

Chemical Analysis Report

SO-DIST-2024-01-23-02

Florida DEP Laboratory
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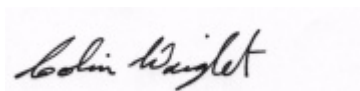
Event Description: **Algal Bloom Response -SOROC**
Request ID: **RQ-2023-10-02-35**
Customer: **SO-DIST**
Project ID: **BLOOM-RESP**

Send Reports to:
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FLDEP South District Office
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Date Certified: 05-FEB-2024 08:59



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 Glenada - Boat ramp

Collection Date/Time: 01/22/2024 13:20

Field ID: HAB-HC-012224-1320

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2462525	DEP SOP: NU-094-1	Color (true)	33		PCU	P440308	
2462527	EPA 350.1 Rev. 2.0	Ammonia-N	0.26		mg N/L	P440371	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	2.0		mg N/L	P440490	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.058		mg N/L	P440442	
	EPA 365.1 Rev. 2.0	Total-P	0.097		mg P/L	P440432	
2462529	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P440299	
2462531	EPA 8321B	Anatoxin-a	0.25	U	ug/L	P440271	
		Cylindrospermopsin	0.10	U	ug/L	P440269	
		Desmethyl microcystin LR	0.26	I	ug/L	P440269	
		Microcystin HiLR	0.25	U	ug/L	P440269	
		Microcystin HtyR	0.25	U	ug/L	P440269	
		Microcystin LA	0.16	I	ug/L	P440269	
		Microcystin LF	0.14	I	ug/L	P440269	
		Microcystin LR	1.4		ug/L	P440269	
		Microcystin LW	0.25	U	ug/L	P440269	
		Microcystin LY	0.14	I	ug/L	P440269	
		Microcystin RR	0.19	I	ug/L	P440269	
		Microcystin WR	0.50	U	ug/L	P440269	
		Neosaxitoxin	0.50	U	ug/L	P440271	
		Microcystin YR	0.25	U	ug/L	P440269	
		Saxitoxin	0.50	UJ	ug/L	P440271	MS
		Nodularin-R	0.10	U	ug/L	P440269	

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.
 EPA 8321B: Refer to the Lab Analysis Report for an explanation of QC Codes.

Sample Location: Lake Placid

Collection Date/Time: 01/22/2024 10:17

Field ID: HAB-HC-012224-1017					Matrix: W-SURF-FRH		
Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2462526	DEP SOP: NU-094-1	Color (true)	20		PCU	P440308	
2462528	EPA 350.1 Rev. 2.0	Ammonia-N	0.022		mg N/L	P440371	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.62		mg N/L	P440490	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.097		mg N/L	P440442	
	EPA 365.1 Rev. 2.0	Total-P	0.032		mg P/L	P440432	
2462530	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P440299	
2462532	EPA 8321B	Anatoxin-a	0.25	U	ug/L	P440271	
		Cylindrospermopsin	0.10	U	ug/L	P440269	
		Desmethyl microcystin LR	0.25	U	ug/L	P440269	
		Microcystin HILR	0.25	U	ug/L	P440269	
		Microcystin HtyR	0.25	U	ug/L	P440269	
		Microcystin LA	0.19	I	ug/L	P440269	
		Microcystin LF	0.10	U	ug/L	P440269	
		Microcystin LR	0.25	U	ug/L	P440269	
		Microcystin LW	0.25	U	ug/L	P440269	
		Microcystin LY	0.10	U	ug/L	P440269	
		Microcystin RR	0.10	U	ug/L	P440269	
		Microcystin WR	0.50	U	ug/L	P440269	
		Neosaxitoxin	0.50	U	ug/L	P440271	
		Microcystin YR	0.25	U	ug/L	P440269	
		Saxitoxin	0.50	U	ug/L	P440271	MS
		Nodularin-R	0.10	U	ug/L	P440269	

