

Chemical Analysis Report

WQAP-2023-01-20-01

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

Event Description: **Algal Bloom Response - Orange Co**
Request ID: **RQ-2023-01-16-58**
Customer: **WQAP**
Project ID: **BLOOM-RESP**

Send Reports to:
FL Dept. of Environmental Protection
3319 Maguire Blvd
Orlando, FL 32083
Attn: Matthew Bearden

For additional information please contact
Colin Wright, Ph.D.
Liang-Tsair Lin, Ph.D.
Kerry Tate, Ph.D.
Dr. rer. nat. Bettina Steinbock
Thekkekalathil Chandrasekhar, Ph.D, QA Officer
Phone (850) 245-8085

Certified by: Thekkekalathil Chandrasekhar, Environmental Consultant

Date Certified: 08-FEB-2023 10:26



Case Narrative

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

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

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

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

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

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

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

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

Precision is reported as relative percent difference unless otherwise noted.

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

QC Codes used in this report may include:

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

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

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

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

Sample Location: Lake Burkett - Center

Collection Date/Time: 01/19/2023 08:25

Field ID: HABOC0013_Lake Burkett

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2382101	EPA 8321B	Anatoxin-a	0.25	U	ug/L	P424881	
		Cylindrospermopsin	0.10	U	ug/L	P424880	
		Desmethyl microcystin LR	0.25	U	ug/L	P424880	
		Microcystin HILR	0.25	U	ug/L	P424880	
		Microcystin HtyR	0.25	U	ug/L	P424880	
		Microcystin LA	0.10	U	ug/L	P424880	
		Microcystin LF	0.10	U	ug/L	P424880	
		Microcystin LR	0.25	U	ug/L	P424880	
		Microcystin LW	0.25	U	ug/L	P424880	
		Microcystin LY	0.10	U	ug/L	P424880	
		Microcystin RR	0.10	U	ug/L	P424880	
		Microcystin WR	0.50	U	ug/L	P424880	
		Neosaxitoxin	0.50	U	ug/L	P424881	
		Microcystin YR	0.25	U	ug/L	P424880	
		Saxitoxin	0.50	U	ug/L	P424881	
		Nodularin-R	0.10	U	ug/L	P424880	
2382103	EPA 350.1 Rev. 2.0	Ammonia-N	0.016		mg N/L	P425410	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.69		mg N/L	P424999	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.034		mg N/L	P425090	
	EPA 365.1 Rev. 2.0	Total-P	0.018		mg P/L	P424979	
2382105	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P424813	

Sample Location: Lake Martha - NE Shore

Collection Date/Time: 01/19/2023 09:05

Field ID: HABOC0014_Lake Martha

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2382102	EPA 8321B	Anatoxin-a	0.25	U	ug/L	P424881	
		Cylindrospermopsin	0.10	U	ug/L	P424880	
		Desmethyl microcystin LR	0.25	U	ug/L	P424880	
		Microcystin HILR	0.25	U	ug/L	P424880	
		Microcystin HtyR	0.25	U	ug/L	P424880	
		Microcystin LA	0.18	I	ug/L	P424880	
		Microcystin LF	0.10	U	ug/L	P424880	
		Microcystin LR	0.25	U	ug/L	P424880	
		Microcystin LW	0.25	U	ug/L	P424880	
		Microcystin LY	0.10	U	ug/L	P424880	
		Microcystin RR	0.10	U	ug/L	P424880	
		Microcystin WR	0.50	U	ug/L	P424880	
		Neosaxitoxin	0.50	U	ug/L	P424881	
		Microcystin YR	0.25	U	ug/L	P424880	
		Saxitoxin	0.50	U	ug/L	P424881	
		Nodularin-R	0.10	U	ug/L	P424880	
2382104	EPA 350.1 Rev. 2.0	Ammonia-N	0.012		mg N/L	P425410	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.64		mg N/L	P424999	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P425090	
	EPA 365.1 Rev. 2.0	Total-P	0.022		mg P/L	P424980	
2382106	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P424813	

Quality Assurance Report Method Blank Results

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P425410

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P424999

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P425090

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P424979

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P424980

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P424813

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

Reference Method: EPA 8321B
Batch ID: P424880

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: P424881

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: P425410

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P424999

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P425090

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
NO2NO3-N	98.5		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P424979

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total-P	105		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P424980

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P424813

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
O-Phosphate-P	98.8		P	90 - 110

Reference Method: EPA 8321B
Batch ID: P424880

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Cylindrospermopsin	102		P	40 - 150
Desmethyl microcystin LR	105		P	40 - 150
Microcystin HILR	97.8		P	40 - 150
Microcystin HtyR	101		P	40 - 150
Microcystin LA	99.4		P	40 - 150
Microcystin LF	91.2		P	40 - 150
Microcystin LR	98.0		P	40 - 150
Microcystin LW	104		P	40 - 150
Microcystin LY	86.0		P	40 - 150
Microcystin RR	96.4		P	40 - 150
Microcystin WR	96.1		P	40 - 150
Microcystin YR	94.1		P	40 - 150
Nodularin-R	95.7		P	40 - 150

