

Chemical Analysis Report

SO-DIST-2023-10-27-01

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

Event Description: **Algal Bloom Response -SOROC w/ blank**
Request ID: **RQ-2023-09-18-61**
Customer: **SO-DIST**
Project ID: **BLOOM-RESP**

Send Reports to:
FL Dept. of Environmental Protection
FLDEP South District Office
2295 Victoria Ave. Suite 314
Fort Myers, FL 33901-3381
Attn: John Barrington

For additional information please contact
Colin Wright, Ph.D.
Chris Bowen, B.S.
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: 09-NOV-2023 11:14



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: Peace River - Veterans Park Ramp

Collection Date/Time: 10/26/2023 10:15

Field ID: HAB-SD-102623-1015

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2447595	DEP SOP: NU-094-1	Color (true)	190		PCU	P437092	
2447596	EPA 350.1 Rev. 2.0	Ammonia-N	0.064		mg N/L	P437196	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.0		mg N/L	P437122	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.50		mg N/L	P437366	
	EPA 365.1 Rev. 2.0	Total-P	0.75		mg P/L	P437172	
2447597	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.58		mg P/L	P437099	
2447600	EPA 8321B	Anatoxin-a	0.25	U	ug/L	P437079	
		Cylindrospermopsin	0.10	U	ug/L	P437078	
		Desmethyl microcystin LR	0.25	U	ug/L	P437078	
		Microcystin HILR	0.25	U	ug/L	P437078	
		Microcystin HtyR	0.25	U	ug/L	P437078	
		Microcystin LA	0.10	U	ug/L	P437078	
		Microcystin LF	0.10	U	ug/L	P437078	
		Microcystin LR	0.25	U	ug/L	P437078	
		Microcystin LW	0.25	U	ug/L	P437078	
		Microcystin LY	0.10	U	ug/L	P437078	
		Microcystin RR	0.10	U	ug/L	P437078	
		Microcystin WR	0.50	U	ug/L	P437078	
		Neosaxitoxin	0.50	U	ug/L	P437079	
		Microcystin YR	0.25	U	ug/L	P437078	
		Saxitoxin	0.50	U	ug/L	P437079	
		Nodularin-R	0.10	U	ug/L	P437078	

Ref. Method and Comment:

EPA 351.2 Rev. 2.0: Batch matrix spike recoveries are unavailable because of high analyte concentration in the QC sample.

Sample Location: Peace River - Veterans Park Ramp

Collection Date/Time: 10/26/2023 12:00

Field ID: FB_10262023

Matrix: W-FIELD-BK

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2447598	EPA 350.1 Rev. 2.0	Ammonia-N	0.002	U	mg N/L	P437196	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.080	U	mg N/L	P437122	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P437366	
	EPA 365.1 Rev. 2.0	Total-P	0.002	U	mg P/L	P437172	
2447599	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P437099	
2447601	EPA 8321B	Anatoxin-a	0.25	U	ug/L	P437079	
		Cylindrospermopsin	0.10	U	ug/L	P437078	
		Desmethyl microcystin LR	0.25	U	ug/L	P437078	
		Microcystin HILR	0.25	U	ug/L	P437078	
		Microcystin HtyR	0.25	U	ug/L	P437078	
		Microcystin LA	0.10	U	ug/L	P437078	
		Microcystin LF	0.10	U	ug/L	P437078	
		Microcystin LR	0.25	U	ug/L	P437078	
		Microcystin LW	0.25	U	ug/L	P437078	
		Microcystin LY	0.10	U	ug/L	P437078	
		Microcystin RR	0.10	U	ug/L	P437078	
		Microcystin WR	0.50	U	ug/L	P437078	
		Neosaxitoxin	0.50	U	ug/L	P437079	
		Microcystin YR	0.25	U	ug/L	P437078	
		Saxitoxin	0.50	U	ug/L	P437079	
		Nodularin-R	0.10	U	ug/L	P437078	

Ref. Method and Comment:

EPA 351.2 Rev. 2.0: Batch matrix spike recoveries are unavailable because of high analyte concentration in the QC sample.

