

Chemical Analysis Report

CEN-DIST-2023-11-07-01

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

Event Description: **Algal Bloom Response - CEROC**
Request ID: **RQ-2023-07-31-07**
Customer: **CEN-DIST**
Project ID: **BLOOM-RESP**

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Date Certified: 17-NOV-2023 10:04



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 Minnehaha - E Dock

Collection Date/Time: 11/06/2023 11:39

Field ID: HABCE0194

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2449090	DEP SOP: NU-094-1	Color (true)	17		PCU	P437482	
2449093	EPA 350.1 Rev. 2.0	Ammonia-N	0.011		mg N/L	P437692	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.68		mg N/L	P437514	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.006	I	mg N/L	P437763	
	EPA 365.1 Rev. 2.0	Total-P	0.036		mg P/L	P437659	
2449096	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P437478	
2449099	EPA 8321B	Anatoxin-a	0.25	U	ug/L	P437511	
		Cylindrospermopsin	0.12	I	ug/L	P437510	
		Desmethyl microcystin LR	0.25	U	ug/L	P437510	
		Microcystin HiLR	0.25	U	ug/L	P437510	
		Microcystin HtyR	0.25	U	ug/L	P437510	
		Microcystin LA	0.10	U	ug/L	P437510	
		Microcystin LF	0.10	U	ug/L	P437510	
		Microcystin LR	0.25	U	ug/L	P437510	
		Microcystin LW	0.25	U	ug/L	P437510	
		Microcystin LY	0.10	U	ug/L	P437510	
		Microcystin RR	0.10	U	ug/L	P437510	
		Microcystin WR	0.50	U	ug/L	P437510	
		Neosaxitoxin	0.50	U	ug/L	P437511	
		Microcystin YR	0.25	U	ug/L	P437510	
		Saxitoxin	0.50	U	ug/L	P437511	
		Nodularin-R	0.10	U	ug/L	P437510	

Sample Location: Pioneer Lake - NE Shore

Collection Date/Time: 11/06/2023 09:57

Field ID: HABCE0190

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2449091	DEP SOP: NU-094-1	Color (true)	40		PCU	P437482	
2449094	EPA 350.1 Rev. 2.0	Ammonia-N	0.016		mg N/L	P437692	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.45		mg N/L	P437558	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.55		mg N/L	P437763	
	EPA 365.1 Rev. 2.0	Total-P	0.025		mg P/L	P437712	
2449097	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P437478	
2449100	EPA 8321B	Anatoxin-a	0.25	U	ug/L	P437511	
		Cylindrospermopsin	0.10	U	ug/L	P437510	
		Desmethyl microcystin LR	0.25	U	ug/L	P437510	
		Microcystin H1LR	0.25	U	ug/L	P437510	
		Microcystin HtyR	0.25	U	ug/L	P437510	
		Microcystin LA	0.23	I	ug/L	P437510	
		Microcystin LF	0.10	U	ug/L	P437510	
		Microcystin LR	0.33	I	ug/L	P437510	
		Microcystin LW	0.25	U	ug/L	P437510	
		Microcystin LY	0.10	U	ug/L	P437510	
		Microcystin RR	0.10	U	ug/L	P437510	
		Microcystin WR	0.50	U	ug/L	P437510	
		Neosaxitoxin	0.50	U	ug/L	P437511	
		Microcystin YR	0.25	U	ug/L	P437510	
		Saxitoxin	0.50	U	ug/L	P437511	
		Nodularin-R	0.10	U	ug/L	P437510	

Sample Location: Lake Howell - N Shore

Collection Date/Time: 11/06/2023 11:08

Field ID: HABCE0212

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2449092	DEP SOP: NU-094-1	Color (true)	32	A	PCU	P437483	
2449095	EPA 350.1 Rev. 2.0	Ammonia-N	0.026		mg N/L	P437692	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.54		mg N/L	P437558	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.034		mg N/L	P437763	
	EPA 365.1 Rev. 2.0	Total-P	0.024		mg P/L	P437712	
2449098	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	I	mg P/L	P437478	
2449101	EPA 8321B	Anatoxin-a	0.25	U	ug/L	P437511	
		Cylindrospermopsin	0.10	U	ug/L	P437510	
		Desmethyl microcystin LR	0.25	U	ug/L	P437510	
		Microcystin HiLR	0.25	U	ug/L	P437510	
		Microcystin HtyR	0.25	U	ug/L	P437510	
		Microcystin LA	0.10	U	ug/L	P437510	
		Microcystin LF	0.10	U	ug/L	P437510	
		Microcystin LR	0.25	U	ug/L	P437510	
		Microcystin LW	0.25	U	ug/L	P437510	
		Microcystin LY	0.10	U	ug/L	P437510	
		Microcystin RR	0.10	U	ug/L	P437510	
		Microcystin WR	0.50	U	ug/L	P437510	
		Neosaxitoxin	0.50	U	ug/L	P437511	
		Microcystin YR	0.25	U	ug/L	P437510	
		Saxitoxin	0.50	U	ug/L	P437511	
		Nodularin-R	0.10	U	ug/L	P437510	

