

Chemical Analysis Report

WQAP-2023-06-15-01

Florida DEP Laboratory
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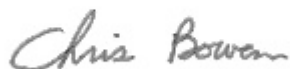
Event Description: **Algal Bloom Response - CEROC**
Request ID: **RQ-2023-06-12-20**
Customer: **WQAP**
Project ID: **BLOOM-RESP**

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Certified by: Chris Bowen, Environmental Administrator

Date Certified: 29-JUN-2023 12:33



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: Louise Lake - NW Lobe

Collection Date/Time: 06/14/2023 10:47

Field ID: HABCE0183_LouiseLake

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2417524	EPA 8321B	Anatoxin-a	0.25	U	ug/L	P431232	
		Cylindrospermopsin	0.10	U	ug/L	P431184	
		Desmethyl microcystin LR	0.25	U	ug/L	P431184	
		Microcystin HILR	0.25	U	ug/L	P431184	
		Microcystin HtyR	0.25	U	ug/L	P431184	
		Microcystin LA	0.13	I	ug/L	P431184	
		Microcystin LF	0.10	U	ug/L	P431184	
		Microcystin LR	0.25	U	ug/L	P431184	
		Microcystin LW	0.25	U	ug/L	P431184	
		Microcystin LY	0.10	U	ug/L	P431184	
		Microcystin RR	0.10	U	ug/L	P431184	
		Microcystin WR	0.50	U	ug/L	P431184	
		Neosaxitoxin	0.50	U	ug/L	P431232	
		Microcystin YR	0.25	U	ug/L	P431184	
		Saxitoxin	0.50	U	ug/L	P431232	
		Nodularin-R	0.10	U	ug/L	P431184	
2417529	EPA 350.1 Rev. 2.0	Ammonia-N	0.006		mg N/L	P431529	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.4		mg N/L	P431700	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P431720	
	EPA 365.1 Rev. 2.0	Total-P	0.029		mg P/L	P431384	
2417532	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P431325	

Sample Location: Bonita Lake - S Shore

Collection Date/Time: 06/14/2023 11:54

Field ID: HABCE0189_BonitaLake

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2417525	EPA 8321B	Anatoxin-a	0.25	U	ug/L	P431232	
		Cylindrospermopsin	0.20	I	ug/L	P431184	
		Desmethyl microcystin LR	0.25	U	ug/L	P431184	
		Microcystin HILR	0.25	U	ug/L	P431184	
		Microcystin HtyR	0.25	U	ug/L	P431184	
		Microcystin LA	0.10	U	ug/L	P431184	
		Microcystin LF	0.10	U	ug/L	P431184	
		Microcystin LR	0.25	U	ug/L	P431184	
		Microcystin LW	0.25	U	ug/L	P431184	
		Microcystin LY	0.10	U	ug/L	P431184	
		Microcystin RR	0.10	U	ug/L	P431184	
		Microcystin WR	0.50	U	ug/L	P431184	
		Neosaxitoxin	0.50	U	ug/L	P431232	
		Microcystin YR	0.25	U	ug/L	P431184	
		Saxitoxin	0.50	U	ug/L	P431232	
		Nodularin-R	0.10	U	ug/L	P431184	
2417530	EPA 350.1 Rev. 2.0	Ammonia-N	0.059		mg N/L	P431529	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	6.1		mg N/L	P431700	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P431720	
	EPA 365.1 Rev. 2.0	Total-P	0.26		mg P/L	P431731	
2417533	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P431325	

Sample Location: Pioneer Lake - NE Shore

Collection Date/Time: 06/14/2023 11:24

Field ID: HABCE0190_PioneerLake

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2417526	EPA 8321B	Anatoxin-a	0.25	U	ug/L	P431232	
		Cylindrospermopsin	0.10	U	ug/L	P431184	
		Desmethyl microcystin LR	0.25	U	ug/L	P431184	
		Microcystin HILR	0.25	U	ug/L	P431184	
		Microcystin HtyR	0.25	U	ug/L	P431184	
		Microcystin LA	0.10	U	ug/L	P431184	
		Microcystin LF	0.10	U	ug/L	P431184	
		Microcystin LR	0.25	U	ug/L	P431184	
		Microcystin LW	0.25	U	ug/L	P431184	
		Microcystin LY	0.10	U	ug/L	P431184	
		Microcystin RR	0.10	U	ug/L	P431184	
		Microcystin WR	0.50	U	ug/L	P431184	
		Neosaxitoxin	0.50	U	ug/L	P431232	
		Microcystin YR	0.25	U	ug/L	P431184	
		Saxitoxin	0.50	U	ug/L	P431232	
		Nodularin-R	0.10	U	ug/L	P431184	
2417531	EPA 350.1 Rev. 2.0	Ammonia-N	0.014		mg N/L	P431529	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.53		mg N/L	P431700	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.64		mg N/L	P431720	
	EPA 365.1 Rev. 2.0	Total-P	0.014		mg P/L	P431384	
2417534	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P431325	

