

Chemical Analysis Report

WQAP-2023-05-04-02

Florida DEP Laboratory
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DOH Accreditation E31780

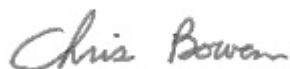
Event Description: **Algae Bloom Response NEROC-as needed**
Request ID: **RQ-2023-03-06-56**
Customer: **WQAP**
Project ID: **BLOOM-RESP**

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Certified by: Chris Bowen, Environmental Administrator

Date Certified: 12-MAY-2023 09:52



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: GEORGES LAKE AT CENTER HAB

Collection Date/Time: 05/03/2023 11:05

Field ID: NEHAB0098

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2405488	EPA 8321B	Anatoxin-a	0.25	U	ug/L	P429325	
		Cylindrospermopsin	0.10	U	ug/L	P429324	
		Desmethyl microcystin LR	0.25	U	ug/L	P429324	
		Microcystin HILR	0.25	U	ug/L	P429324	
		Microcystin HtyR	0.25	U	ug/L	P429324	
		Microcystin LA	0.10	U	ug/L	P429324	
		Microcystin LF	0.10	U	ug/L	P429324	
		Microcystin LR	0.25	U	ug/L	P429324	
		Microcystin LW	0.25	U	ug/L	P429324	
		Microcystin LY	0.10	U	ug/L	P429324	
		Microcystin RR	0.12	I	ug/L	P429324	
		Microcystin WR	0.50	U	ug/L	P429324	
		Neosaxitoxin	0.50	U	ug/L	P429325	
		Microcystin YR	0.25	U	ug/L	P429324	
		Saxitoxin	0.50	U	ug/L	P429325	
		Nodularin-R	0.10	U	ug/L	P429324	
2405490	EPA 350.1 Rev. 2.0	Ammonia-N	0.028		mg N/L	P429477	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.53		mg N/L	P429570	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.024		mg N/L	P429634	
	EPA 365.1 Rev. 2.0	Total-P	0.072		mg P/L	P429466	
2405492	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.007	I	mg P/L	P429425	

Sample Location: GEORGES LAKE AT BOAT RAMP

Collection Date/Time: 05/03/2023 11:25

Field ID: NEHAB0099

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2405489	EPA 8321B	Anatoxin-a	0.25	U	ug/L	P429375	
		Cylindrospermopsin	0.10	U	ug/L	P429374	
		Desmethyl microcystin LR	0.25	U	ug/L	P429374	
		Microcystin HILR	0.25	U	ug/L	P429374	
		Microcystin HtyR	0.25	U	ug/L	P429374	
		Microcystin LA	0.10	U	ug/L	P429374	
		Microcystin LF	0.10	U	ug/L	P429374	
		Microcystin LR	0.56	I	ug/L	P429374	
		Microcystin LW	0.25	U	ug/L	P429374	
		Microcystin LY	0.10	U	ug/L	P429374	
		Microcystin RR	1.7		ug/L	P429374	
		Microcystin WR	0.50	U	ug/L	P429374	
		Neosaxitoxin	0.50	U	ug/L	P429375	
		Microcystin YR	0.25	U	ug/L	P429374	
		Saxitoxin	0.50	U	ug/L	P429375	
		Nodularin-R	0.10	U	ug/L	P429374	
2405491	EPA 350.1 Rev. 2.0	Ammonia-N	0.012		mg N/L	P429477	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.66		mg N/L	P429570	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.020		mg N/L	P429634	
	EPA 365.1 Rev. 2.0	Total-P	0.091		mg P/L	P429467	
2405493	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.006	I	mg P/L	P429425	

Quality Assurance Report Method Blank Results

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P429477

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P429570

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P429634

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P429466

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P429467

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P429425

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

Reference Method: EPA 8321B
Batch ID: P429324

Component	Result	Code	Units
Cylindrospermopsin	0.10	U	ug/L
Desmethyl microcystin LR	0.25	U	ug/L
Microcystin H1LR	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
Microcystin WR	0.50	U	ug/L
Microcystin YR	0.25	U	ug/L
Nodularin-R	0.10	U	ug/L

