

Chemical Analysis Report

CEN-DIST-2023-10-17-02

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

Event Description: **Algal Bloom Response - CEROC**
Request ID: **RQ-2023-07-17-26**
Customer: **CEN-DIST**
Project ID: **BLOOM-RESP**

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Date Certified: 30-OCT-2023 14:53



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 Virginia - Dinky Dock

Collection Date/Time: 10/16/2023 11:24

Field ID: HABCE0172

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2445412	DEP SOP: NU-094-1	Color (true)	11		PCU	P436621	
2445415	EPA 350.1 Rev. 2.0	Ammonia-N	0.004	I	mg N/L	P436812	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.61		mg N/L	P436728	MS
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P436936	
	EPA 365.1 Rev. 2.0	Total-P	0.019		mg P/L	P436654	
2445418	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P436626	
2445421	EPA 8321B	Anatoxin-a	0.25	U	ug/L	P436523	
		Cylindrospermopsin	0.10	U	ug/L	P436451	
		Desmethyl microcystin LR	0.25	U	ug/L	P436451	
		Microcystin HilR	0.25	U	ug/L	P436451	
		Microcystin HtyR	0.25	U	ug/L	P436451	
		Microcystin LA	0.10	U	ug/L	P436451	
		Microcystin LF	0.10	U	ug/L	P436451	
		Microcystin LR	0.25	U	ug/L	P436451	
		Microcystin LW	0.25	U	ug/L	P436451	
		Microcystin LY	0.10	U	ug/L	P436451	
		Microcystin RR	0.10	U	ug/L	P436451	
		Microcystin WR	0.50	U	ug/L	P436451	
		Neosaxitoxin	0.50	U	ug/L	P436523	
		Microcystin YR	0.25	U	ug/L	P436451	
		Saxitoxin	0.50	U	ug/L	P436523	
		Nodularin-R	0.10	U	ug/L	P436451	

Sample Location: Lake Minnehaha - E Dock

Collection Date/Time: 10/16/2023 10:47

Field ID: HABCE0194

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2445414	DEP SOP: NU-094-1	Color (true)	17		PCU	P436623	
2445417	EPA 350.1 Rev. 2.0	Ammonia-N	0.004	I	mg N/L	P436812	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.75		mg N/L	P436728	MS
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P436936	
	EPA 365.1 Rev. 2.0	Total-P	0.026		mg P/L	P436654	
2445420	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P436626	
2445423	EPA 8321B	Anatoxin-a	0.25	U	ug/L	P436523	
		Cylindrospermopsin	0.10	U	ug/L	P436451	
		Desmethyl microcystin LR	0.25	U	ug/L	P436451	
		Microcystin HiLR	0.25	U	ug/L	P436451	
		Microcystin HtyR	0.25	U	ug/L	P436451	
		Microcystin LA	0.10	U	ug/L	P436451	
		Microcystin LF	0.10	U	ug/L	P436451	
		Microcystin LR	0.25	U	ug/L	P436451	
		Microcystin LW	0.25	U	ug/L	P436451	
		Microcystin LY	0.10	U	ug/L	P436451	
		Microcystin RR	0.10	U	ug/L	P436451	
		Microcystin WR	0.50	U	ug/L	P436451	
		Neosaxitoxin	0.50	U	ug/L	P436523	
		Microcystin YR	0.25	U	ug/L	P436451	
		Saxitoxin	0.50	U	ug/L	P436523	
		Nodularin-R	0.10	U	ug/L	P436451	

Sample Location: Pioneer Lake - NE Shore

Collection Date/Time: 10/16/2023 09:47

Field ID: HABCE0190

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2445413	DEP SOP: NU-094-1	Color (true)	37	A	PCU	P436623	
2445416	EPA 350.1 Rev. 2.0	Ammonia-N	0.015		mg N/L	P436812	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.42		mg N/L	P436728	MS
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.50		mg N/L	P436936	
	EPA 365.1 Rev. 2.0	Total-P	0.021		mg P/L	P436654	
2445419	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.006	I	mg P/L	P436626	
2445422	EPA 8321B	Anatoxin-a	0.25	U	ug/L	P436523	
		Cylindrospermopsin	0.10	U	ug/L	P436451	
		Desmethyl microcystin LR	0.25	U	ug/L	P436451	
		Microcystin HiLR	0.25	U	ug/L	P436451	
		Microcystin HtyR	0.25	U	ug/L	P436451	
		Microcystin LA	0.10	U	ug/L	P436451	
		Microcystin LF	0.10	U	ug/L	P436451	
		Microcystin LR	0.25	U	ug/L	P436451	
		Microcystin LW	0.25	U	ug/L	P436451	
		Microcystin LY	0.10	U	ug/L	P436451	
		Microcystin RR	0.10	U	ug/L	P436451	
		Microcystin WR	0.50	U	ug/L	P436451	
		Neosaxitoxin	0.50	U	ug/L	P436523	
		Microcystin YR	0.25	U	ug/L	P436451	
		Saxitoxin	0.50	U	ug/L	P436523	
		Nodularin-R	0.10	U	ug/L	P436451	