Quality Assurance Report Method Blank Results

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P431529

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P431700

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P431720

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P431384

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P431731

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P431325

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

Reference Method: EPA 8321B
Batch ID: P431184

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: P431232

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: P431529

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P431700

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: P431720

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
NO2NO3-N	105		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P431384

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P431731

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P431325

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

Reference Method: EPA 8321B
Batch ID: P431184

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Cylindrospermopsin	102		P	40 - 160
Desmethyl microcystin LR	93.0		P	40 - 160
Microcystin H1LR	86.8		P	40 - 160
Microcystin HtyR	92.3		P	40 - 160
Microcystin LA	103		P	40 - 160
Microcystin LF	88.2		P	40 - 160
Microcystin LR	98.4		P	40 - 160
Microcystin LW	93.0		P	40 - 160
Microcystin LY	98.1		P	40 - 160
Microcystin RR	93.0		P	40 - 160
Microcystin WR	96.6		P	40 - 160
Microcystin YR	86.7		P	40 - 160
Nodularin-R	92.3		P	40 - 160

Quality Assurance Report

Laboratory Control Sample Accuracy

Reference Method: EPA 8321B
Batch ID: P431232

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Anatoxin-a	81.1		P	40 - 150
Neosaxitoxin	83.0		P	40 - 150
Saxitoxin	82.6		P	40 - 150

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P431529

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2417529	Ammonia-N	102	97.8	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P431700

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2417531	Kjeldahl Nitrogen	105	106	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P431720

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2417497	NO2NO3-N	100	101	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P431384

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2417482	Total-P	99.8	97.3	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P431731

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2417107	Total-P	100	101	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P431325

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2417534	O-Phosphate-P	99.3	99.9	P/P	90 - 110

Reference Method: EPA 8321B
Batch ID: P431184

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2416612	Cylindrospermopsin	105	104	P/P	40 - 160
2416612	Desmethyl microcystin LR	115	108	P/P	40 - 160
2416612	Microcystin HILR	92.6	101	P/P	40 - 160
2416612	Microcystin HtyR	108	105	P/P	40 - 160
2416612	Microcystin LA	101	100	P/P	40 - 160
2416612	Microcystin LF	89.5	84.3	P/P	40 - 160
2416612	Microcystin LR	112	113	P/P	40 - 160
2416612	Microcystin LW	89.6	87.1	P/P	40 - 160
2416612	Microcystin LY	103	101	P/P	40 - 160
2416612	Microcystin RR	108	94.3	P/P	40 - 160
2416612	Microcystin WR	96.7	98.3	P/P	40 - 160
2416612	Microcystin YR	92.6	93.7	P/P	40 - 160
2416612	Nodularin-R	99.7	101	P/P	40 - 160

Quality Assurance Report

Matrix Spike Accuracy

Reference Method: EPA 8321B
Batch ID: P431232

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2416612	Anatoxin-a	79.5	84.1	P/P	40 - 150
2416612	Neosaxitoxin	73.5	76.7	P/P	40 - 150
2416612	Saxitoxin	74.6	71.1	P/P	40 - 150

Quality Assurance Report Precision

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P431529

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2417529	Ammonia-N	3.94	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P431700

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2417531	Kjeldahl Nitrogen	0.572	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P431720

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2417497	NO2NO3-N	0.249	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P431384

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2417482	Total-P	2.44	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P431731

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2417107	Total-P	0.290	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P431325

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2417534	O-Phosphate-P	0.602	Spike	P	0 - 20

