Chemical Analysis Report

WQAP-2023-04-07-01

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

Event Description: **Algal Bloom Response - CEROC**
Request ID: **RQ-2023-04-03-57**
Customer: **WQAP**
Project ID: **BLOOM-RESP**

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Date Certified: 27-APR-2023 08:37

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 Griffin - SE Shore **Collection Date/Time: 04/06/2023 10:58**

Field ID: HABCE0191_LakeGriffin Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2398983	EPA 8321B	Anatoxin-a	0.25	U	ug/L	P428222	
		Cylindrospermopsin	0.10	U	ug/L	P428221	
		Desmethyl microcystin LR	0.25	U	ug/L	P428221	
		Microcystin HilR	0.25	U	ug/L	P428221	
		Microcystin HtyR	0.25	U	ug/L	P428221	
		Microcystin LA	0.10	U	ug/L	P428221	
		Microcystin LF	0.10	U	ug/L	P428221	
		Microcystin LR	0.25	U	ug/L	P428221	
		Microcystin LW	0.25	U	ug/L	P428221	
		Microcystin LY	0.10	U	ug/L	P428221	
		Microcystin RR	0.10	U	ug/L	P428221	
		Microcystin WR	0.50	U	ug/L	P428221	
		Neosaxitoxin	0.50	U	ug/L	P428222	
		Microcystin YR	0.25	U	ug/L	P428221	
		Saxitoxin	0.50	U	ug/L	P428222	
		Nodularin-R	0.10	U	ug/L	P428221	
2398992	EPA 350.1 Rev. 2.0	Ammonia-N	0.007		mg N/L	P428453	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	2.3		mg N/L	P428879	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P428638	
	EPA 365.1 Rev. 2.0	Total-P	0.040		mg P/L	P428246	
2398995	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P428192	

Sample Location: Lake Osceola - Canton Ave **Collection Date/Time: 04/06/2023 12:48**

Field ID: HABCE0176_LakeOsceola Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2398982	EPA 8321B	Anatoxin-a	0.25	U	ug/L	P428222	
		Cylindrospermopsin	0.10	U	ug/L	P428221	
		Desmethyl microcystin LR	0.25	U	ug/L	P428221	
		Microcystin HilR	0.25	U	ug/L	P428221	
		Microcystin HtyR	0.25	U	ug/L	P428221	
		Microcystin LA	0.10	U	ug/L	P428221	
		Microcystin LF	0.10	U	ug/L	P428221	
		Microcystin LR	0.25	U	ug/L	P428221	
		Microcystin LW	0.25	U	ug/L	P428221	
		Microcystin LY	0.10	U	ug/L	P428221	
		Microcystin RR	0.10	U	ug/L	P428221	
		Microcystin WR	0.50	U	ug/L	P428221	
		Neosaxitoxin	0.50	U	ug/L	P428222	
		Microcystin YR	0.25	U	ug/L	P428221	
		Saxitoxin	0.50	U	ug/L	P428222	
		Nodularin-R	0.10	U	ug/L	P428221	
2398991	EPA 350.1 Rev. 2.0	Ammonia-N	0.005		mg N/L	P428453	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.91		mg N/L	P428879	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.005	I	mg N/L	P428638	
	EPA 365.1 Rev. 2.0	Total-P	0.023		mg P/L	P428246	
2398994	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P428192	

Sample Location: Lake Virginia - Dinky Dock **Collection Date/Time: 04/06/2023 13:14**

Field ID: HABCE0172_LakeVirginia1 Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2398981	EPA 8321B	Anatoxin-a	0.25	U	ug/L	P428222	
		Cylindrospermopsin	0.30	I	ug/L	P428221	
		Desmethyl microcystin LR	0.25	U	ug/L	P428221	
		Microcystin HilR	0.25	U	ug/L	P428221	
		Microcystin HtyR	0.25	U	ug/L	P428221	
		Microcystin LA	0.10	U	ug/L	P428221	
		Microcystin LF	0.10	U	ug/L	P428221	
		Microcystin LR	0.25	U	ug/L	P428221	
		Microcystin LW	0.25	U	ug/L	P428221	
		Microcystin LY	0.10	U	ug/L	P428221	
		Microcystin RR	0.10	U	ug/L	P428221	
		Microcystin WR	0.50	U	ug/L	P428221	
		Neosaxitoxin	0.50	U	ug/L	P428222	
		Microcystin YR	0.25	U	ug/L	P428221	
		Saxitoxin	0.50	U	ug/L	P428222	
		Nodularin-R	0.10	U	ug/L	P428221	
2398990	EPA 350.1 Rev. 2.0	Ammonia-N	0.002	U	mg N/L	P428453	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.62		mg N/L	P428879	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P428638	
	EPA 365.1 Rev. 2.0	Total-P	0.002	I	mg P/L	P428246	
2398993	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P428192	