Quality Assurance Report

Method Blank Results

Reference Method: EPA 8321B
Batch ID: P429325

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

Reference Method: EPA 8321B
Batch ID: P429374

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
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: P429375

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: P429477

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Ammonia-N	95.4		P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P429570

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Kjeldahl Nitrogen	95.8		P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P429634

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
NO2NO3-N	104		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P429466

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P429467

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total-P	99.9		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P429425

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
O-Phosphate-P	99.2		P	90 - 110

Reference Method: EPA 8321B
Batch ID: P429324

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Cylindrospermopsin	82.9		P	40 - 150
Desmethyl microcystin LR	89.6		P	40 - 150
Microcystin H1LR	97.0		P	40 - 150
Microcystin HtyR	102		P	40 - 150
Microcystin LA	122		P	40 - 150
Microcystin LF	98.5		P	40 - 150
Microcystin LR	93.2		P	40 - 150
Microcystin LW	106		P	40 - 150
Microcystin LY	124		P	40 - 150
Microcystin RR	100		P	40 - 150
Microcystin WR	99.2		P	40 - 150
Microcystin YR	107		P	40 - 150
Nodularin-R	98.9		P	40 - 150

Quality Assurance Report

Laboratory Control Sample Accuracy

Reference Method: EPA 8321B
Batch ID: P429325

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Anatoxin-a	119		P	40 - 150
Neosaxitoxin	117		P	40 - 150
Saxitoxin	109		P	40 - 150

Reference Method: EPA 8321B
Batch ID: P429374

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Cylindrospermopsin	86.4		P	40 - 150
Desmethyl microcystin LR	106		P	40 - 150
Microcystin HiLR	103		P	40 - 150
Microcystin HtyR	104		P	40 - 150
Microcystin LA	109		P	40 - 150
Microcystin LF	105		P	40 - 150
Microcystin LR	107		P	40 - 150
Microcystin LW	112		P	40 - 150
Microcystin LY	126		P	40 - 150
Microcystin RR	99.9		P	40 - 150
Microcystin WR	110		P	40 - 150
Microcystin YR	109		P	40 - 150
Nodularin-R	100		P	40 - 150

Reference Method: EPA 8321B
Batch ID: P429375

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Anatoxin-a	101		P	40 - 150
Neosaxitoxin	101		P	40 - 150
Saxitoxin	105		P	40 - 150

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P429477

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2405298	Ammonia-N	96.2	97.8	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P429570

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2405436	Kjeldahl Nitrogen	102	98.5	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P429634

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2405630	NO2NO3-N	105	106	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P429466

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2405437	Total-P	99.1	101	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P429467

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2405632	Total-P	103	104	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P429425

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2405438	O-Phosphate-P	93.0	93.7	P/P	90 - 110

Reference Method: EPA 8321B
Batch ID: P429324

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2405282	Cylindrospermopsin	84.1	86.5	P/P	40 - 150
2405282	Desmethyl microcystin LR	95.9	96.8	P/P	40 - 150
2405282	Microcystin HILR	99.3	107	P/P	40 - 150
2405282	Microcystin HtyR	104	111	P/P	40 - 150
2405282	Microcystin LA	110	106	P/P	40 - 150
2405282	Microcystin LF	92.0	99.3	P/P	40 - 150
2405282	Microcystin LR	103	100	P/P	40 - 150
2405282	Microcystin LW	101	108	P/P	40 - 150
2405282	Microcystin LY	121	131	P/P	40 - 150
2405282	Microcystin RR	106	109	P/P	40 - 150
2405282	Microcystin WR	106	103	P/P	40 - 150
2405282	Microcystin YR	108	108	P/P	40 - 150
2405282	Nodularin-R	103	103	P/P	40 - 150

