

Chemical Analysis Report

WQAP-2023-08-01-01

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

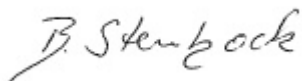
Event Description: **Algal Bloom Response - SWD**
Request ID: **RQ-2023-06-26-51**
Customer: **WQAP**
Project ID: **BLOOM-RESP**

Send Reports to:
FL Dept. of Environmental Protection
13051 N Telecom Parkway
Suite 101
Temple Terrace, FL 33637
Attn: Sarah Meyer

For additional information please contact
Colin Wright, Ph.D.
Chris Bowen, B.S.
Kerry Tate, Ph.D.
Dr. rer. nat. Bettina Steinbock
Thekkekalathil Chandrasekhar, Ph.D, QA Officer
Phone (850) 245-8085

Certified by: Dr. rer. nat. Bettina Steinbock, Environmental Administrator

Date Certified: 10-AUG-2023 18:28



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: Peace River - at Bartow

Collection Date/Time: 07/31/2023 11:05

Field ID: HAB-SW-0220

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2427671	DEP SOP: NU-094-1	Color (true)	95		PCU	P433286	
2427674	EPA 350.1 Rev. 2.0	Ammonia-N	0.014		mg N/L	P433463	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	2.4		mg N/L	P433319	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.029		mg N/L	P433385	
	EPA 365.1 Rev. 2.0	Total-P	0.81		mg P/L	P433293	
2427677	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.24		mg P/L	P433291	
2427681	EPA 8321B	Anatoxin-a	0.25	U	ug/L	P433311	
		Cylindrospermopsin	0.10	U	ug/L	P433310	
		Desmethyl microcystin LR	0.25	U	ug/L	P433310	
		Microcystin HiLR	0.25	U	ug/L	P433310	
		Microcystin HtyR	0.25	U	ug/L	P433310	
		Microcystin LA	0.10	U	ug/L	P433310	
		Microcystin LF	0.10	U	ug/L	P433310	
		Microcystin LR	0.25	U	ug/L	P433310	
		Microcystin LW	0.25	U	ug/L	P433310	
		Microcystin LY	0.10	U	ug/L	P433310	
		Microcystin RR	0.10	U	ug/L	P433310	
		Microcystin WR	0.50	U	ug/L	P433310	
		Neosaxitoxin	0.50	U	ug/L	P433311	
		Microcystin YR	0.25	U	ug/L	P433310	
		Saxitoxin	0.50	U	ug/L	P433311	
		Nodularin-R	0.10	U	ug/L	P433310	

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.

Sample Location: Peace River - at Fort Meade

Collection Date/Time: 07/31/2023 10:40

Field ID: HAB-SW-0221

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2427672	DEP SOP: NU-094-1	Color (true)	82		PCU	P433286	
2427675	EPA 350.1 Rev. 2.0	Ammonia-N	0.013		mg N/L	P433463	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	3.1		mg N/L	P433319	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.14		mg N/L	P433385	
	EPA 365.1 Rev. 2.0	Total-P	1.1		mg P/L	P433293	
2427678	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.32		mg P/L	P433291	
2427682	EPA 8321B	Anatoxin-a	0.25	U	ug/L	P433311	
		Cylindrospermopsin	0.10	U	ug/L	P433310	
		Desmethyl microcystin LR	0.25	U	ug/L	P433310	
		Microcystin HiLR	0.25	U	ug/L	P433310	
		Microcystin HtyR	0.25	U	ug/L	P433310	
		Microcystin LA	0.10	U	ug/L	P433310	
		Microcystin LF	0.10	U	ug/L	P433310	
		Microcystin LR	0.25	U	ug/L	P433310	
		Microcystin LW	0.25	U	ug/L	P433310	
		Microcystin LY	0.10	U	ug/L	P433310	
		Microcystin RR	0.10	U	ug/L	P433310	
		Microcystin WR	0.50	U	ug/L	P433310	
		Neosaxitoxin	0.50	U	ug/L	P433311	
		Microcystin YR	0.25	U	ug/L	P433310	
		Saxitoxin	0.50	U	ug/L	P433311	
		Nodularin-R	0.10	U	ug/L	P433310	

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.