Reference Method: EPA 8321B
Batch ID: P431184

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2416612	Cylindrospermopsin	1.18	Spike	P	0 - 30
2416612	Desmethyl microcystin LR	5.87	Spike	P	0 - 30
2416612	Microcystin HtIR	9.20	Spike	P	0 - 30
2416612	Microcystin HtyR	3.62	Spike	P	0 - 30
2416612	Microcystin LA	0.675	Spike	P	0 - 30
2416612	Microcystin LF	6.02	Spike	P	0 - 30
2416612	Microcystin LR	1.06	Spike	P	0 - 30
2416612	Microcystin LW	2.89	Spike	P	0 - 30
2416612	Microcystin LY	1.24	Spike	P	0 - 30

Quality Assurance Report Precision

Reference Method: EPA 8321B
Batch ID: P431184

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2416612	Microcystin RR	13.9	Spike	P	0 - 30
2416612	Microcystin WR	1.65	Spike	P	0 - 30
2416612	Microcystin YR	1.17	Spike	P	0 - 30
2416612	Nodularin-R	1.72	Spike	P	0 - 30

Reference Method: EPA 8321B
Batch ID: P431232

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2416612	Anatoxin-a	5.58	Spike	P	0 - 30
2416612	Neosaxitoxin	4.27	Spike	P	0 - 30
2416612	Saxitoxin	4.69	Spike	P	0 - 30

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

Quality Assurance Report Surrogates

Lab Sample ID: 2417524

Field Sample ID: HABCE0183_LouiseLake

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	Microcystin LR ethyl-d5	120	P	30 - 160
EPA 8321B	Saxitoxin-15N7	63.7	P	30 - 160

Lab Sample ID: 2417525

Field Sample ID: HABCE0189_BonitaLake

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	Microcystin LR ethyl-d5	124	P	30 - 160
EPA 8321B	Saxitoxin-15N7	66.0	P	30 - 160

Lab Sample ID: 2417526

Field Sample ID: HABCE0190_PioneerLake

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	Microcystin LR ethyl-d5	109	P	30 - 160
EPA 8321B	Saxitoxin-15N7	63.3	P	30 - 160

Quality Assurance Report Calibration Verification

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Run ID: A119826

Included Lab Sample IDs: 2417532, 2417533, 2417534

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	97.6	97.3	P/P	90 - 110

Reference Method: EPA 8321B

Run ID: A119837

Included Lab Sample IDs: 2417524, 2417525, 2417526

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Anatoxin-a	81.8	81.7	P/P	50 - 160
Neosaxitoxin	87.2	91.0	P/P	50 - 160
Saxitoxin	84.0	85.1	P/P	50 - 160

Reference Method: EPA 8321B

Run ID: A119839

Included Lab Sample IDs: 2417524, 2417525, 2417526

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Cylindrospermopsin	112	109	P/P	60 - 160
Desmethyl microcystin LR	103	105	P/P	50 - 160
Microcystin HII R	89.0	99.8	P/P	60 - 160
Microcystin HtyR	99.2	99.9	P/P	60 - 160
Microcystin LA	103	110	P/P	50 - 160
Microcystin LF	83.7	101	P/P	60 - 160
Microcystin LR	104	102	P/P	60 - 160
Microcystin LW	83.1	82.6	P/P	60 - 160
Microcystin LY	118	113	P/P	60 - 160
Microcystin RR	113	113	P/P	60 - 160
Microcystin WR	108	101	P/P	60 - 160
Microcystin YR	95.2	91.9	P/P	60 - 160
Nodularin-R	98.8	104	P/P	60 - 160

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A119917

Included Lab Sample IDs: 2417529, 2417531

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	99.5	101	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A119925

Included Lab Sample IDs: 2417529, 2417530, 2417531

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	98.9	98.7	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A119996

Included Lab Sample IDs: 2417529, 2417530, 2417531

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

Quality Assurance Report Calibration Verification

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A120028

Included Lab Sample IDs: 2417530

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	100	101	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A120038