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 8321B
Batch ID: P429325

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2405282	Anatoxin-a	114	112	P/P	40 - 150
2405282	Neosaxitoxin	91.9	90.1	P/P	40 - 150
2405282	Saxitoxin	89.1	87.1	P/P	40 - 150

Reference Method: EPA 8321B
Batch ID: P429374

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2405489	Cylindrospermopsin	95.3	95.6	P/P	40 - 150
2405489	Desmethyl microcystin LR	101	101	P/P	40 - 150
2405489	Microcystin H1LR	109	109	P/P	40 - 150
2405489	Microcystin HtyR	112	112	P/P	40 - 150
2405489	Microcystin LA	125	135	P/P	40 - 150
2405489	Microcystin LF	122	131	P/P	40 - 150
2405489	Microcystin LR	116	116	P/P	40 - 150
2405489	Microcystin LW	121	145	P/P	40 - 150
2405489	Microcystin LY	120	141	P/P	40 - 150
2405489	Microcystin RR	114	119	P/P	40 - 150
2405489	Microcystin WR	121	130	P/P	40 - 150
2405489	Microcystin YR	114	114	P/P	40 - 150
2405489	Nodularin-R	107	111	P/P	40 - 150

Reference Method: EPA 8321B
Batch ID: P429375

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2405489	Anatoxin-a	106	109	P/P	40 - 150
2405489	Neosaxitoxin	84.3	88.8	P/P	40 - 150
2405489	Saxitoxin	78.6	74.1	P/P	40 - 150

Quality Assurance Report Precision

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P429477

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2405298	Ammonia-N	1.28	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P429570

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2405436	Kjeldahl Nitrogen	1.83	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P429634

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2405630	NO2NO3-N	0.475	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P429466

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2405437	Total-P	1.92	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P429467

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2405632	Total-P	0.941	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P429425

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2405438	O-Phosphate-P	0.750	Spike	P	0 - 20

Reference Method: EPA 8321B
Batch ID: P429324

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2405282	Cylindrospermopsin	2.84	Spike	P	0 - 30
2405282	Desmethyl microcystin LR	0.952	Spike	P	0 - 30
2405282	Microcystin HtIR	7.15	Spike	P	0 - 30
2405282	Microcystin HtyR	6.40	Spike	P	0 - 30
2405282	Microcystin LA	3.15	Spike	P	0 - 30
2405282	Microcystin LF	7.65	Spike	P	0 - 30
2405282	Microcystin LR	3.12	Spike	P	0 - 30
2405282	Microcystin LW	6.83	Spike	P	0 - 30
2405282	Microcystin LY	8.50	Spike	P	0 - 30

Quality Assurance Report Precision

Reference Method: EPA 8321B
Batch ID: P429324

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2405282	Microcystin RR	3.00	Spike	P	0 - 30
2405282	Microcystin WR	2.47	Spike	P	0 - 30
2405282	Microcystin YR	0.266	Spike	P	0 - 30
2405282	Nodularin-R	0.293	Spike	P	0 - 30

Reference Method: EPA 8321B
Batch ID: P429325

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2405282	Anatoxin-a	1.82	Spike	P	0 - 30
2405282	Neosaxitoxin	1.97	Spike	P	0 - 30
2405282	Saxitoxin	2.29	Spike	P	0 - 30

Reference Method: EPA 8321B
Batch ID: P429374

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2405489	Cylindrospermopsin	0.321	Spike	P	0 - 30
2405489	Desmethyl microcystin LR	0.504	Spike	P	0 - 30
2405489	Microcystin HIR	0.582	Spike	P	0 - 30
2405489	Microcystin HtyR	0.408	Spike	P	0 - 30
2405489	Microcystin LA	7.83	Spike	P	0 - 30
2405489	Microcystin LF	6.65	Spike	P	0 - 30
2405489	Microcystin LR	0.151	Spike	P	0 - 30
2405489	Microcystin LW	17.6	Spike	P	0 - 30
2405489	Microcystin LY	16.1	Spike	P	0 - 30
2405489	Microcystin RR	3.71	Spike	P	0 - 30
2405489	Microcystin WR	7.81	Spike	P	0 - 30
2405489	Microcystin YR	0.462	Spike	P	0 - 30
2405489	Nodularin-R	4.22	Spike	P	0 - 30