Sample Location: Lake Hancock - South Central

Collection Date/Time: 07/31/2023 11:30

Field ID: HAB-SW-0219

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2427673	DEP SOP: NU-094-1	Color (true)	73		PCU	P433286	
2427676	EPA 350.1 Rev. 2.0	Ammonia-N	0.016		mg N/L	P433463	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	4.2		mg N/L	P433319	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P433385	
	EPA 365.1 Rev. 2.0	Total-P	0.32		mg P/L	P433293	
2427679	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.007	I	mg P/L	P433291	
2427683	EPA 8321B	Anatoxin-a	0.25	U	ug/L	P433311	
		Cylindrospermopsin	0.10	U	ug/L	P433310	
		Desmethyl microcystin LR	0.25	U	ug/L	P433310	
		Microcystin HiLR	0.25	U	ug/L	P433310	
		Microcystin HtyR	0.25	U	ug/L	P433310	
		Microcystin LA	0.10	I	ug/L	P433310	
		Microcystin LF	0.10	U	ug/L	P433310	
		Microcystin LR	0.25	U	ug/L	P433310	
		Microcystin LW	0.25	U	ug/L	P433310	
		Microcystin LY	0.10	U	ug/L	P433310	
		Microcystin RR	0.10	U	ug/L	P433310	
		Microcystin WR	0.50	U	ug/L	P433310	
		Neosaxitoxin	0.50	U	ug/L	P433311	
		Microcystin YR	0.25	U	ug/L	P433310	
		Saxitoxin	0.50	U	ug/L	P433311	
		Nodularin-R	0.10	U	ug/L	P433310	

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: DEP SOP: NU-094-1
Batch ID: P433286

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P433463

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P433319

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P433385

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P433293

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P433291

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

Reference Method: EPA 8321B
Batch ID: P433310

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: P433311

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: P433286

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Color (true)	95.9		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P433463

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Ammonia-N	94.8		P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P433319

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Kjeldahl Nitrogen	94.8		P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P433385

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P433293

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P433291

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

Reference Method: EPA 8321B
Batch ID: P433310

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Cylindrospermopsin	109		P	40 - 160
Desmethyl microcystin LR	103		P	40 - 160
Microcystin H11R	111		P	40 - 160
Microcystin HtyR	102		P	40 - 160
Microcystin LA	111		P	40 - 160
Microcystin LF	86.5		P	40 - 160
Microcystin LR	108		P	40 - 160
Microcystin LW	101		P	40 - 160
Microcystin LY	115		P	40 - 160
Microcystin RR	106		P	40 - 160
Microcystin WR	115		P	40 - 160
Microcystin YR	99.5		P	40 - 160
Nodularin-R	99.2		P	40 - 160

Quality Assurance Report

Laboratory Control Sample Accuracy

Reference Method: EPA 8321B
Batch ID: P433311

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Anatoxin-a	104		P	40 - 150
Neosaxitoxin	96.2		P	40 - 150
Saxitoxin	92.1		P	40 - 150

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P433463

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2427564	Ammonia-N	98.0	101	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P433385

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2427674	NO2NO3-N	103	102	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P433293

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2427567	Total-P	108	107	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P433291

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2427710	O-Phosphate-P	96.8	98.3	P/P	90 - 110

Reference Method: EPA 8321B
Batch ID: P433310

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2427663	Cylindrospermopsin	102	109	P/P	40 - 160
2427663	Desmethyl microcystin LR	109	110	P/P	40 - 160
2427663	Microcystin HilR	114	117	P/P	40 - 160
2427663	Microcystin HtyR	109	109	P/P	40 - 160
2427663	Microcystin LA	109	113	P/P	40 - 160
2427663	Microcystin LF	105	109	P/P	40 - 160
2427663	Microcystin LR	115	113	P/P	40 - 160
2427663	Microcystin LW	110	110	P/P	40 - 160
2427663	Microcystin LY	111	116	P/P	40 - 160
2427663	Microcystin RR	110	113	P/P	40 - 160
2427663	Microcystin WR	116	119	P/P	40 - 160
2427663	Microcystin YR	103	102	P/P	40 - 160
2427663	Nodularin-R	112	118	P/P	40 - 160

Reference Method: EPA 8321B
Batch ID: P433311

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2427663	Anatoxin-a	95.1	93.9	P/P	40 - 150
2427663	Neosaxitoxin	61.5	59.4	P/P	40 - 150
2427663	Saxitoxin	61.2	60.4	P/P	40 - 150

