-N	0.0	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P427332

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2393959	Total-P	0.487	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P427191

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2393945	O-Phosphate-P	0.599	Spike	P	0 - 20

Reference Method: EPA 8321B
Batch ID: P427203

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2393926	Cylindrospermopsin	5.55	Spike	P	0 - 30
2393926	Desmethyl microcystin LR	2.03	Spike	P	0 - 30

Quality Assurance Report
Precision

Reference Method: EPA 8321B
Batch ID: P427203

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2393926	Microcystin HilR	9.12	Spike	P	0 - 30
2393926	Microcystin HtyR	9.35	Spike	P	0 - 30
2393926	Microcystin LA	2.73	Spike	P	0 - 30
2393926	Microcystin LF	4.08	Spike	P	0 - 30
2393926	Microcystin LR	6.57	Spike	P	0 - 30
2393926	Microcystin LW	5.71	Spike	P	0 - 30
2393926	Microcystin LY	10.4	Spike	P	0 - 30
2393926	Microcystin RR	9.32	Spike	P	0 - 30
2393926	Microcystin WR	3.09	Spike	P	0 - 30
2393926	Microcystin YR	11.6	Spike	P	0 - 30
2393926	Nodularin-R	3.20	Spike	P	0 - 30

Reference Method: EPA 8321B
Batch ID: P427204

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2393926	Anatoxin-a	4.75	Spike	P	0 - 30
2393926	Neosaxitoxin	5.90	Spike	P	0 - 30
2393926	Saxitoxin	5.85	Spike	P	0 - 30

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

Quality Assurance Report
Surrogates

Lab Sample ID: 2393938
Field Sample ID: HABCE0185_TigerLake2

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	Microcystin LR ethyl-d5	147	P	30 - 160
EPA 8321B	Neosaxitoxin-15N7	50.6	P	30 - 160

Lab Sample ID: 2393939
Field Sample ID: HABCE0173_Lake Baldwin

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	Microcystin LR ethyl-d5	107	P	30 - 160
EPA 8321B	Neosaxitoxin-15N7	63.1	P	30 - 160

Lab Sample ID: 2393940
Field Sample ID: HABCE0168_WoodLake2

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	Microcystin LR ethyl-d5	98.5	P	30 - 160
EPA 8321B	Neosaxitoxin-15N7	63.5	P	30 - 160

Quality Assurance Report
Calibration Verification

Reference Method: EPA 8321B
Run ID: A117967
Included Lab Sample IDs: 2393938, 2393939, 2393940

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Cylindrospermopsin	96.9	90.1	P/P	50 - 160
Desmethyl microcystin LR	78.0	85.7	P/P	50 - 160
Microcystin HilR	87.5	90.6	P/P	50 - 160
Microcystin HtyR	96.2	101	P/P	50 - 160
Microcystin LA	106	118	P/P	50 - 160
Microcystin LF	93.1	124	P/P	50 - 160
Microcystin LR	85.0	98.0	P/P	50 - 160
Microcystin LW	108	102	P/P	50 - 160
Microcystin LY	105	134	P/P	50 - 160
Microcystin RR	97.6	95.5	P/P	50 - 160
Microcystin WR	85.6	89.9	P/P	50 - 160
Microcystin YR	103	107	P/P	50 - 160
Nodularin-R	89.7	95.5	P/P	50 - 160

Reference Method: EPA 8321B
Run ID: A117970
Included Lab Sample IDs: 2393938, 2393939, 2393940

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Anatoxin-a	66.2	61.3	P/P	50 - 160
Neosaxitoxin	89.3	78.6	P/P	50 - 160
Saxitoxin	72.6	66.5	P/P	50 - 160

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Run ID: A118012
Included Lab Sample IDs: 2393944, 2393945, 2393946

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	99.4	98.9	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Run ID: A118078
Included Lab Sample IDs: 2393942, 2393943

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

Reference Method: EPA 365.1 Rev. 2.0
Run ID: A118094
Included Lab Sample IDs: 2393941

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	101	102	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Run ID: A118103
Included Lab Sample IDs: 2393941

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
NO2NO3-N	103	102	P/P	90 - 110

Quality Assurance Report
Calibration Verification

Reference Method: EPA 350.1 Rev. 2.0
Run ID: A118109
Included Lab Sample IDs: 2393941, 2393942, 2393943

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	96.4	96.5	P/P	90 - 110
Ammonia-N	97.0	96.4	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Run ID: A118134
Included Lab Sample IDs: 2393942, 2393943

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	97.8	97.0	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Run ID: A118158
Included Lab Sample IDs: 2393941, 2393942, 2393943