Quality Assurance Report Method Blank Results

Reference Method: DEP SOP: NU-094-1
Batch ID: P437092

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P437196

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P437122

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P437366

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P437172

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P437099

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

Reference Method: EPA 8321B
Batch ID: P437078

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: P437079

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: DEP SOP: NU-094-1
Batch ID: P437092

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Color (true)	100		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P437196

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: P437122

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Kjeldahl Nitrogen	98.4		P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P437366

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P437172

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P437099

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
O-Phosphate-P	98.7		P	90 - 110

Reference Method: EPA 8321B
Batch ID: P437078

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Cylindrospermopsin	97.5		P	40 - 160
Desmethyl microcystin LR	97.8		P	40 - 160
Microcystin H1LR	105		P	40 - 160
Microcystin HtyR	104		P	40 - 160
Microcystin LA	102		P	40 - 160
Microcystin LF	116		P	40 - 160
Microcystin LR	119		P	40 - 160
Microcystin LW	104		P	40 - 160
Microcystin LY	104		P	40 - 160
Microcystin RR	94.6		P	40 - 160
Microcystin WR	94.4		P	40 - 160
Microcystin YR	112		P	40 - 160
Nodularin-R	94.6		P	40 - 160

Quality Assurance Report

Laboratory Control Sample Accuracy

Reference Method: EPA 8321B
Batch ID: P437079

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Anatoxin-a	70.8		P	40 - 150
Neosaxitoxin	73.6		P	40 - 150
Saxitoxin	80.4		P	40 - 150

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P437196

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2447606	Ammonia-N	102	102	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P437366

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2447475	NO2NO3-N	97.0	99.0	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P437172

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2447570	Total-P	106	109	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P437099

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2447738	O-Phosphate-P	97.3	97.5	P/P	90 - 110

Reference Method: EPA 8321B
Batch ID: P437078

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2447526	Cylindrospermopsin	100	103	P/P	40 - 160
2447526	Desmethyl microcystin LR	107	104	P/P	40 - 160
2447526	Microcystin HilR	109	110	P/P	40 - 160
2447526	Microcystin HtyR	103	103	P/P	40 - 160
2447526	Microcystin LA	102	101	P/P	40 - 160
2447526	Microcystin LF	118	124	P/P	40 - 160
2447526	Microcystin LR	116	115	P/P	40 - 160
2447526	Microcystin LW	106	110	P/P	40 - 160
2447526	Microcystin LY	105	109	P/P	40 - 160
2447526	Microcystin RR	101	99.1	P/P	40 - 160
2447526	Microcystin WR	99.0	97.4	P/P	40 - 160
2447526	Microcystin YR	117	115	P/P	40 - 160
2447526	Nodularin-R	103	104	P/P	40 - 160

Reference Method: EPA 8321B
Batch ID: P437079

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2447526	Anatoxin-a	85.5	77.4	P/P	40 - 150
2447526	Neosaxitoxin	56.9	55.0	P/P	40 - 150
2447526	Saxitoxin	53.2	60.6	P/P	40 - 150

Quality Assurance Report Precision

Reference Method: DEP SOP: NU-094-1
Batch ID: P437092

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2447568	Color (true)	12.5	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P437196

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2447606	Ammonia-N	0.392	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P437122

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2447642	Kjeldahl Nitrogen	5.39	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P437366

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2447475	NO2NO3-N	2.04	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P437172

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2447570	Total-P	2.98	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P437099

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2447738	O-Phosphate-P	0.189	Spike	P	0 - 20