Quality Assurance Report Precision

Reference Method: DEP SOP: NU-094-1
Batch ID: P433286

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2427707	Color (true)	1.07	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P433463

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2427564	Ammonia-N	2.63	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P433319

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2427675	Kjeldahl Nitrogen	14.2	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P433385

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2427674	NO2NO3-N	0.428	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P433293

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2427567	Total-P	0.567	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P433291

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2427710	O-Phosphate-P	1.54	Spike	P	0 - 20

Reference Method: EPA 8321B
Batch ID: P433310

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2427663	Cylindrospermopsin	7.21	Spike	P	0 - 30
2427663	Desmethyl microcystin LR	1.64	Spike	P	0 - 30
2427663	Microcystin HtIR	2.84	Spike	P	0 - 30
2427663	Microcystin HtyR	0.0255	Spike	P	0 - 30
2427663	Microcystin LA	3.24	Spike	P	0 - 30
2427663	Microcystin LF	3.07	Spike	P	0 - 30
2427663	Microcystin LR	1.54	Spike	P	0 - 30
2427663	Microcystin LW	0.0888	Spike	P	0 - 30
2427663	Microcystin LY	4.59	Spike	P	0 - 30

Quality Assurance Report Precision

Reference Method: EPA 8321B
Batch ID: P433310

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2427663	Microcystin RR	3.31	Spike	P	0 - 30
2427663	Microcystin WR	3.27	Spike	P	0 - 30
2427663	Microcystin YR	1.02	Spike	P	0 - 30
2427663	Nodularin-R	5.39	Spike	P	0 - 30

Reference Method: EPA 8321B
Batch ID: P433311

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2427663	Anatoxin-a	1.20	Spike	P	0 - 30
2427663	Neosaxitoxin	3.52	Spike	P	0 - 30
2427663	Saxitoxin	1.24	Spike	P	0 - 30

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

Quality Assurance Report Surrogates

Lab Sample ID: 2427681
Field Sample ID: HAB-SW-0220

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	Anatoxin-a 13C4	88.2	P	30 - 160
EPA 8321B	Microcystin LR ethyl-d5	137	P	30 - 160

Lab Sample ID: 2427682
Field Sample ID: HAB-SW-0221

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	Anatoxin-a 13C4	80.8	P	30 - 160
EPA 8321B	Microcystin LR ethyl-d5	118	P	30 - 160

Lab Sample ID: 2427683
Field Sample ID: HAB-SW-0219

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	Anatoxin-a 13C4	82.9	P	30 - 160
EPA 8321B	Microcystin LR ethyl-d5	121	P	30 - 160

Quality Assurance Report Calibration Verification

Reference Method: DEP SOP: NU-094-1

Run ID: A120768

Included Lab Sample IDs: 2427671, 2427672, 2427673

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	96.7	96.1	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Run ID: A120772

Included Lab Sample IDs: 2427677, 2427678, 2427679

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	100	100	P/P	90 - 110
O-Phosphate-P	100	99.7	P/P	90 - 110

Reference Method: EPA 8321B

Run ID: A120804

Included Lab Sample IDs: 2427681, 2427682, 2427683

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Cylindrospermopsin	105	97.9	P/P	60 - 160
Desmethyl microcystin LR	99.4	95.1	P/P	50 - 160
Microcystin HILR	105	99.3	P/P	60 - 160
Microcystin HtyR	96.0	91.9	P/P	60 - 160
Microcystin LA	108	102	P/P	50 - 160
Microcystin LF	91.9	84.3	P/P	60 - 160
Microcystin LR	107	91.5	P/P	60 - 160
Microcystin LW	101	91.0	P/P	60 - 160
Microcystin LY	113	105	P/P	60 - 160
Microcystin RR	105	97.8	P/P	60 - 160
Microcystin WR	103	102	P/P	60 - 160
Microcystin YR	94.6	81.4	P/P	60 - 160
Nodularin-R	101	96.0	P/P	60 - 160

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A120817

Included Lab Sample IDs: 2427674, 2427675, 2427676

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

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A120826

Included Lab Sample IDs: 2427674, 2427675, 2427676

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	101	103	P/P	90 - 110
Total-P	104	101	P/P	90 - 110