Quality Assurance Report

Laboratory Control Sample Accuracy

Reference Method: EPA 8321B
Batch ID: P424881

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Anatoxin-a	97.4		P	40 - 150
Neosaxitoxin	107		P	40 - 150
Saxitoxin	86.2		P	40 - 150

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P425410

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2382103	Ammonia-N	98.0	98.8	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P424999

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2382103	Kjeldahl Nitrogen	94.8	106	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P425090

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2382103	NO2NO3-N	98.9	97.9	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P424979

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2382000	Total-P	109	108	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P424980

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2382116	Total-P	105	108	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P424813

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2381933	O-Phosphate-P	98.9	100	P/P	90 - 110

Reference Method: EPA 8321B
Batch ID: P424880

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2381993	Cylindrospermopsin	99.9	105	P/P	40 - 150
2381993	Desmethyl microcystin LR	132	134	P/P	40 - 150
2381993	Microcystin HilR	125	121	P/P	40 - 150
2381993	Microcystin HtyR	116	117	P/P	40 - 150
2381993	Microcystin LA	101	90.2	P/P	40 - 150
2381993	Microcystin LF	111	112	P/P	40 - 150
2381993	Microcystin LR	125	125	P/P	40 - 150
2381993	Microcystin LW	113	129	P/P	40 - 150
2381993	Microcystin LY	110	102	P/P	40 - 150
2381993	Microcystin RR	102	105	P/P	40 - 150
2381993	Microcystin WR	113	115	P/P	40 - 150
2381993	Microcystin YR	110	112	P/P	40 - 150
2381993	Nodularin-R	113	113	P/P	40 - 150

Quality Assurance Report

Matrix Spike Accuracy

Reference Method: EPA 8321B
Batch ID: P424881

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2381993	Anatoxin-a	90.0	90.0	P/P	40 - 150
2381993	Neosaxitoxin	61.9	58.7	P/P	40 - 150
2381993	Saxitoxin	53.3	53.2	P/P	40 - 150

Quality Assurance Report Precision

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P425410

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2382103	Ammonia-N	0.611	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P424999

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2382103	Kjeldahl Nitrogen	8.36	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P425090

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2382103	NO2NO3-N	0.866	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P424979

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2382000	Total-P	0.464	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P424980

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2382116	Total-P	2.21	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P424813

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2381933	O-Phosphate-P	0.858	Spike	P	0 - 20

Reference Method: EPA 8321B
Batch ID: P424880

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2381993	Cylindrospermopsin	5.40	Spike	P	0 - 30
2381993	Desmethyl microcystin LR	1.50	Spike	P	0 - 30
2381993	Microcystin HtIR	3.51	Spike	P	0 - 30
2381993	Microcystin HtyR	1.23	Spike	P	0 - 30
2381993	Microcystin LA	11.5	Spike	P	0 - 30
2381993	Microcystin LF	0.473	Spike	P	0 - 30
2381993	Microcystin LR	0.128	Spike	P	0 - 30
2381993	Microcystin LW	13.1	Spike	P	0 - 30
2381993	Microcystin LY	8.09	Spike	P	0 - 30

Quality Assurance Report Precision

Reference Method: EPA 8321B
Batch ID: P424880

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2381993	Microcystin RR	2.63	Spike	P	0 - 30
2381993	Microcystin WR	1.67	Spike	P	0 - 30
2381993	Microcystin YR	1.74	Spike	P	0 - 30
2381993	Nodularin-R	0.650	Spike	P	0 - 30

Reference Method: EPA 8321B
Batch ID: P424881

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2381993	Anatoxin-a	0.0754	Spike	P	0 - 30
2381993	Neosaxitoxin	5.35	Spike	P	0 - 30
2381993	Saxitoxin	0.348	Spike	P	0 - 30

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

Quality Assurance Report Surrogates

Lab Sample ID: 2382101

Field Sample ID: HABOC0013_Lake Burkett

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	Microcystin LR ethyl-d5	76.5	P	30 - 160
EPA 8321B	Neosaxitoxin-15N7	114	P	30 - 160

Lab Sample ID: 2382102

Field Sample ID: HABOC0014_Lake Martha

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	Microcystin LR ethyl-d5	74.0	P	30 - 160
EPA 8321B	Neosaxitoxin-15N7	107	P	30 - 160

Quality Assurance Report Calibration Verification

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Run ID: A117012

Included Lab Sample IDs: 2382105, 2382106

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	100	97.8	P/P	90 - 110

Reference Method: EPA 8321B

Run ID: A117101

Included Lab Sample IDs: 2382101, 2382102

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Cylindrospermopsin	105	109	P/P	50 - 160
Desmethyl microcystin LR	105	113	P/P	50 - 160
Microcystin HILR	103	109	P/P	50 - 160
Microcystin HtyR	99.2	106	P/P	50 - 160
Microcystin LA	88.3	94.5	P/P	50 - 160
Microcystin LF	99.5	110	P/P	50 - 160
Microcystin LR	99.5	102	P/P	50 - 160
Microcystin LW	90.3	102	P/P	50 - 160
Microcystin LY	81.3	115	P/P	50 - 160
Microcystin RR	97.4	99.9	P/P	50 - 160
Microcystin WR	97.3	103	P/P	50 - 160
Microcystin YR	97.1	97.5	P/P	50 - 160
Nodularin-R	98.0	103	P/P	50 - 160

