

Chemical Analysis Report

WQAP-2021-07-30-01

Florida Department of Environmental Protection
Central Laboratory
2600 Blair Stone Road
Tallahassee, FL 32399-2400
DOH Accreditation E31780

Event Description: **Algal Bloom Response -SOROC**
Request ID: **RQ-2021-07-05-59**
Customer: **WQAP**
Project ID: **BLOOM-RESP**

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Date Certified: 26-AUG-2021 09:36



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: Caloosahatchee Jaycee Park

Collection Date/Time: 07/29/2021 09:45

Field ID: HAB-SD-07292021-0745

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2265978	EPA 8321B	Anatoxin-a	0.25	U	ug/L	P401837	
		Cylindrospermopsin	0.10	U	ug/L	P401837	
		Desmethyl microcystin LR	0.25	U	ug/L	P401837	
		Microcystin HIR**	0.25	U	ug/L	P401837	
		Microcystin HtyR**	0.25	U	ug/L	P401837	
		Microcystin LA	0.10	U	ug/L	P401837	
		Microcystin LF	0.10	UJ	ug/L	P401837	RPD
		Microcystin LR	0.28	I	ug/L	P401837	
		Microcystin LW	0.25	U	ug/L	P401837	
		Microcystin LY	0.10	U	ug/L	P401837	
		Microcystin RR	0.10	U	ug/L	P401837	
		Microcystin WR	0.50	U	ug/L	P401837	
		Microcystin YR	0.25	U	ug/L	P401837	
		Nodularin-R**	0.10	U	ug/L	P401837	
2265980	EPA 350.1 Rev. 2.0	Ammonia-N	0.051		mg N/L	P402268	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.95		mg N/L	P402526	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.024		mg N/L	P401870	
	EPA 365.1 Rev. 2.0	Total-P	0.10	J	mg P/L	P401840	MS
2265982	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.072		mg P/L	P401769	

Ref. Method and Comment:

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

EPA 365.1 Rev. 2.0: Total-P: Refer to the Lab Analysis Report for an explanation of QC Codes.

Sample Location: Caloosahatchee Rosen Park

Collection Date/Time: 07/29/2021 08:20

Field ID: HAB-SD-07292021-0820

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2265979	EPA 8321B	Anatoxin-a	0.25	U	ug/L	P401837	
		Cylindrospermopsin	0.10	U	ug/L	P401837	
		Desmethyl microcystin LR	0.25	U	ug/L	P401837	
		Microcystin HilR**	0.25	U	ug/L	P401837	
		Microcystin HtyR**	0.25	U	ug/L	P401837	
		Microcystin LA	0.10	U	ug/L	P401837	
		Microcystin LF	0.10	U	ug/L	P401837	RPD
		Microcystin LR	0.25	U	ug/L	P401837	
		Microcystin LW	0.25	U	ug/L	P401837	
		Microcystin LY	0.10	U	ug/L	P401837	
		Microcystin RR	0.10	U	ug/L	P401837	
		Microcystin WR	0.50	U	ug/L	P401837	
		Microcystin YR	0.25	U	ug/L	P401837	
		Nodularin-R**	0.10	U	ug/L	P401837	
2265981	EPA 350.1 Rev. 2.0	Ammonia-N	0.059		mg N/L	P402179	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.0		mg N/L	P402635	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.048		mg N/L	P401809	
	EPA 365.1 Rev. 2.0	Total-P	0.11		mg P/L	P402012	
2265983	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.064		mg P/L	P401768	

Ref. Method and Comment:

EPA 351.2 Rev. 2.0: Batch matrix spike recoveries are unavailable because of high analyte concentration in the QC sample.

Quality Assurance Report Method Blank Results

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P402179

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P402268

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P402526

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P402635

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P401809

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P401870

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P401840

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P402012

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P401768

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

Quality Assurance Report

Method Blank Results

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P401769

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

Reference Method: EPA 8321B
Batch ID: P401837

Component	Result	Code	Units
Anatoxin-a	0.25	U	ug/L
Cylindrospermopsin	0.10	U	ug/L
Desmethyl microcystin LR	0.25	U	ug/L
Microcystin H1R	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 Laboratory Control Sample Accuracy

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P402179

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P402268

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P402526

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P402635

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P401809

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P401870

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P401840

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total-P	107		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P402012

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P401768

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

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P401769

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

Reference Method: EPA 8321B
Batch ID: P401837

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Anatoxin-a	98.8		P	40 - 150
Cylindrospermopsin	126		P	40 - 150
Desmethyl microcystin LR	91.7		P	40 - 150
Microcystin HIR	102		P	40 - 150
Microcystin HtyR	104		P	40 - 150
Microcystin LA	85.4		P	40 - 150
Microcystin LF	79.7		P	40 - 150
Microcystin LR	89.0		P	40 - 150
Microcystin LW	97.8		P	40 - 150
Microcystin LY	84.1		P	40 - 150
Microcystin RR	103		P	40 - 150
Microcystin WR	96.4		P	40 - 150
Microcystin YR	88.7		P	40 - 150
Nodularin-R	108		P	40 - 150