Quality Assurance Report

Method Blank Results

Reference Method: DEP SOP: NU-094-1
Batch ID: P437482

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: DEP SOP: NU-094-1
Batch ID: P437483

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P437692

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P437514

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P437558

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P437763

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P437659

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P437712

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P437478

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

Quality Assurance Report

Method Blank Results

Reference Method: EPA 8321B

Batch ID: P437510

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: P437511

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: P437482

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Color (true)	97.6		P	90 - 110

Reference Method: DEP SOP: NU-094-1
Batch ID: P437483

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Color (true)	99.4		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P437692

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Ammonia-N	98.2		P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P437514

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Kjeldahl Nitrogen	93.6		P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P437558

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P437763

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P437659

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P437712

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total-P	98.6		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P437478

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

Quality Assurance Report

Laboratory Control Sample Accuracy

Reference Method: EPA 8321B
Batch ID: P437510

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Cylindrospermopsin	94.3		P	40 - 150
Desmethyl microcystin LR	109		P	40 - 150
Microcystin HilR	98.6		P	40 - 150
Microcystin HtyR	96.8		P	40 - 150
Microcystin LA	97.6		P	40 - 150
Microcystin LF	104		P	40 - 150
Microcystin LR	100		P	40 - 150
Microcystin LW	98.4		P	40 - 150
Microcystin LY	95.2		P	40 - 150
Microcystin RR	96.0		P	40 - 150
Microcystin WR	98.5		P	40 - 150
Microcystin YR	97.3		P	40 - 150
Nodularin-R	100		P	40 - 150

Reference Method: EPA 8321B
Batch ID: P437511

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Anatoxin-a	93.8		P	40 - 150
Neosaxitoxin	81.3		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: P437692

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2449063	Ammonia-N	98.2	96.6	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P437514

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2448878	Kjeldahl Nitrogen	102	105	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P437558

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2449110	Kjeldahl Nitrogen	102	99.4	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P437763

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2449093	NO2NO3-N	100	99.9	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P437659

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2448881	Total-P	104	104	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P437712

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2449095	Total-P	100	102	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P437478

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2449097	O-Phosphate-P	101	102	P/P	90 - 110

Reference Method: EPA 8321B
Batch ID: P437510

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2449099	Cylindrospermopsin	115	115	P/P	40 - 150
2449099	Desmethyl microcystin LR	106	111	P/P	40 - 150
2449099	Microcystin HiLR	105	101	P/P	40 - 150
2449099	Microcystin HtyR	101	100	P/P	40 - 150
2449099	Microcystin LA	98.7	101	P/P	40 - 150
2449099	Microcystin LF	104	105	P/P	40 - 150
2449099	Microcystin LR	109	103	P/P	40 - 150
2449099	Microcystin LW	107	101	P/P	40 - 150
2449099	Microcystin LY	104	97.1	P/P	40 - 150
2449099	Microcystin RR	114	112	P/P	40 - 150

Quality Assurance Report

Matrix Spike Accuracy

Reference Method: EPA 8321B
Batch ID: P437510

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2449099	Microcystin WR	106	113	P/P	40 - 150
2449099	Microcystin YR	109	100	P/P	40 - 150
2449099	Nodularin-R	106	101	P/P	40 - 150

Reference Method: EPA 8321B
Batch ID: P437511

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2449099	Anatoxin-a	91.4	98.4	P/P	40 - 150
2449099	Neosaxitoxin	80.9	86.0	P/P	40 - 150
2449099	Saxitoxin	94.5	93.1	P/P	40 - 150

Quality Assurance Report Precision

Reference Method: DEP SOP: NU-094-1
Batch ID: P437482

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2449059	Color (true)	5.18	Sample	P	0 - 20

Reference Method: DEP SOP: NU-094-1
Batch ID: P437483

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2449092	Color (true)	5.82	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P437692

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2449063	Ammonia-N	1.23	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P437514

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2448878	Kjeldahl Nitrogen	2.39	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P437558

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2449110	Kjeldahl Nitrogen	1.80	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P437763

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2449093	NO2NO3-N	0.484	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P437659

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2448881	Total-P	0.263	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P437712

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2449095	Total-P	1.18	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P437478

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2449097	O-Phosphate-P	0.791	Spike	P	0 - 20