Reference Method: EPA 8321B

Run ID: A117112

Included Lab Sample IDs: 2382101, 2382102

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Anatoxin-a	111	107	P/P	50 - 160
Neosaxitoxin	126	116	P/P	50 - 160
Saxitoxin	94.5	88.3	P/P	50 - 160

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A117119

Included Lab Sample IDs: 2382103, 2382104

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	100	99.8	P/P	90 - 110
Total-P	99.8	100	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A117138

Included Lab Sample IDs: 2382103, 2382104

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
NO2NO3-N	99.0	98.5	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A117148

Included Lab Sample IDs: 2382103, 2382104

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	105	103	P/P	90 - 110

Quality Assurance Report

Calibration Verification

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A117272

Included Lab Sample IDs: 2382103, 2382104

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	99.9	99.9	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	101	98.0	98.8			0.611
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	105	94.8	106			8.36
EPA 353.2 Rev. 2.0	NO2NO3-N	98.5	98.9	97.9			0.866
EPA 365.1 Rev. 2.0	Total-P	105	109	108			0.464
	Total-P	107	105	108			2.21
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	98.8	98.9	100			0.858
EPA 8321B	Anatoxin-a	97.4	90.0	90.0			0.0754
	Cylindrospermopsin	102	99.9	105			5.40
	Desmethyl microcystin LR	105	132	134			1.50
	Microcystin HiLR	97.8	125	121			3.51
	Microcystin HtyR	101	116	117			1.23
	Microcystin LA	99.4	101	90.2			11.5
	Microcystin LF	91.2	111	112			0.473
	Microcystin LR	98.0	125	125			0.128
	Microcystin LW	104	113	129			13.1
	Microcystin LY	86.0	110	102			8.09
	Microcystin RR	96.4	102	105			2.63
	Microcystin WR	96.1	113	115			1.67
	Microcystin YR	94.1	110	112			1.74
	Neosaxitoxin	107	61.9	58.7			5.35
	Nodularin-R	95.7	113	113			0.650
	Saxitoxin	86.2	53.3	53.2			0.348

Reference Method Descriptions

Method	Description	Associated Samples
EPA 350.1 Rev. 2.0	Ammonia in aqueous matrices as mg N/L	2382103, 2382104
EPA 351.2 Rev. 2.0	Total Kjeldahl Nitrogen in aqueous matrices	2382103, 2382104
EPA 353.2 Rev. 2.0	Nitrite/Nitrate in aqueous matrices as mg N/L	2382103, 2382104
EPA 365.1 Rev. 2.0	Total Phosphorus in aqueous matrices as mg P/L	2382103, 2382104
EPA 365.1 Rev. 2.0 dissolved	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	2382105, 2382106
EPA 8321B	Microcystins in water matrices by HPLC/MS/MS	2382101, 2382102
EPA 8321B	Saxitoxin in water matrices by HPLC/MS/MS	2382101, 2382102

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	01/20/2023			02/06/2023 10:17	Ping Hua	2382103
	01/20/2023			02/06/2023 10:21	Ping Hua	2382104
EPA 351.2 Rev. 2.0	01/20/2023	01/26/2023 10:00	Simonne.V. Calhoun	01/27/2023 17:07	Judith K. Clark	2382103
	01/20/2023	01/26/2023 10:00	Simonne.V. Calhoun	01/27/2023 17:12	Judith K. Clark	2382104
EPA 353.2 Rev. 2.0	01/20/2023			01/27/2023 10:21	Beverly Y. Sanders	2382103
	01/20/2023			01/27/2023 10:33	Beverly Y. Sanders	2382104
EPA 365.1 Rev. 2.0	01/20/2023	01/25/2023 13:55	Adam P Silver	01/26/2023 14:19	James L Waggerby	2382103
	01/20/2023	01/25/2023 13:55	Adam P Silver	01/26/2023 14:29	James L Waggerby	2382104
EPA 365.1 Rev. 2.0 dissolved	01/20/2023			01/20/2023 15:51	Chandler E Cox	2382105
	01/20/2023			01/20/2023 15:52	Chandler E Cox	2382106
EPA 8321B	01/20/2023	01/25/2023 09:00	Manjita Shrestha	01/25/2023 17:49	Manjita Shrestha	2382101
	01/20/2023	01/25/2023 09:00	Manjita Shrestha	01/25/2023 18:05	Manjita Shrestha	2382102
	01/20/2023	01/25/2023 09:00	Manjita Shrestha	01/26/2023 02:26	Manjita Shrestha	2382101
	01/20/2023	01/25/2023 09:00	Manjita Shrestha	01/26/2023 02:40	Manjita Shrestha	2382102