Quality Assurance Report
Method Blank Results

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P428453

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P428879

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P428638

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P428246

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P428192

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

Reference Method: EPA 8321B
Batch ID: P428221

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: P428222

Component	Result	Code	Units
Anatoxin-a	0.25	U	ug/L
Neosaxitoxin	0.50	U	ug/L
Saxitoxin	0.50	U	ug/L

Quality Assurance Report
Laboratory Control Sample Accuracy

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P428453

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Ammonia-N	94.6		P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P428879

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Kjeldahl Nitrogen	99.0		P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P428638

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
NO2NO3-N	103		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P428246

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P428192

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

Reference Method: EPA 8321B
Batch ID: P428221

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Cylindrospermopsin	99.8		P	40 - 150
Desmethyl microcystin LR	92.2		P	40 - 150
Microcystin HilR	88.9		P	40 - 150
Microcystin HtyR	97.0		P	40 - 150
Microcystin LA	92.2		P	40 - 150
Microcystin LF	76.7		P	40 - 150
Microcystin LR	99.0		P	40 - 150
Microcystin LW	95.7		P	40 - 150
Microcystin LY	72.3		P	40 - 150
Microcystin RR	93.6		P	40 - 150
Microcystin WR	99.9		P	40 - 150
Microcystin YR	93.4		P	40 - 150
Nodularin-R	86.5		P	40 - 150

Reference Method: EPA 8321B
Batch ID: P428222

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Anatoxin-a	55.5		P	40 - 150
Neosaxitoxin	76.8		P	40 - 150
Saxitoxin	65.6		P	40 - 150

Quality Assurance Report
Matrix Spike Accuracy

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P428453

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2398959	Ammonia-N	97.8	99.0	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P428879

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2398897	Kjeldahl Nitrogen	92.8	95.4	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P428638

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2398959	NO2NO3-N	99.0	100	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P428246

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2398990	Total-P	102	102	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P428192

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2398993	O-Phosphate-P	99.1	99.3	P/P	90 - 110

Reference Method: EPA 8321B
Batch ID: P428221

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2398912	Cylindrospermopsin	94.0	104	P/P	40 - 150
2398912	Desmethyl microcystin LR	101	104	P/P	40 - 150
2398912	Microcystin HilR	97.1	109	P/P	40 - 150
2398912	Microcystin HtyR	104	108	P/P	40 - 150
2398912	Microcystin LA	76.7	102	P/P	40 - 150
2398912	Microcystin LF	105	107	P/P	40 - 150
2398912	Microcystin LR	106	107	P/P	40 - 150
2398912	Microcystin LW	117	90.4	P/P	40 - 150
2398912	Microcystin LY	78.0	90.4	P/P	40 - 150
2398912	Microcystin RR	97.6	105	P/P	40 - 150
2398912	Microcystin WR	103	110	P/P	40 - 150
2398912	Microcystin YR	103	99.7	P/P	40 - 150
2398912	Nodularin-R	95.0	99.2	P/P	40 - 150

Reference Method: EPA 8321B
Batch ID: P428222

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2398912	Anatoxin-a	55.3	59.1	P/P	40 - 150
2398912	Neosaxitoxin	64.1	66.8	P/P	40 - 150
2398912	Saxitoxin	61.7	60.5	P/P	40 - 150

Quality Assurance Report
Precision

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P428453

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2398959	Ammonia-N	0.703	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P428879

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2398897	Kjeldahl Nitrogen	2.54	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P428638

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2398959	NO2NO3-N	0.781	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P428246

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2398990	Total-P	0.137	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P428192

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2398993	O-Phosphate-P	0.202	Spike	P	0 - 20

Reference Method: EPA 8321B
Batch ID: P428221

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2398912	Cylindrospermopsin	10.1	Spike	P	0 - 30
2398912	Desmethyl microcystin LR	2.93	Spike	P	0 - 30
2398912	Microcystin HilR	11.8	Spike	P	0 - 30
2398912	Microcystin HtyR	3.22	Spike	P	0 - 30
2398912	Microcystin LA	28.6	Spike	P	0 - 30
2398912	Microcystin LF	1.15	Spike	P	0 - 30
2398912	Microcystin LR	0.807	Spike	P	0 - 30
2398912	Microcystin LW	25.5	Spike	P	0 - 30
2398912	Microcystin LY	14.8	Spike	P	0 - 30
2398912	Microcystin RR	6.93	Spike	P	0 - 30
2398912	Microcystin WR	6.48	Spike	P	0 - 30
2398912	Microcystin YR	3.60	Spike	P	0 - 30
2398912	Nodularin-R	4.34	Spike	P	0 - 30