Quality Assurance Report

Method Blank Results

Reference Method: DEP SOP: NU-094-1
Batch ID: P436621

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: DEP SOP: NU-094-1
Batch ID: P436623

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P436812

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P436728

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P436936

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P436654

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P436626

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

Reference Method: EPA 8321B
Batch ID: P436451

Component	Result	Code	Units
Cylindrospermopsin	0.10	U	ug/L
Desmethyl microcystin LR	0.25	U	ug/L
Microcystin HIR	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: P436451

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: P436523

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: P436621

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Color (true)	101		P	90 - 110

Reference Method: DEP SOP: NU-094-1
Batch ID: P436623

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: P436812

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Ammonia-N	99.4		P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P436728

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: P436936

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
NO2NO3-N	98.0		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P436654

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: P436626

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

Reference Method: EPA 8321B
Batch ID: P436451

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Cylindrospermopsin	108		P	40 - 160
Desmethyl microcystin LR	111		P	40 - 160
Microcystin HIR	111		P	40 - 160
Microcystin HtyR	121		P	40 - 160
Microcystin LA	116		P	40 - 160
Microcystin LF	139		P	40 - 160
Microcystin LR	122		P	40 - 160
Microcystin LW	141		P	40 - 160
Microcystin LY	135		P	40 - 160
Microcystin RR	121		P	40 - 160

Quality Assurance Report

Laboratory Control Sample Accuracy

Reference Method: EPA 8321B
Batch ID: P436451

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Microcystin WR	93.9		P	40 - 160
Microcystin YR	116		P	40 - 160
Nodularin-R	112		P	40 - 160

Reference Method: EPA 8321B
Batch ID: P436523

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Anatoxin-a	102		P	40 - 150
Neosaxitoxin	82.7		P	40 - 150
Saxitoxin	85.3		P	40 - 150

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P436812

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2445415	Ammonia-N	97.8	99.8	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P436728

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2445374	Kjeldahl Nitrogen	111	110	F/F	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P436936

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2445373	NO2NO3-N	95.0	94.5	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P436654

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2445416	Total-P	105	108	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P436626

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2445420	O-Phosphate-P	97.2	97.3	P/P	90 - 110

Reference Method: EPA 8321B
Batch ID: P436451

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2444994	Cylindrospermopsin	82.2	85.0	P/P	40 - 160
2444994	Desmethyl microcystin LR	114	121	P/P	40 - 160
2444994	Microcystin HiLR	115	124	P/P	40 - 160
2444994	Microcystin HtyR	114	115	P/P	40 - 160
2444994	Microcystin LA	110	109	P/P	40 - 160
2444994	Microcystin LF	132	129	P/P	40 - 160
2444994	Microcystin LR	132	135	P/P	40 - 160
2444994	Microcystin LW	114	124	P/P	40 - 160
2444994	Microcystin LY	135	126	P/P	40 - 160
2444994	Microcystin RR	102	99.0	P/P	40 - 160
2444994	Microcystin WR	111	111	P/P	40 - 160
2444994	Microcystin YR	122	133	P/P	40 - 160
2444994	Nodularin-R	108	103	P/P	40 - 160

Reference Method: EPA 8321B
Batch ID: P436523

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2444994	Anatoxin-a	94.5	101	P/P	40 - 150
2444994	Neosaxitoxin	59.5	63.4	P/P	40 - 150
2444994	Saxitoxin	78.2	81.6	P/P	40 - 150

Quality Assurance Report Precision

Reference Method: DEP SOP: NU-094-1
Batch ID: P436621

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2445372	Color (true)	2.55	Sample	P	0 - 20

Reference Method: DEP SOP: NU-094-1
Batch ID: P436623

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2445413	Color (true)	0.275	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P436812

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2445415	Ammonia-N	1.89	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P436728

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2445374	Kjeldahl Nitrogen	0.463	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P436936

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2445373	NO2NO3-N	0.528	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P436654

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2445416	Total-P	2.46	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P436626

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2445420	O-Phosphate-P	0.103	Spike	P	0 - 20

Reference Method: EPA 8321B
Batch ID: P436451

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2444994	Cylindrospermopsin	3.39	Spike	P	0 - 30
2444994	Desmethyl microcystin LR	5.63	Spike	P	0 - 30