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	94.5		P	90 - 110
Kjeldahl Nitrogen	97.1	99.0	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	MS
EPA 350.1 Rev. 2.0	Ammonia-N	96.2	94.6	94.4			0.171
	Ammonia-N	97.8	105	99.0			5.53
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	100	97.5	99.0			1.11
EPA 353.2 Rev. 2.0	NO2NO3-N	100	99.0	99.5			0.264
	NO2NO3-N	102	99.0	99.0			0.0
EPA 365.1 Rev. 2.0	Total-P	100	103	102			0.487
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	101	99.8	100			0.599
EPA 8321B	Anatoxin-a	73.5	64.3	61.3			4.75
	Cylindrospermopsin	92.2	93.4	88.4			5.55
	Desmethyl microcystin LR	77.2	117	114			2.03
	Microcystin HilR	91.5	133	122			9.12
	Microcystin HtyR	91.5	138	126			9.35
	Microcystin LA	104	115	112			2.73
	Microcystin LF	95.2	106	102			4.08
	Microcystin LR	91.8	140	150			6.57
	Microcystin LW	94.6	113	106			5.71
	Microcystin LY	111	133	120			10.4
	Microcystin RR	97.4	109	99.5			9.32
	Microcystin WR	92.4	117	113			3.09
	Microcystin YR	108	160	142			11.6
	Neosaxitoxin	96.3	67.9	64.0			5.90
	Nodularin-R	93.2	152	147			3.20
	Saxitoxin	76.5	60.2	56.8			5.85

Reference Method Descriptions

Method	Description	Associated Samples
EPA 350.1 Rev. 2.0	Ammonia in aqueous matrices as mg N/L	2393941, 2393942, 2393943
EPA 351.2 Rev. 2.0	Total Kjeldahl Nitrogen in aqueous matrices	2393941, 2393942, 2393943
EPA 353.2 Rev. 2.0	Nitrite/Nitrate in aqueous matrices as mg N/L	2393941, 2393942, 2393943
EPA 365.1 Rev. 2.0	Total Phosphorus in aqueous matrices as mg P/L	2393941, 2393942, 2393943
EPA 365.1 Rev. 2.0 dissolved	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	2393944, 2393945, 2393946
EPA 8321B	Microcystins in water matrices by HPLC/MS/MS	2393938, 2393939, 2393940
EPA 8321B	Saxitoxin in water matrices by HPLC/MS/MS	2393938, 2393939, 2393940

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	03/15/2023			03/21/2023 12:40	Judith K. Clark	2393941
	03/15/2023			03/21/2023 12:41	Judith K. Clark	2393942
	03/15/2023			03/21/2023 12:53	Judith K. Clark	2393943
EPA 351.2 Rev. 2.0	03/15/2023	03/22/2023 10:42	Judith K. Clark	03/27/2023 10:40	Judith K. Clark	2393943
	03/15/2023	03/22/2023 10:42	Simonne.V. Calhoun	03/23/2023 11:16	Judith K. Clark	2393941
	03/15/2023	03/22/2023 10:42	Simonne.V. Calhoun	03/23/2023 11:18	Judith K. Clark	2393942
EPA 353.2 Rev. 2.0	03/15/2023			03/20/2023 10:56	Beverly Y. Sanders	2393942
	03/15/2023			03/20/2023 10:57	Beverly Y. Sanders	2393943
	03/15/2023			03/21/2023 10:08	Beverly Y. Sanders	2393941
EPA 365.1 Rev. 2.0	03/15/2023	03/20/2023 14:58	Adam P Silver	03/21/2023 09:38	James L Waggerby	2393941
	03/15/2023	03/20/2023 14:58	Adam P Silver	03/22/2023 11:05	James L Waggerby	2393942
	03/15/2023	03/20/2023 14:58	Adam P Silver	03/22/2023 11:06	James L Waggerby	2393943
EPA 365.1 Rev. 2.0 dissolved	03/15/2023			03/15/2023 14:53	Elise M. Gillis	2393945
	03/15/2023			03/15/2023 14:56	Elise M. Gillis	2393944
	03/15/2023			03/15/2023 14:57	Elise M. Gillis	2393946
EPA 8321B	03/15/2023	03/16/2023 10:00	Manjita Shrestha	03/16/2023 13:21	Manjita Shrestha	2393938
	03/15/2023	03/16/2023 10:00	Manjita Shrestha	03/16/2023 13:38	Manjita Shrestha	2393939
	03/15/2023	03/16/2023 10:00	Manjita Shrestha	03/16/2023 13:55	Manjita Shrestha	2393940
	03/15/2023	03/16/2023 10:00	Manjita Shrestha	03/16/2023 17:50	Manjita Shrestha	2393938
	03/15/2023	03/16/2023 10:00	Manjita Shrestha	03/16/2023 18:04	Manjita Shrestha	2393939
	03/15/2023	03/16/2023 10:00	Manjita Shrestha	03/16/2023 18:18	Manjita Shrestha	2393940