Included Lab Sample IDs: 2417529, 2417530, 2417531

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	91.6	102	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
EPA 350.1 Rev. 2.0	Ammonia-N	98.4	102	97.8		3.94
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	101	105	106		0.572
EPA 353.2 Rev. 2.0	NO2NO3-N	105	100	101		0.249
EPA 365.1 Rev. 2.0	Total-P	101	99.8	97.3		2.44
	Total-P	100	100	101		0.290
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	102	99.3	99.9		0.602
EPA 8321B	Anatoxin-a	81.1	79.5	84.1		5.58
	Cylindrospermopsin	102	105	104		1.18
	Desmethyl microcystin LR	93.0	115	108		5.87
	Microcystin HiLR	86.8	92.6	101		9.20
	Microcystin HtyR	92.3	108	105		3.62
	Microcystin LA	103	101	100		0.675
	Microcystin LF	88.2	89.5	84.3		6.02
	Microcystin LR	98.4	112	113		1.06
	Microcystin LW	93.0	89.6	87.1		2.89
	Microcystin LY	98.1	103	101		1.24
	Microcystin RR	93.0	108	94.3		13.9
	Microcystin WR	96.6	96.7	98.3		1.65
	Microcystin YR	86.7	92.6	93.7		1.17
	Neosaxitoxin	83.0	73.5	76.7		4.27
	Nodularin-R	92.3	99.7	101		1.72
	Saxitoxin	82.6	74.6	71.1		4.69

Reference Method Descriptions

Method	Description	Associated Samples
EPA 350.1 Rev. 2.0	Ammonia in aqueous matrices as mg N/L	2417529, 2417530, 2417531
EPA 351.2 Rev. 2.0	Total Kjeldahl Nitrogen in aqueous matrices	2417529, 2417530, 2417531
EPA 353.2 Rev. 2.0	Nitrite/Nitrate in aqueous matrices as mg N/L	2417529, 2417530, 2417531
EPA 365.1 Rev. 2.0	Total Phosphorus in aqueous matrices as mg P/L	2417529, 2417530, 2417531
EPA 365.1 Rev. 2.0 dissolved	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	2417532, 2417533, 2417534
EPA 8321B	Microcystins in water matrices by HPLC/MS/MS	2417524, 2417525, 2417526
EPA 8321B	Saxitoxin in water matrices by HPLC/MS/MS	2417524, 2417525, 2417526

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	06/15/2023			06/20/2023 15:26	Khloe J Berg	2417529
	06/15/2023			06/20/2023 15:30	Khloe J Berg	2417530
	06/15/2023			06/20/2023 15:31	Khloe J Berg	2417531
EPA 351.2 Rev. 2.0	06/15/2023	06/23/2023 09:33	Dana G. Hughes	06/26/2023 15:01	Ping Hua	2417529
	06/15/2023	06/23/2023 09:33	Dana G. Hughes	06/26/2023 15:02	Ping Hua	2417530
	06/15/2023	06/23/2023 09:33	Dana G. Hughes	06/26/2023 15:04	Ping Hua	2417531
EPA 353.2 Rev. 2.0	06/15/2023			06/23/2023 11:38	Beverly Y. Sanders	2417529
	06/15/2023			06/23/2023 11:39	Beverly Y. Sanders	2417530
	06/15/2023			06/23/2023 11:40	Beverly Y. Sanders	2417531
EPA 365.1 Rev. 2.0	06/15/2023	06/16/2023 15:00	Alexis Price	06/20/2023 11:25	James L Waggeberby	2417529
	06/15/2023	06/16/2023 15:00	Alexis Price	06/20/2023 11:26	James L Waggeberby	2417531
	06/15/2023	06/23/2023 15:29	Adam P Silver	06/26/2023 12:26	Simonne.V. Calhoun	2417530
EPA 365.1 Rev. 2.0 dissolved	06/15/2023			06/15/2023 13:08	Elise M. Gillis	2417534
	06/15/2023			06/15/2023 13:12	Elise M. Gillis	2417532, 2417533
EPA 8321B	06/15/2023	06/15/2023 13:00	Touraj Touran	06/15/2023 22:23	Touraj Touran	2417524
	06/15/2023	06/15/2023 13:00	Touraj Touran	06/15/2023 22:40	Touraj Touran	2417525
	06/15/2023	06/15/2023 13:00	Touraj Touran	06/15/2023 22:57	Touraj Touran	2417526
	06/15/2023	06/15/2023 13:00	Touraj Touran	06/15/2023 23:29	Touraj Touran	2417524
	06/15/2023	06/15/2023 13:00	Touraj Touran	06/15/2023 23:43	Touraj Touran	2417525
	06/15/2023	06/15/2023 13:00	Touraj Touran	06/15/2023 23:56	Touraj Touran	2417526