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P402179

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2265956	Ammonia-N	102	101	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P402268

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2266963	Ammonia-N	101	103	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P402526

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2265722	Kjeldahl Nitrogen	106	108	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P401809

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2265948	NO2NO3-N	100	100	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P401870

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2265721	NO2NO3-N	100	100	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P401840

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2265980	Total-P	111	110	F/F	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P402012

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2266213	Total-P	105	106	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P401768

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2265949	O-Phosphate-P	96.0	97.2	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P401769

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2266333	O-Phosphate-P	92.3	92.1	P/P	90 - 110

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 8321B

Batch ID: P401837

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2265978	Anatoxin-a	110	112	P/P	40 - 150
2265978	Cylindrospermopsin	126	129	P/P	40 - 150
2265978	Desmethyl microcystin LR	98.6	108	P/P	40 - 150
2265978	Microcystin HilR	107	111	P/P	40 - 150
2265978	Microcystin HtyR	100	107	P/P	40 - 150
2265978	Microcystin LA	95.8	91.8	P/P	40 - 150
2265978	Microcystin LF	69.6	95.2	P/P	40 - 150
2265978	Microcystin LR	88.9	93.3	P/P	40 - 150
2265978	Microcystin LW	77.5	90.0	P/P	40 - 150
2265978	Microcystin LY	93.0	96.9	P/P	40 - 150
2265978	Microcystin RR	105	112	P/P	40 - 150
2265978	Microcystin WR	102	101	P/P	40 - 150
2265978	Microcystin YR	101	113	P/P	40 - 150
2265978	Nodularin-R	108	121	P/P	40 - 150

Quality Assurance Report Precision

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P402179

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2265956	Ammonia-N	0.394	Spike	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P402268

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2266963	Ammonia-N	1.50	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P402526

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2265722	Kjeldahl Nitrogen	0.827	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P402635

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2265865	Kjeldahl Nitrogen	2.99	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P401809

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2265948	NO2NO3-N	0.0	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P401870

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2265721	NO2NO3-N	0.0	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P401840

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2265980	Total-P	0.611	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P402012

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2266213	Total-P	0.464	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P401768

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2265949	O-Phosphate-P	1.24	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P401769

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2266333	O-Phosphate-P	0.205	Spike	P	0 - 20

Reference Method: EPA 8321B
Batch ID: P401837

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2265978	Anatoxin-a	2.29	Spike	P	0 - 30
2265978	Cylindrospermopsin	2.25	Spike	P	0 - 30
2265978	Desmethyl microcystin LR	8.99	Spike	P	0 - 30
2265978	Microcystin HlIR	3.62	Spike	P	0 - 30
2265978	Microcystin HtyR	6.84	Spike	P	0 - 30
2265978	Microcystin LA	4.21	Spike	P	0 - 30
2265978	Microcystin LF	31.1	Spike	F	0 - 30
2265978	Microcystin LR	4.67	Spike	P	0 - 30
2265978	Microcystin LW	14.9	Spike	P	0 - 30
2265978	Microcystin LY	4.13	Spike	P	0 - 30
2265978	Microcystin RR	6.63	Spike	P	0 - 30
2265978	Microcystin WR	1.69	Spike	P	0 - 30
2265978	Microcystin YR	11.4	Spike	P	0 - 30
2265978	Nodularin-R	11.5	Spike	P	0 - 30

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

Quality Assurance Report Surrogates

Lab Sample ID: 2265978

Field Sample ID: HAB-SD-07292021-0745

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	Microcystin LR-d7	119	P	30 - 160
EPA 8321B	Microcystin LR ethyl-d5	105	P	30 - 160

Lab Sample ID: 2265979

Field Sample ID: HAB-SD-07292021-0820

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	Microcystin LR-d7	121	P	30 - 160
EPA 8321B	Microcystin LR ethyl-d5	106	P	30 - 160

Quality Assurance Report Calibration Verification

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Run ID: A106947

Included Lab Sample IDs: 2265982, 2265983

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	96.6	97.7	P/P	90 - 110
O-Phosphate-P	98.2	96.8	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A106974

Included Lab Sample IDs: 2265981

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
NO2NO3-N	99.5	100	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A106997