Reference Method: EPA 8321B
Batch ID: P437510

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2449099	Cylindrospermopsin	0.203	Spike	P	0 - 30
2449099	Desmethyl microcystin LR	4.90	Spike	P	0 - 30
2449099	Microcystin HiLR	4.23	Spike	P	0 - 30
2449099	Microcystin HtyR	0.712	Spike	P	0 - 30
2449099	Microcystin LA	2.22	Spike	P	0 - 30
2449099	Microcystin LF	0.771	Spike	P	0 - 30
2449099	Microcystin LR	5.50	Spike	P	0 - 30
2449099	Microcystin LW	5.79	Spike	P	0 - 30
2449099	Microcystin LY	6.96	Spike	P	0 - 30
2449099	Microcystin RR	1.09	Spike	P	0 - 30
2449099	Microcystin WR	6.30	Spike	P	0 - 30
2449099	Microcystin YR	8.40	Spike	P	0 - 30
2449099	Nodularin-R	4.35	Spike	P	0 - 30

Reference Method: EPA 8321B
Batch ID: P437511

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2449099	Anatoxin-a	7.40	Spike	P	0 - 30
2449099	Neosaxitoxin	6.12	Spike	P	0 - 30
2449099	Saxitoxin	1.54	Spike	P	0 - 30

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

Quality Assurance Report Surrogates

Lab Sample ID: 2449099
Field Sample ID: HABCE0194

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	Anatoxin-a 13C4	80.9	P	30 - 160
EPA 8321B	Microcystin LR ethyl-d5	101	P	30 - 160

Lab Sample ID: 2449100
Field Sample ID: HABCE0190

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	Anatoxin-a 13C4	94.8	P	30 - 160
EPA 8321B	Microcystin LR ethyl-d5	94.7	P	30 - 160

Lab Sample ID: 2449101
Field Sample ID: HABCE0212

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	Anatoxin-a 13C4	83.3	P	30 - 160
EPA 8321B	Microcystin LR ethyl-d5	101	P	30 - 160

Quality Assurance Report Calibration Verification

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Run ID: A122602

Included Lab Sample IDs: 2449096, 2449097, 2449098

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

Reference Method: DEP SOP: NU-094-1

Run ID: A122603

Included Lab Sample IDs: 2449090, 2449091, 2449092

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	98.4	98.6	P/P	90 - 110
Color (true)	98.6	99.1	P/P	90 - 110

Reference Method: EPA 8321B

Run ID: A122640

Included Lab Sample IDs: 2449099, 2449100, 2449101

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Cylindrospermopsin	95.0	94.4	P/P	50 - 160
Desmethyl microcystin LR	107	105	P/P	50 - 160
Microcystin HILR	100	99.7	P/P	50 - 160
Microcystin HtyR	94.1	99.0	P/P	50 - 160
Microcystin LA	95.8	98.9	P/P	50 - 160
Microcystin LF	104	115	P/P	50 - 160
Microcystin LR	103	102	P/P	50 - 160
Microcystin LW	92.4	97.3	P/P	50 - 160
Microcystin LY	99.4	99.8	P/P	50 - 160
Microcystin RR	91.5	93.8	P/P	50 - 160
Microcystin WR	97.0	104	P/P	50 - 160
Microcystin YR	96.3	100	P/P	50 - 160
Nodularin-R	97.3	96.4	P/P	50 - 160

Reference Method: EPA 8321B

Run ID: A122641

Included Lab Sample IDs: 2449099, 2449100, 2449101

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Anatoxin-a	100	82.4	P/P	50 - 160
Neosaxitoxin	98.1	84.7	P/P	50 - 160
Saxitoxin	104	98.5	P/P	50 - 160

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A122659

Included Lab Sample IDs: 2449093

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	97.0	99.1	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A122689

Included Lab Sample IDs: 2449094, 2449095

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	96.4	95.4	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A122694

Included Lab Sample IDs: 2449093, 2449094, 2449095

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	99.6	98.8	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A122709

Included Lab Sample IDs: 2449093, 2449094, 2449095

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

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A122712

Included Lab Sample IDs: 2449093

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	101	98.8	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A122742