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: P440308

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P440371

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P440490

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P440442

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P440432

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P440299

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

Reference Method: EPA 8321B
Batch ID: P440269

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: P440271

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: P440308

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Color (true)	99.5		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P440371

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P440490

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P440442

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P440432

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P440299

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

Reference Method: EPA 8321B
Batch ID: P440269

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Cylindrospermopsin	101		P	40 - 150
Desmethyl microcystin LR	93.0		P	40 - 150
Microcystin H1LR	96.2		P	40 - 150
Microcystin HtyR	99.9		P	40 - 150
Microcystin LA	98.9		P	40 - 150
Microcystin LF	90.1		P	40 - 150
Microcystin LR	90.9		P	40 - 150
Microcystin LW	98.3		P	40 - 150
Microcystin LY	96.0		P	40 - 150
Microcystin RR	98.1		P	40 - 150
Microcystin WR	92.9		P	40 - 150
Microcystin YR	91.8		P	40 - 150
Nodularin-R	95.1		P	40 - 150

Quality Assurance Report

Laboratory Control Sample Accuracy

Reference Method: EPA 8321B
Batch ID: P440271

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Anatoxin-a	99.6		P	40 - 150
Neosaxitoxin	63.8		P	40 - 150
Saxitoxin	43.3		P	40 - 150

Quality Assurance Report

Matrix Spike Accuracy

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P440371

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2462455	Ammonia-N	96.4	94.4	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P440442

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2462474	NO2NO3-N	98.4	99.0	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P440432

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2462581	Total-P	106	102	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P440299

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2462457	O-Phosphate-P	97.0	96.2	P/P	90 - 110

Reference Method: EPA 8321B
Batch ID: P440269

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2462531	Cylindrospermopsin	103	99.4	P/P	40 - 150
2462531	Desmethyl microcystin LR	90.2	99.7	P/P	40 - 150
2462531	Microcystin HilR	104	97.0	P/P	40 - 150
2462531	Microcystin HtyR	101	101	P/P	40 - 150
2462531	Microcystin LA	97.1	95.2	P/P	40 - 150
2462531	Microcystin LF	107	108	P/P	40 - 150
2462531	Microcystin LR	96.9	92.6	P/P	40 - 150
2462531	Microcystin LW	109	113	P/P	40 - 150
2462531	Microcystin LY	95.9	98.6	P/P	40 - 150
2462531	Microcystin RR	101	102	P/P	40 - 150
2462531	Microcystin WR	96.8	96.1	P/P	40 - 150
2462531	Microcystin YR	99.1	100	P/P	40 - 150
2462531	Nodularin-R	102	97.3	P/P	40 - 150

Reference Method: EPA 8321B
Batch ID: P440271

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2462531	Anatoxin-a	99.9	92.7	P/P	40 - 150
2462531	Neosaxitoxin	53.2	50.7	P/P	40 - 150
2462531	Saxitoxin	17.6	16.7	F/F	40 - 150

Quality Assurance Report Precision

Reference Method: DEP SOP: NU-094-1
Batch ID: P440308

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2462460	Color (true)	1.96	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P440371

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2462455	Ammonia-N	2.10	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P440490

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2462527	Kjeldahl Nitrogen	6.28	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P440442

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2462474	NO2NO3-N	0.349	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P440432

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2462581	Total-P	4.13	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P440299

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2462457	O-Phosphate-P	0.678	Spike	P	0 - 20

Reference Method: EPA 8321B
Batch ID: P440269

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2462531	Cylindrospermopsin	3.18	Spike	P	0 - 30
2462531	Desmethyl microcystin LR	9.73	Spike	P	0 - 30
2462531	Microcystin HtIR	7.11	Spike	P	0 - 30
2462531	Microcystin HtyR	0.517	Spike	P	0 - 30
2462531	Microcystin LA	1.96	Spike	P	0 - 30
2462531	Microcystin LF	0.889	Spike	P	0 - 30
2462531	Microcystin LR	3.96	Spike	P	0 - 30
2462531	Microcystin LW	3.36	Spike	P	0 - 30
2462531	Microcystin LY	2.74	Spike	P	0 - 30