Reference Method: EPA 8321B
Batch ID: P437078

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2447526	Cylindrospermopsin	2.32	Spike	P	0 - 30
2447526	Desmethyl microcystin LR	2.86	Spike	P	0 - 30
2447526	Microcystin HtLR	1.13	Spike	P	0 - 30
2447526	Microcystin HtyR	0.0354	Spike	P	0 - 30
2447526	Microcystin LA	0.196	Spike	P	0 - 30
2447526	Microcystin LF	4.85	Spike	P	0 - 30
2447526	Microcystin LR	0.900	Spike	P	0 - 30
2447526	Microcystin LW	3.42	Spike	P	0 - 30
2447526	Microcystin LY	3.34	Spike	P	0 - 30

Quality Assurance Report Precision

Reference Method: EPA 8321B
Batch ID: P437078

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2447526	Microcystin RR	1.85	Spike	P	0 - 30
2447526	Microcystin WR	1.69	Spike	P	0 - 30
2447526	Microcystin YR	1.48	Spike	P	0 - 30
2447526	Nodularin-R	1.39	Spike	P	0 - 30

Reference Method: EPA 8321B
Batch ID: P437079

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2447526	Anatoxin-a	9.96	Spike	P	0 - 30
2447526	Neosaxitoxin	3.28	Spike	P	0 - 30
2447526	Saxitoxin	12.9	Spike	P	0 - 30

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

Quality Assurance Report Surrogates

Lab Sample ID: 2447600
Field Sample ID: HAB-SD-102623-1015

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	Anatoxin-a 13C4	76.6	P	30 - 160
EPA 8321B	Microcystin LR ethyl-d5	120	P	30 - 160

Lab Sample ID: 2447601
Field Sample ID: FB_10262023

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	Anatoxin-a 13C4	38.4	P	30 - 160
EPA 8321B	Microcystin LR ethyl-d5	94.4	P	30 - 160

Quality Assurance Report Calibration Verification

Reference Method: EPA 8321B

Run ID: A122393

Included Lab Sample IDs: 2447600, 2447601

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Cylindrospermopsin	92.9	92.3	P/P	60 - 160
Desmethyl microcystin LR	97.8	91.9	P/P	50 - 160
Microcystin HILR	102	94.9	P/P	60 - 160
Microcystin HtyR	102	95.1	P/P	60 - 160
Microcystin LA	98.1	92.1	P/P	50 - 160
Microcystin LF	111	101	P/P	60 - 160
Microcystin LR	113	101	P/P	60 - 160
Microcystin LW	106	93.4	P/P	60 - 160
Microcystin LY	108	94.6	P/P	60 - 160
Microcystin RR	92.0	90.1	P/P	60 - 160
Microcystin WR	94.9	91.0	P/P	60 - 160
Microcystin YR	112	101	P/P	60 - 160
Nodularin-R	94.3	92.8	P/P	60 - 160

Reference Method: EPA 8321B

Run ID: A122394

Included Lab Sample IDs: 2447600, 2447601

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Anatoxin-a	67.3	70.6	P/P	50 - 160
Neosaxitoxin	80.1	76.8	P/P	50 - 160
Saxitoxin	84.5	89.7	P/P	50 - 160

Reference Method: DEP SOP: NU-094-1

Run ID: A122416

Included Lab Sample IDs: 2447595

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	99.6	99.2	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Run ID: A122420

Included Lab Sample IDs: 2447597, 2447599

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	98.9	97.9	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A122464

Included Lab Sample IDs: 2447596, 2447598

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	99.6	99.6	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A122491