Reference Method: EPA 8321B
Batch ID: P429375

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2405489	Anatoxin-a	3.02	Spike	P	0 - 30
2405489	Neosaxitoxin	5.18	Spike	P	0 - 30
2405489	Saxitoxin	5.80	Spike	P	0 - 30

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

Quality Assurance Report Surrogates

Lab Sample ID: 2405488
Field Sample ID: NEHAB0098

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	Microcystin LR ethyl-d5	81.0	P	30 - 160
EPA 8321B	Neosaxitoxin-15N7	86.9	P	30 - 160

Lab Sample ID: 2405489
Field Sample ID: NEHAB0099

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	Microcystin LR ethyl-d5	89.4	P	30 - 160
EPA 8321B	Neosaxitoxin-15N7	86.6	P	30 - 160

Quality Assurance Report Calibration Verification

Reference Method: EPA 8321B

Run ID: A118883

Included Lab Sample IDs: 2405488, 2405489

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Cylindrospermopsin	87.8	89.0	P/P	50 - 160
Desmethyl microcystin LR	88.1	93.6	P/P	50 - 160
Microcystin HILR	102	103	P/P	50 - 160
Microcystin HtyR	103	103	P/P	50 - 160
Microcystin LA	116	111	P/P	50 - 160
Microcystin LF	92.7	72.4	P/P	50 - 160
Microcystin LR	97.7	91.9	P/P	50 - 160
Microcystin LW	97.9	85.2	P/P	50 - 160
Microcystin LY	111	102	P/P	50 - 160
Microcystin RR	100	94.0	P/P	50 - 160
Microcystin WR	95.0	99.5	P/P	50 - 160
Microcystin YR	104	95.9	P/P	50 - 160
Nodularin-R	94.2	92.0	P/P	50 - 160

Reference Method: EPA 8321B

Run ID: A118886

Included Lab Sample IDs: 2405488, 2405489

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Anatoxin-a	106	101	P/P	50 - 160
Neosaxitoxin	104	101	P/P	50 - 160
Saxitoxin	101	88.2	P/P	50 - 160

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Run ID: A118956

Included Lab Sample IDs: 2405492, 2405493

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	97.9	99.3	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A118977

Included Lab Sample IDs: 2405490, 2405491

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	98.8	98.0	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A119007

Included Lab Sample IDs: 2405490, 2405491

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

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A119057

Included Lab Sample IDs: 2405490, 2405491

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
NO2NO3-N	104	104	P/P	90 - 110