Quality Assurance Report
Precision

Reference Method: EPA 8321B
Batch ID: P428222

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2398912	Anatoxin-a	6.72	Spike	P	0 - 30
2398912	Neosaxitoxin	4.12	Spike	P	0 - 30
2398912	Saxitoxin	1.99	Spike	P	0 - 30

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

Quality Assurance Report
Surrogates

Lab Sample ID: 2398981
Field Sample ID: HABCE0172_LakeVirginia1

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	Microcystin LR ethyl-d5	90.2	P	30 - 160
EPA 8321B	Neosaxitoxin-15N7	68.7	P	30 - 160

Lab Sample ID: 2398982
Field Sample ID: HABCE0176_LakeOsceola

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	Microcystin LR ethyl-d5	74.6	P	30 - 160
EPA 8321B	Neosaxitoxin-15N7	65.1	P	30 - 160

Lab Sample ID: 2398983
Field Sample ID: HABCE0191_LakeGriffin

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	Microcystin LR ethyl-d5	107	P	30 - 160
EPA 8321B	Neosaxitoxin-15N7	62.8	P	30 - 160

Quality Assurance Report
Calibration Verification

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Run ID: A118448
Included Lab Sample IDs: 2398993, 2398994, 2398995

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	99.4	101	P/P	90 - 110

Reference Method: EPA 8321B
Run ID: A118479
Included Lab Sample IDs: 2398981, 2398982, 2398983

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Cylindrospermopsin	103	108	P/P	50 - 160
Cylindrospermopsin	108	106	P/P	50 - 160
Desmethyl microcystin LR	106	106	P/P	50 - 160
Desmethyl microcystin LR	106	114	P/P	50 - 160
Microcystin HilR	101	115	P/P	50 - 160
Microcystin HilR	115	107	P/P	50 - 160
Microcystin HtyR	101	109	P/P	50 - 160
Microcystin HtyR	103	101	P/P	50 - 160
Microcystin LA	100	118	P/P	50 - 160
Microcystin LA	86.4	100	P/P	50 - 160
Microcystin LF	128	102	P/P	50 - 160
Microcystin LF	98.4	128	P/P	50 - 160
Microcystin LR	106	106	P/P	50 - 160
Microcystin LR	107	106	P/P	50 - 160
Microcystin LW	78.9	98.1	P/P	50 - 160
Microcystin LW	98.1	91.9	P/P	50 - 160
Microcystin LY	106	89.0	P/P	50 - 160
Microcystin LY	116	106	P/P	50 - 160
Microcystin RR	104	104	P/P	50 - 160
Microcystin RR	104	103	P/P	50 - 160
Microcystin WR	107	114	P/P	50 - 160
Microcystin WR	114	114	P/P	50 - 160
Microcystin YR	98.4	100	P/P	50 - 160
Microcystin YR	100	103	P/P	50 - 160
Nodularin-R	101	102	P/P	50 - 160
Nodularin-R	95.8	101	P/P	50 - 160

Reference Method: EPA 8321B
Run ID: A118483
Included Lab Sample IDs: 2398981, 2398982, 2398983

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Anatoxin-a	76.4	71.4	P/P	50 - 160
Anatoxin-a	81.2	76.4	P/P	50 - 160
Neosaxitoxin	111	98.8	P/P	50 - 160
Neosaxitoxin	98.8	95.6	P/P	50 - 160
Saxitoxin	87.9	85.2	P/P	50 - 160
Saxitoxin	90.8	87.9	P/P	50 - 160

Reference Method: EPA 365.1 Rev. 2.0
Run ID: A118506
Included Lab Sample IDs: 2398990, 2398991, 2398992

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits

Quality Assurance Report
Calibration Verification

Reference Method: EPA 365.1 Rev. 2.0
Run ID: A118506
Included Lab Sample IDs: 2398990, 2398991, 2398992

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

Reference Method: EPA 350.1 Rev. 2.0
Run ID: A118557
Included Lab Sample IDs: 2398990, 2398991, 2398992

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	98.4	97.5	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Run ID: A118639
Included Lab Sample IDs: 2398990, 2398991, 2398992

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
NO2NO3-N	104	103	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Run ID: A118759
Included Lab Sample IDs: 2398990, 2398991, 2398992

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	102	95.4	P/P	90 - 110

* Pass/Fail determinations are made for each bracketing calibration verification check.
Control limits for initial calibration checks may be different from those for continuing checks, depending on method requirements.
Where they are different, both control limits are provided.