Included Lab Sample IDs: 2449094, 2449095

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	99.2	100	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)	97.6				5.18	
	Color (true)	99.4				5.82	
EPA 350.1 Rev. 2.0	Ammonia-N	98.2	98.2	96.6			1.23
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	93.6	102	105			2.39
	Kjeldahl Nitrogen	101	102	99.4			1.80
EPA 353.2 Rev. 2.0	NO ₂ NO ₃ -N	102	100	99.9			0.484
EPA 365.1 Rev. 2.0	Total-P	102	104	104			0.263
	Total-P	98.6	100	102			1.18
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	99.3	101	102			0.791
EPA 8321B	Anatoxin-a	93.8	91.4	98.4			7.40
	Cylindrospermopsin	94.3	115	115			0.203
	Desmethyl microcystin LR	109	106	111			4.90
	Microcystin HiLR	98.6	105	101			4.23
	Microcystin HtyR	96.8	101	100			0.712
	Microcystin LA	97.6	98.7	101			2.22
	Microcystin LF	104	104	105			0.771
	Microcystin LR	100	109	103			5.50
	Microcystin LW	98.4	107	101			5.79
	Microcystin LY	95.2	104	97.1			6.96
	Microcystin RR	96.0	114	112			1.09
	Microcystin WR	98.5	106	113			6.30
	Microcystin YR	97.3	109	100			8.40
	Neosaxitoxin	81.3	80.9	86.0			6.12
	Nodularin-R	100	106	101			4.35
	Saxitoxin	86.2	94.5	93.1			1.54

Reference Method Descriptions

Method	Description	Associated Samples
DEP SOP: NU-094-1	True Color measured at 450 nm (not valid for NPDES monitoring)	2449090, 2449091, 2449092
EPA 350.1 Rev. 2.0	Ammonia in aqueous matrices as mg N/L	2449093, 2449094, 2449095
EPA 351.2 Rev. 2.0	Total Kjeldahl Nitrogen in aqueous matrices	2449093, 2449094, 2449095
EPA 353.2 Rev. 2.0	Nitrite/Nitrate in aqueous matrices as mg N/L	2449093, 2449094, 2449095
EPA 365.1 Rev. 2.0	Total Phosphorus in aqueous matrices as mg P/L	2449093, 2449094, 2449095
EPA 365.1 Rev. 2.0 dissolved	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	2449096, 2449097, 2449098
EPA 8321B	Microcystins in water matrices by HPLC/MS/MS	2449099, 2449100, 2449101
EPA 8321B	Saxitoxin in water matrices by HPLC/MS/MS	2449099, 2449100, 2449101

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	11/07/2023			11/07/2023 14:52	Chandler E Cox	2449090
	11/07/2023			11/07/2023 14:53	Chandler E Cox	2449091
	11/07/2023			11/07/2023 14:57	Chandler E Cox	2449092
EPA 350.1 Rev. 2.0	11/07/2023			11/13/2023 12:28	Ping Hua	2449093
	11/07/2023			11/13/2023 12:30	Ping Hua	2449094
	11/07/2023			11/13/2023 12:31	Ping Hua	2449095
EPA 351.2 Rev. 2.0	11/07/2023	11/08/2023 11:50	Ping Hua	11/09/2023 12:30	Ping Hua	2449093
	11/07/2023	11/09/2023 10:53	Simonne.V. Calhoun	11/13/2023 10:00	Samantha L Bates	2449094
	11/07/2023	11/09/2023 10:53	Simonne.V. Calhoun	11/13/2023 10:02	Samantha L Bates	2449095
EPA 353.2 Rev. 2.0	11/07/2023			11/14/2023 12:11	Fadila Guebre	2449093
	11/07/2023			11/14/2023 12:17	Fadila Guebre	2449094
	11/07/2023			11/14/2023 12:18	Fadila Guebre	2449095
EPA 365.1 Rev. 2.0	11/07/2023	11/13/2023 13:18	Adam P Silver	11/14/2023 16:45	James L Waggeberby	2449093
	11/07/2023	11/14/2023 15:38	Adam P Silver	11/15/2023 12:03	James L Waggeberby	2449095
	11/07/2023	11/14/2023 15:38	Adam P Silver	11/15/2023 12:04	James L Waggeberby	2449094
EPA 365.1 Rev. 2.0 dissolved	11/07/2023			11/07/2023 14:40	Elise M. Gillis	2449097
	11/07/2023			11/07/2023 14:43	Elise M. Gillis	2449096
	11/07/2023			11/07/2023 14:44	Elise M. Gillis	2449098
EPA 8321B	11/07/2023	11/08/2023 12:00	Hana Lee	11/08/2023 19:09	Tae K Lee	2449099
	11/07/2023	11/08/2023 12:00	Hana Lee	11/08/2023 19:26	Tae K Lee	2449100
	11/07/2023	11/08/2023 12:00	Hana Lee	11/08/2023 19:43	Tae K Lee	2449101
	11/07/2023	11/08/2023 12:00	Hana Lee	11/09/2023 00:02	Tae K Lee	2449099
	11/07/2023	11/08/2023 12:00	Hana Lee	11/09/2023 00:16	Tae K Lee	2449100
	11/07/2023	11/08/2023 12:00	Hana Lee	11/09/2023 00:30	Tae K Lee	2449101
	11/07/2023	11/08/2023 12:00	Hana Lee	11/09/2023 00:30	Tae K Lee	2449101