Quality Assurance Report Precision

Reference Method: EPA 8321B
Batch ID: P436451

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2444994	Microcystin HllR	7.49	Spike	P	0 - 30
2444994	Microcystin HtyR	0.869	Spike	P	0 - 30
2444994	Microcystin LA	0.252	Spike	P	0 - 30
2444994	Microcystin LF	2.19	Spike	P	0 - 30
2444994	Microcystin LR	2.18	Spike	P	0 - 30
2444994	Microcystin LW	7.97	Spike	P	0 - 30
2444994	Microcystin LY	6.95	Spike	P	0 - 30
2444994	Microcystin RR	3.42	Spike	P	0 - 30
2444994	Microcystin WR	0.515	Spike	P	0 - 30
2444994	Microcystin YR	8.64	Spike	P	0 - 30
2444994	Nodularin-R	4.18	Spike	P	0 - 30

Reference Method: EPA 8321B
Batch ID: P436523

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2444994	Anatoxin-a	6.41	Spike	P	0 - 30
2444994	Neosaxitoxin	6.28	Spike	P	0 - 30
2444994	Saxitoxin	4.35	Spike	P	0 - 30

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

Quality Assurance Report Surrogates

Lab Sample ID: 2445421
Field Sample ID: HABCE0172

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	Anatoxin-a 13C4	91.2	P	30 - 160
EPA 8321B	Microcystin LR ethyl-d5	108	P	30 - 160

Lab Sample ID: 2445422
Field Sample ID: HABCE0190

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	Anatoxin-a 13C4	94.2	P	30 - 160
EPA 8321B	Microcystin LR ethyl-d5	106	P	30 - 160

Lab Sample ID: 2445423
Field Sample ID: HABCE0194

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	Anatoxin-a 13C4	85.5	P	30 - 160
EPA 8321B	Microcystin LR ethyl-d5	101	P	30 - 160

Quality Assurance Report Calibration Verification

Reference Method: DEP SOP: NU-094-1

Run ID: A122198

Included Lab Sample IDs: 2445412, 2445413, 2445414

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	101	101	P/P	90 - 110
Color (true)	102	101	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Run ID: A122200

Included Lab Sample IDs: 2445418, 2445419, 2445420

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

Reference Method: EPA 8321B

Run ID: A122228

Included Lab Sample IDs: 2445421, 2445422, 2445423

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Anatoxin-a	102	99.1	P/P	50 - 160
Neosaxitoxin	94.7	97.8	P/P	50 - 160
Saxitoxin	105	106	P/P	50 - 160

Reference Method: EPA 8321B

Run ID: A122229

Included Lab Sample IDs: 2445421, 2445422, 2445423

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Cylindrospermopsin	78.7	119	P/P	60 - 160
Desmethyl microcystin LR	103	83.6	P/P	50 - 160
Microcystin H1LR	105	84.0	P/P	60 - 160
Microcystin HtyR	99.5	79.3	P/P	60 - 160
Microcystin LA	93.9	74.2	P/P	50 - 160
Microcystin LF	107	80.4	P/P	60 - 160
Microcystin LR	107	78.2	P/P	60 - 160
Microcystin LW	93.8	70.9	P/P	60 - 160
Microcystin LY	96.2	75.8	P/P	60 - 160
Microcystin RR	96.3	79.1	P/P	60 - 160
Microcystin WR	94.2	76.1	P/P	60 - 160
Microcystin YR	105	78.3	P/P	60 - 160
Nodularin-R	90.9	68.9	P/P	60 - 160

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A122263

Included Lab Sample IDs: 2445415, 2445416, 2445417

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	98.1	99.0	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A122287

Included Lab Sample IDs: 2445415, 2445416, 2445417

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	102	105	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A122287

Included Lab Sample IDs: 2445415, 2445416, 2445417

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

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A122291

Included Lab Sample IDs: 2445415, 2445416, 2445417

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	102	102	P/P	90 - 110
Total-P	102	104	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A122313