Included Lab Sample IDs: 2447598

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

Quality Assurance Report Calibration Verification

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A122523

Included Lab Sample IDs: 2447596

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: A122558

Included Lab Sample IDs: 2447596, 2447598

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

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A122585

Included Lab Sample IDs: 2447596, 2447598

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	91.9	92.7	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	
DEP SOP: NU-094-1	Color (true)	100				12.5	
EPA 350.1 Rev. 2.0	Ammonia-N	97.8	102	102			0.392
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	98.4					5.39
EPA 353.2 Rev. 2.0	NO ₂ NO ₃ -N	100	97.0	99.0			2.04
EPA 365.1 Rev. 2.0	Total-P	108	106	109			2.98
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	98.7	97.3	97.5			0.189
EPA 8321B	Anatoxin-a	70.8	85.5	77.4			9.96
	Cylindrospermopsin	97.5	100	103			2.32
	Desmethyl microcystin LR	97.8	107	104			2.86
	Microcystin H ₁ LR	105	109	110			1.13
	Microcystin H ₂ LR	104	103	103			0.0354
	Microcystin LA	102	102	101			0.196
	Microcystin LF	116	118	124			4.85
	Microcystin LR	119	116	115			0.900
	Microcystin LW	104	106	110			3.42
	Microcystin LY	104	105	109			3.34
	Microcystin RR	94.6	101	99.1			1.85
	Microcystin WR	94.4	99.0	97.4			1.69
	Microcystin YR	112	117	115			1.48
	Neosaxitoxin	73.6	56.9	55.0			3.28
	Nodularin-R	94.6	103	104			1.39
	Saxitoxin	80.4	53.2	60.6			12.9

Reference Method Descriptions

Method	Description	Associated Samples
DEP SOP: NU-094-1	True Color measured at 450 nm (not valid for NPDES monitoring)	2447595
EPA 350.1 Rev. 2.0	Ammonia in aqueous matrices as mg N/L	2447596, 2447598
EPA 351.2 Rev. 2.0	Total Kjeldahl Nitrogen in aqueous matrices	2447596, 2447598
EPA 353.2 Rev. 2.0	Nitrite/Nitrate in aqueous matrices as mg N/L	2447596, 2447598
EPA 365.1 Rev. 2.0	Total Phosphorus in aqueous matrices as mg P/L	2447596, 2447598
EPA 365.1 Rev. 2.0 dissolved	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	2447597, 2447599
EPA 8321B	Microcystins in water matrices by HPLC/MS/MS	2447600, 2447601
EPA 8321B	Saxitoxin in water matrices by HPLC/MS/MS	2447600, 2447601

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
DEP SOP: NU-094-1	10/27/2023			10/27/2023 14:48	Chandler E Cox	2447595
EPA 350.1 Rev. 2.0	10/27/2023			10/31/2023 12:59	Ping Hua	2447596
	10/27/2023			10/31/2023 13:01	Ping Hua	2447598
EPA 351.2 Rev. 2.0	10/27/2023	10/30/2023 13:30	Simonne.V. Calhoun	11/01/2023 15:25	Samantha L Bates	2447596
	10/27/2023	10/30/2023 13:30	Simonne.V. Calhoun	11/01/2023 15:26	Samantha L Bates	2447598
EPA 353.2 Rev. 2.0	10/27/2023			11/02/2023 14:54	Fadila Guebre	2447596
	10/27/2023			11/02/2023 14:55	Fadila Guebre	2447598
EPA 365.1 Rev. 2.0	10/27/2023	10/31/2023 12:07	Adam P Silver	11/01/2023 13:28	Chandler E Cox	2447598
	10/27/2023	10/31/2023 12:07	Adam P Silver	11/02/2023 13:46	Chandler E Cox	2447596
EPA 365.1 Rev. 2.0 dissolved	10/27/2023			10/27/2023 16:25	Elise M. Gillis	2447599
	10/27/2023			10/27/2023 16:28	Elise M. Gillis	2447597
EPA 8321B	10/27/2023	10/27/2023 12:00	Hana Lee	10/28/2023 06:35	Tae K Lee	2447600
	10/27/2023	10/27/2023 12:00	Hana Lee	10/28/2023 06:49	Tae K Lee	2447601
	10/27/2023	10/27/2023 12:00	Hana Lee	10/28/2023 10:17	Tae K Lee	2447600
	10/27/2023	10/27/2023 12:00	Hana Lee	10/28/2023 10:32	Tae K Lee	2447601