Quality Assurance Report

Precision

Reference Method: EPA 8321B
Batch ID: P440269

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2462531	Microcystin RR	1.65	Spike	P	0 - 30
2462531	Microcystin WR	0.708	Spike	P	0 - 30
2462531	Microcystin YR	1.04	Spike	P	0 - 30
2462531	Nodularin-R	5.03	Spike	P	0 - 30

Reference Method: EPA 8321B
Batch ID: P440271

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2462531	Anatoxin-a	7.52	Spike	P	0 - 30
2462531	Neosaxitoxin	4.76	Spike	P	0 - 30
2462531	Saxitoxin	5.05	Spike	P	0 - 30

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

Quality Assurance Report

Surrogates

Lab Sample ID: 2462531

Field Sample ID: HAB-HC-012224-1320

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	Anatoxin-a 13C4	103	P	30 - 160
EPA 8321B	Microcystin LR ethyl-d5	103	P	30 - 160

Lab Sample ID: 2462532

Field Sample ID: HAB-HC-012224-1017

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	Anatoxin-a 13C4	102	P	30 - 160
EPA 8321B	Microcystin LR ethyl-d5	94.7	P	30 - 160

Quality Assurance Report Calibration Verification

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Run ID: A123768

Included Lab Sample IDs: 2462529, 2462530

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	98.9	99.3	P/P	90 - 110
O-Phosphate-P	99.1	98.9	P/P	90 - 110

Reference Method: DEP SOP: NU-094-1

Run ID: A123770

Included Lab Sample IDs: 2462525, 2462526

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	102	102	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A123790

Included Lab Sample IDs: 2462527, 2462528

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	98.5	99.5	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A123819

Included Lab Sample IDs: 2462527, 2462528

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

Reference Method: EPA 8321B

Run ID: A123830

Included Lab Sample IDs: 2462531, 2462532

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Cylindrospermopsin	98.1	103	P/P	50 - 160
Desmethyl microcystin LR	94.6	101	P/P	50 - 160
Microcystin H1R	98.3	103	P/P	50 - 160
Microcystin HtyR	94.2	106	P/P	50 - 160
Microcystin LA	98.2	105	P/P	50 - 160
Microcystin LF	104	107	P/P	50 - 160
Microcystin LR	97.8	106	P/P	50 - 160
Microcystin LW	102	105	P/P	50 - 160
Microcystin LY	101	105	P/P	50 - 160
Microcystin RR	101	101	P/P	50 - 160
Microcystin WR	93.2	103	P/P	50 - 160
Microcystin YR	95.6	103	P/P	50 - 160
Nodularin-R	98.8	105	P/P	50 - 160

Reference Method: EPA 8321B

Run ID: A123831

Included Lab Sample IDs: 2462531, 2462532

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Anatoxin-a	98.7	98.2	P/P	50 - 160
Neosaxitoxin	102	98.8	P/P	50 - 160
Saxitoxin	104	103	P/P	50 - 160

Quality Assurance Report
Calibration Verification

Reference Method: EPA 365.1 Rev. 2.0
Run ID: A123840
Included Lab Sample IDs: 2462527

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	94.4	98.7	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Run ID: A123855
Included Lab Sample IDs: 2462528

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	99.2	101	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Run ID: A123886
Included Lab Sample IDs: 2462527, 2462528