Included Lab Sample IDs: 2445415, 2445416, 2445417

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
NO2NO3-N	100	96.0	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		LCS	Precision	MS
						SMP	
DEP SOP: NU-094-1	Color (true)	101				2.55	
	Color (true)	100				0.275	
EPA 350.1 Rev. 2.0	Ammonia-N	99.4	97.8	99.8			1.89
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	105	111	110			0.463
EPA 353.2 Rev. 2.0	NO ₂ NO ₃ -N	98.0	95.0	94.5			0.528
EPA 365.1 Rev. 2.0	Total-P	104	105	108			2.46
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	100	97.2	97.3			0.103
EPA 8321B	Anatoxin-a	102	94.5	101			6.41
	Cylindrospermopsin	108	82.2	85.0			3.39
	Desmethyl microcystin LR	111	114	121			5.63
	Microcystin HiLR	111	115	124			7.49
	Microcystin HtyR	121	114	115			0.869
	Microcystin LA	116	110	109			0.252
	Microcystin LF	139	132	129			2.19
	Microcystin LR	122	132	135			2.18
	Microcystin LW	141	114	124			7.97
	Microcystin LY	135	135	126			6.95
	Microcystin RR	121	102	99.0			3.42
	Microcystin WR	93.9	111	111			0.515
	Microcystin YR	116	122	133			8.64
	Neosaxitoxin	82.7	59.5	63.4			6.28
	Nodularin-R	112	108	103			4.18
	Saxitoxin	85.3	78.2	81.6			4.35

Reference Method Descriptions

Method	Description	Associated Samples
DEP SOP: NU-094-1	True Color measured at 450 nm (not valid for NPDES monitoring)	2445412, 2445413, 2445414
EPA 350.1 Rev. 2.0	Ammonia in aqueous matrices as mg N/L	2445415, 2445416, 2445417
EPA 351.2 Rev. 2.0	Total Kjeldahl Nitrogen in aqueous matrices	2445415, 2445416, 2445417
EPA 353.2 Rev. 2.0	Nitrite/Nitrate in aqueous matrices as mg N/L	2445415, 2445416, 2445417
EPA 365.1 Rev. 2.0	Total Phosphorus in aqueous matrices as mg P/L	2445415, 2445416, 2445417
EPA 365.1 Rev. 2.0 dissolved	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	2445418, 2445419, 2445420
EPA 8321B	Microcystins in water matrices by HPLC/MS/MS	2445421, 2445422, 2445423
EPA 8321B	Saxitoxin in water matrices by HPLC/MS/MS	2445421, 2445422, 2445423

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	10/17/2023			10/17/2023 15:57	Anna M. Plaviak	2445412
	10/17/2023			10/17/2023 16:02	Anna M. Plaviak	2445413, 2445414
	10/17/2023			10/20/2023 12:19	Ping Hua	2445415
EPA 350.1 Rev. 2.0	10/17/2023			10/20/2023 12:23	Ping Hua	2445416
	10/17/2023			10/20/2023 12:24	Ping Hua	2445417
	10/17/2023	10/19/2023 15:24	Samantha L Bates	10/23/2023 10:53	Samantha L Bates	2445415
EPA 351.2 Rev. 2.0	10/17/2023	10/19/2023 15:24	Samantha L Bates	10/23/2023 10:55	Samantha L Bates	2445416
	10/17/2023	10/19/2023 15:24	Samantha L Bates	10/23/2023 11:00	Samantha L Bates	2445417
	10/17/2023			10/23/2023 15:27	Fadila Guebre	2445415
EPA 353.2 Rev. 2.0	10/17/2023			10/23/2023 15:28	Fadila Guebre	2445416
	10/17/2023			10/23/2023 15:29	Fadila Guebre	2445417
	10/17/2023	10/18/2023 13:42	Adam P Silver	10/23/2023 12:07	Chandler E Cox	2445416
EPA 365.1 Rev. 2.0	10/17/2023	10/18/2023 13:42	Adam P Silver	10/23/2023 12:10	Chandler E Cox	2445415
	10/17/2023	10/18/2023 13:42	Adam P Silver	10/23/2023 12:18	Chandler E Cox	2445417
	10/17/2023			10/17/2023 15:45	Elise M. Gillis	2445420
EPA 365.1 Rev. 2.0 dissolved	10/17/2023			10/17/2023 15:50	Elise M. Gillis	2445418
	10/17/2023			10/17/2023 15:51	Elise M. Gillis	2445419
	10/17/2023	10/18/2023 12:00	Tae K Lee	10/18/2023 16:16	Tae K Lee	2445421
EPA 8321B	10/17/2023	10/18/2023 12:00	Tae K Lee	10/18/2023 16:26	Tae K Lee	2445421
	10/17/2023	10/18/2023 12:00	Tae K Lee	10/18/2023 16:32	Tae K Lee	2445422
	10/17/2023	10/18/2023 12:00	Tae K Lee	10/18/2023 16:40	Tae K Lee	2445422
	10/17/2023	10/18/2023 12:00	Tae K Lee	10/18/2023 16:47	Tae K Lee	2445423
	10/17/2023	10/18/2023 12:00	Tae K Lee	10/18/2023 16:54	Tae K Lee	2445423
	10/17/2023	10/18/2023 12:00	Tae K Lee			