Included Lab Sample IDs: 2265980

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

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A107005

Included Lab Sample IDs: 2265980

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	99.8	99.2	P/P	90 - 110

Reference Method: EPA 8321B

Run ID: A107011

Included Lab Sample IDs: 2265978, 2265979

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Anatoxin-a	110	108	P/P	50 - 160
Cylindrospermopsin	121	122	P/P	60 - 160
Desmethyl microcystin LR	93.4	93.8	P/P	60 - 160
Microcystin HIR	105	100	P/P	60 - 160
Microcystin HtyR	98.9	101	P/P	60 - 160
Microcystin LA	87.8	86.5	P/P	50 - 160
Microcystin LF	95.4	77.1	P/P	60 - 160
Microcystin LR	91.6	84.0	P/P	60 - 160
Microcystin LW	78.6	89.9	P/P	60 - 160
Microcystin LY	93.5	89.8	P/P	60 - 160
Microcystin RR	105	103	P/P	60 - 160
Microcystin WR	96.4	96.5	P/P	60 - 160
Microcystin YR	94.9	97.0	P/P	60 - 160
Nodularin-R	103	108	P/P	60 - 160

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A107087

Included Lab Sample IDs: 2265981

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	103	106	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A107121

Included Lab Sample IDs: 2265981

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

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A107154

Included Lab Sample IDs: 2265980

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	98.9	99.5	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A107325

Included Lab Sample IDs: 2265980

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	100	105	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A107354

Included Lab Sample IDs: 2265981

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	104	101	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	101	102	101			0.394
	Ammonia-N	100	101	103			1.50
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	104	108	106			0.827
	Kjeldahl Nitrogen	106					2.99
EPA 353.2 Rev. 2.0	NO2NO3-N	99.0	100	100			0.0
	NO2NO3-N	100	100	100			0.0
EPA 365.1 Rev. 2.0	Total-P	107	111	110			0.611
	Total-P	106	105	106			0.464
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	99.1	96.0	97.2			1.24
	O-Phosphate-P	99.6	92.3	92.1			0.205
EPA 8321B	Anatoxin-a	98.8	110	112			2.29
	Cylindrospermopsin	126	126	129			2.25
	Desmethyl microcystin LR	91.7	98.6	108			8.99
	Microcystin HiLR	102	107	111			3.62
	Microcystin HtyR	104	100	107			6.84
	Microcystin LA	85.4	95.8	91.8			4.21
	Microcystin LF	79.7	69.6	95.2			31.1
	Microcystin LR	89.0	88.9	93.3			4.67
	Microcystin LW	97.8	77.5	90.0			14.9
	Microcystin LY	84.1	93.0	96.9			4.13
	Microcystin RR	103	105	112			6.63
	Microcystin WR	96.4	102	101			1.69
	Microcystin YR	88.7	101	113			11.4
	Nodularin-R	108	108	121			11.5

Reference Method Descriptions

Method	Description	Associated Samples
EPA 350.1 Rev. 2.0	Ammonia in aqueous matrices as mg N/L	2265980, 2265981
EPA 351.2 Rev. 2.0	Total Kjeldahl Nitrogen in aqueous matrices	2265980, 2265981
EPA 353.2 Rev. 2.0	Nitrite/Nitrate in aqueous matrices as mg N/L	2265980, 2265981
EPA 365.1 Rev. 2.0	Total Phosphorus in aqueous matrices as mg P/L	2265980, 2265981
EPA 365.1 Rev. 2.0 dissolved	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	2265982, 2265983
EPA 8321B	Microcystins in water matrices by HPLC/MS/MS	2265978, 2265979

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	07/30/2021			08/09/2021 14:16	Ping Hua	2265981
	07/30/2021			08/10/2021 14:28	Roberta Tatti	2265980
EPA 351.2 Rev. 2.0	07/30/2021	08/16/2021 18:04	Madeline Gruver	08/18/2021 14:04	Virginia P. Brown	2265980
	07/30/2021	08/18/2021 14:21	Benjamin T. Nordmann	08/19/2021 12:05	Virginia P. Brown	2265981
EPA 353.2 Rev. 2.0	07/30/2021			08/02/2021 09:25	Beverly Y. Sanders	2265981
	07/30/2021			08/03/2021 11:14	Beverly Y. Sanders	2265980
EPA 365.1 Rev. 2.0	07/30/2021	08/02/2021 17:13	Simonne.V. Calhoun	08/03/2021 13:56	Lipi Saha	2265980
	07/30/2021	08/05/2021 15:45	Simonne.V. Calhoun	08/06/2021 09:54	Shengyu Ding	2265981
EPA 365.1 Rev. 2.0 dissolved	07/30/2021			07/30/2021 15:20	Ping Hua	2265982
	07/30/2021			07/30/2021 16:08	Ping Hua	2265983
EPA 8321B	07/30/2021	08/03/2021 07:00	Pramila Ghimire	08/03/2021 14:10	Pramila Ghimire	2265978
	07/30/2021	08/03/2021 07:00	Pramila Ghimire	08/03/2021 14:26	Pramila Ghimire	2265979