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	101	103	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	MS
					LCS	SMP
DEP SOP: NU-094-1	Color (true)	99.5			1.96	
EPA 350.1 Rev. 2.0	Ammonia-N	96.4	96.4	94.4		2.10
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	103				6.28
EPA 353.2 Rev. 2.0	NO2NO3-N	101	98.4	99.0		0.349
EPA 365.1 Rev. 2.0	Total-P	104	106	102		4.13
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	99.2	97.0	96.2		0.678
EPA 8321B	Anatoxin-a	99.6	99.9	92.7		7.52
	Cylindrospermopsin	101	103	99.4		3.18
	Desmethyl microcystin LR	93.0	90.2	99.7		9.73
	Microcystin HiLR	96.2	104	97.0		7.11
	Microcystin HtyR	99.9	101	101		0.517
	Microcystin LA	98.9	97.1	95.2		1.96
	Microcystin LF	90.1	107	108		0.889
	Microcystin LR	90.9	96.9	92.6		3.96
	Microcystin LW	98.3	109	113		3.36
	Microcystin LY	96.0	95.9	98.6		2.74
	Microcystin RR	98.1	101	102		1.65
	Microcystin WR	92.9	96.8	96.1		0.708
	Microcystin YR	91.8	99.1	100		1.04
	Neosaxitoxin	63.8	53.2	50.7		4.76
	Nodularin-R	95.1	102	97.3		5.03
	Saxitoxin	43.3	17.6	16.7		5.05

Reference Method Descriptions

Method	Description	Associated Samples
DEP SOP: NU-094-1	True Color measured at 450 nm (not valid for NPDES monitoring)	2462525, 2462526
EPA 350.1 Rev. 2.0	Ammonia in aqueous matrices as mg N/L	2462527, 2462528
EPA 351.2 Rev. 2.0	Total Kjeldahl Nitrogen in aqueous matrices	2462527, 2462528
EPA 353.2 Rev. 2.0	Nitrite/Nitrate in aqueous matrices as mg N/L	2462527, 2462528
EPA 365.1 Rev. 2.0	Total Phosphorus in aqueous matrices as mg P/L	2462527, 2462528
EPA 365.1 Rev. 2.0 dissolved	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	2462529, 2462530
EPA 8321B	Microcystins in water matrices by HPLC/MS/MS	2462531, 2462532
EPA 8321B	Saxitoxin in water matrices by HPLC/MS/MS	2462531, 2462532

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	01/23/2024			01/23/2024 15:13	Anna M. Plaviak	2462525, 2462526
EPA 350.1 Rev. 2.0	01/23/2024			01/24/2024 13:35	Khloe J Berg	2462527
	01/23/2024			01/24/2024 13:36	Khloe J Berg	2462528
EPA 351.2 Rev. 2.0	01/23/2024	01/26/2024 11:36	Ping Hua	01/29/2024 14:09	Samantha L Bates	2462527
	01/23/2024	01/26/2024 11:36	Ping Hua	01/29/2024 14:13	Samantha L Bates	2462528
EPA 353.2 Rev. 2.0	01/23/2024			01/24/2024 12:54	Fadila Guebre	2462527
	01/23/2024			01/24/2024 12:55	Fadila Guebre	2462528
EPA 365.1 Rev. 2.0	01/23/2024	01/25/2024 11:22	Adam P Silver	01/26/2024 10:40	Elise M. Gillis	2462527
	01/23/2024	01/25/2024 11:22	Adam P Silver	01/26/2024 14:20	James L Waggerby	2462528
EPA 365.1 Rev. 2.0 dissolved	01/23/2024			01/23/2024 14:09	Elise M. Gillis	2462529
	01/23/2024			01/23/2024 14:14	Elise M. Gillis	2462530
EPA 8321B	01/23/2024	01/25/2024 10:00	Samatha Luckman	01/25/2024 18:33	Samatha Luckman	2462531
	01/23/2024	01/25/2024 10:00	Samatha Luckman	01/25/2024 18:50	Samatha Luckman	2462532
	01/23/2024	01/25/2024 10:00	Samatha Luckman	01/26/2024 05:10	Samatha Luckman	2462531
	01/23/2024	01/25/2024 10:00	Samatha Luckman	01/26/2024 05:23	Samatha Luckman	2462532