Quality Assurance Report
Summary

Ref. Method	Analyte	LCS % Recovery	MS % Recovery		Precision		
					LCS	SMP	MS
EPA 350.1 Rev. 2.0	Ammonia-N	94.6	97.8	99.0			0.703
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	99.0	92.8	95.4			2.54
EPA 353.2 Rev. 2.0	NO2NO3-N	103	99.0	100			0.781
EPA 365.1 Rev. 2.0	Total-P	98.5	102	102			0.137
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	99.6	99.1	99.3			0.202
EPA 8321B	Anatoxin-a	55.5	55.3	59.1			6.72
	Cylindrospermopsin	99.8	104	94.0			10.1
	Desmethyl microcystin LR	92.2	101	104			2.93
	Microcystin HilR	88.9	97.1	109			11.8
	Microcystin HtyR	97.0	104	108			3.22
	Microcystin LA	92.2	76.7	102			28.6
	Microcystin LF	76.7	105	107			1.15
	Microcystin LR	99.0	106	107			0.807
	Microcystin LW	95.7	117	90.4			25.5
	Microcystin LY	72.3	78.0	90.4			14.8
	Microcystin RR	93.6	97.6	105			6.93
	Microcystin WR	99.9	103	110			6.48
	Microcystin YR	93.4	103	99.7			3.60
	Neosaxitoxin	76.8	64.1	66.8			4.12
	Nodularin-R	86.5	95.0	99.2			4.34
	Saxitoxin	65.6	61.7	60.5			1.99

Reference Method Descriptions

Method	Description	Associated Samples
EPA 350.1 Rev. 2.0	Ammonia in aqueous matrices as mg N/L	2398990, 2398991, 2398992
EPA 351.2 Rev. 2.0	Total Kjeldahl Nitrogen in aqueous matrices	2398990, 2398991, 2398992
EPA 353.2 Rev. 2.0	Nitrite/Nitrate in aqueous matrices as mg N/L	2398990, 2398991, 2398992
EPA 365.1 Rev. 2.0	Total Phosphorus in aqueous matrices as mg P/L	2398990, 2398991, 2398992
EPA 365.1 Rev. 2.0 dissolved	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	2398993, 2398994, 2398995
EPA 8321B	Microcystins in water matrices by HPLC/MS/MS	2398981, 2398982, 2398983
EPA 8321B	Saxitoxin in water matrices by HPLC/MS/MS	2398981, 2398982, 2398983

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
EPA 350.1 Rev. 2.0	04/07/2023			04/13/2023 12:27	Khloe J Berg	2398990
	04/07/2023			04/13/2023 12:28	Khloe J Berg	2398991
	04/07/2023			04/13/2023 12:30	Khloe J Berg	2398992
EPA 351.2 Rev. 2.0	04/07/2023	04/24/2023 10:23	Dana G. Hughes	04/25/2023 13:08	Samantha L Bates	2398990
	04/07/2023	04/24/2023 10:23	Dana G. Hughes	04/25/2023 13:10	Samantha L Bates	2398991
	04/07/2023	04/24/2023 10:23	Dana G. Hughes	04/25/2023 13:11	Samantha L Bates	2398992
EPA 353.2 Rev. 2.0	04/07/2023			04/18/2023 11:23	Anna M. Plaviak	2398990
	04/07/2023			04/18/2023 11:24	Anna M. Plaviak	2398991
	04/07/2023			04/18/2023 11:25	Anna M. Plaviak	2398992
EPA 365.1 Rev. 2.0	04/07/2023	04/10/2023 17:45	Alexis Price	04/11/2023 13:37	Simonne.V. Calhoun	2398990
	04/07/2023	04/10/2023 17:45	Alexis Price	04/11/2023 13:40	Simonne.V. Calhoun	2398991
	04/07/2023	04/10/2023 17:45	Alexis Price	04/11/2023 13:41	Simonne.V. Calhoun	2398992
EPA 365.1 Rev. 2.0 dissolved	04/07/2023			04/07/2023 12:40	Elise M. Gillis	2398993
	04/07/2023			04/07/2023 12:43	Elise M. Gillis	2398994, 2398995
EPA 8321B	04/07/2023	04/10/2023 09:00	Touraj Touran	04/10/2023 18:53	Manjita Shrestha	2398981
	04/07/2023	04/10/2023 09:00	Touraj Touran	04/10/2023 19:10	Manjita Shrestha	2398982
	04/07/2023	04/10/2023 09:00	Touraj Touran	04/10/2023 19:44	Manjita Shrestha	2398983
	04/07/2023	04/10/2023 09:00	Touraj Touran	04/11/2023 02:19	Manjita Shrestha	2398981
	04/07/2023	04/10/2023 09:00	Touraj Touran	04/11/2023 02:33	Manjita Shrestha	2398982
	04/07/2023	04/10/2023 09:00	Touraj Touran	04/11/2023 03:00	Manjita Shrestha	2398983