Quality Assurance Report

Calibration Verification

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A119059

Included Lab Sample IDs: 2405490, 2405491

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	104	96.9	P/P	90 - 110
Kjeldahl Nitrogen	96.9	97.8	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	95.4	96.2	97.8			1.28
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	95.8	102	98.5			1.83
EPA 353.2 Rev. 2.0	NO ₂ NO ₃ -N	104	105	106			0.475
EPA 365.1 Rev. 2.0	Total-P	101	99.1	101			1.92
	Total-P	99.9	103	104			0.941
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	99.2	93.0	93.7			0.750
EPA 8321B	Anatoxin-a	119	114	112			1.82
	Anatoxin-a	101	106	109			3.02
	Cylindrospermopsin	82.9	84.1	86.5			2.84
	Cylindrospermopsin	86.4	95.3	95.6			0.321
	Desmethyl microcystin LR	89.6	95.9	96.8			0.952
	Desmethyl microcystin LR	106	101	101			0.504
	Microcystin HiLR	97.0	99.3	107			7.15
	Microcystin HiLR	103	109	109			0.582
	Microcystin HtyR	102	104	111			6.40
	Microcystin HtyR	104	112	112			0.408
	Microcystin LA	122	110	106			3.15
	Microcystin LA	109	125	135			7.83
	Microcystin LF	98.5	92.0	99.3			7.65
	Microcystin LF	105	122	131			6.65
	Microcystin LR	93.2	103	100			3.12
	Microcystin LR	107	116	116			0.151
	Microcystin LW	106	101	108			6.83
	Microcystin LW	112	121	145			17.6
	Microcystin LY	124	121	131			8.50
	Microcystin LY	126	120	141			16.1
	Microcystin RR	100	106	109			3.00
	Microcystin RR	99.9	114	119			3.71
	Microcystin WR	99.2	106	103			2.47
	Microcystin WR	110	121	130			7.81
	Microcystin YR	107	108	108			0.266
	Microcystin YR	109	114	114			0.462
	Neosaxitoxin	117	91.9	90.1			1.97
	Neosaxitoxin	101	84.3	88.8			5.18
	Nodularin-R	98.9	103	103			0.293
	Nodularin-R	100	107	111			4.22
	Saxitoxin	109	89.1	87.1			2.29
	Saxitoxin	105	78.6	74.1			5.80

Reference Method Descriptions

Method	Description	Associated Samples
EPA 350.1 Rev. 2.0	Ammonia in aqueous matrices as mg N/L	2405490, 2405491
EPA 351.2 Rev. 2.0	Total Kjeldahl Nitrogen in aqueous matrices	2405490, 2405491
EPA 353.2 Rev. 2.0	Nitrite/Nitrate in aqueous matrices as mg N/L	2405490, 2405491
EPA 365.1 Rev. 2.0	Total Phosphorus in aqueous matrices as mg P/L	2405490, 2405491
EPA 365.1 Rev. 2.0 dissolved	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	2405492, 2405493
EPA 8321B	Microcystins in water matrices by HPLC/MS/MS	2405488, 2405489
EPA 8321B	Saxitoxin in water matrices by HPLC/MS/MS	2405488, 2405489

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	05/04/2023			05/05/2023 12:28	Khloe J Berg	2405490
	05/04/2023			05/05/2023 12:30	Khloe J Berg	2405491
EPA 351.2 Rev. 2.0	05/04/2023	05/09/2023 11:59	Dana G. Hughes	05/10/2023 10:29	Samantha L Bates	2405490
	05/04/2023	05/09/2023 11:59	Dana G. Hughes	05/10/2023 10:33	Samantha L Bates	2405491
EPA 353.2 Rev. 2.0	05/04/2023			05/10/2023 10:12	Beverly Y. Sanders	2405490
	05/04/2023			05/10/2023 10:13	Beverly Y. Sanders	2405491
EPA 365.1 Rev. 2.0	05/04/2023	05/05/2023 14:00	Alexis Price	05/08/2023 09:51	James L Waggerby	2405490
	05/04/2023	05/05/2023 14:00	Alexis Price	05/08/2023 10:00	James L Waggerby	2405491
EPA 365.1 Rev. 2.0 dissolved	05/04/2023			05/04/2023 14:13	Elise M. Gillis	2405492
	05/04/2023			05/04/2023 14:14	Elise M. Gillis	2405493
EPA 8321B	05/04/2023	05/04/2023 12:00	Manjita Shrestha	05/04/2023 17:34	Manjita Shrestha	2405488
	05/04/2023	05/04/2023 12:00	Manjita Shrestha	05/05/2023 02:11	Manjita Shrestha	2405488
	05/04/2023	05/04/2023 13:00	Manjita Shrestha	05/04/2023 18:44	Manjita Shrestha	2405489
	05/04/2023	05/04/2023 13:00	Manjita Shrestha	05/05/2023 03:35	Manjita Shrestha	2405489