Reference Method: EPA 8321B

Run ID: A120830

Included Lab Sample IDs: 2427681, 2427682, 2427683

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Anatoxin-a	102	93.8	P/P	50 - 160
Neosaxitoxin	92.4	88.6	P/P	50 - 160

Quality Assurance Report Calibration Verification

Reference Method: EPA 8321B

Run ID: A120830

Included Lab Sample IDs: 2427681, 2427682, 2427683

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Saxitoxin	89.0	84.2	P/P	50 - 160

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A120832

Included Lab Sample IDs: 2427674, 2427675, 2427676

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	100	98.4	P/P	90 - 110
Kjeldahl Nitrogen	93.0	100	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A120846

Included Lab Sample IDs: 2427674, 2427675, 2427676

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	97.1	97.3	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)	95.9				1.07	
EPA 350.1 Rev. 2.0	Ammonia-N	94.8	98.0	101			2.63
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	94.8					14.2
EPA 353.2 Rev. 2.0	NO2NO3-N	104	103	102			0.428
EPA 365.1 Rev. 2.0	Total-P	108	108	107			0.567
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	101	96.8	98.3			1.54
EPA 8321B	Anatoxin-a	104	95.1	93.9			1.20
	Cylindrospermopsin	109	102	109			7.21
	Desmethyl microcystin LR	103	109	110			1.64
	Microcystin HiLR	111	114	117			2.84
	Microcystin HtyR	102	109	109			0.0255
	Microcystin LA	111	109	113			3.24
	Microcystin LF	86.5	105	109			3.07
	Microcystin LR	108	115	113			1.54
	Microcystin LW	101	110	110			0.0888
	Microcystin LY	115	111	116			4.59
	Microcystin RR	106	110	113			3.31
	Microcystin WR	115	116	119			3.27
	Microcystin YR	99.5	103	102			1.02
	Neosaxitoxin	96.2	61.5	59.4			3.52
	Nodularin-R	99.2	112	118			5.39
	Saxitoxin	92.1	61.2	60.4			1.24

Reference Method Descriptions

Method	Description	Associated Samples
DEP SOP: NU-094-1	True Color measured at 450 nm (not valid for NPDES monitoring)	2427671, 2427672, 2427673
EPA 350.1 Rev. 2.0	Ammonia in aqueous matrices as mg N/L	2427674, 2427675, 2427676
EPA 351.2 Rev. 2.0	Total Kjeldahl Nitrogen in aqueous matrices	2427674, 2427675, 2427676
EPA 353.2 Rev. 2.0	Nitrite/Nitrate in aqueous matrices as mg N/L	2427674, 2427675, 2427676
EPA 365.1 Rev. 2.0	Total Phosphorus in aqueous matrices as mg P/L	2427674, 2427675, 2427676
EPA 365.1 Rev. 2.0 dissolved	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	2427677, 2427678, 2427679
EPA 8321B	Microcystins in water matrices by HPLC/MS/MS	2427681, 2427682, 2427683
EPA 8321B	Saxitoxin in water matrices by HPLC/MS/MS	2427681, 2427682, 2427683

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	08/01/2023			08/01/2023 14:17	Samantha L Bates	2427671
	08/01/2023			08/01/2023 14:18	Samantha L Bates	2427672, 2427673
	08/01/2023			08/04/2023 13:21	Ping Hua	2427674
EPA 350.1 Rev. 2.0	08/01/2023			08/04/2023 13:22	Ping Hua	2427675
	08/01/2023			08/04/2023 13:24	Ping Hua	2427676
	08/01/2023	08/02/2023 10:37	Dana G. Hughes	08/03/2023 14:59	Samantha L Bates	2427674
EPA 351.2 Rev. 2.0	08/01/2023	08/02/2023 10:37	Dana G. Hughes	08/03/2023 15:01	Samantha L Bates	2427675
	08/01/2023	08/02/2023 10:37	Dana G. Hughes	08/03/2023 16:16	Samantha L Bates	2427676
	08/01/2023			08/03/2023 09:39	Beverly Y. Sanders	2427674
EPA 353.2 Rev. 2.0	08/01/2023			08/03/2023 09:45	Beverly Y. Sanders	2427675
	08/01/2023			08/03/2023 09:46	Beverly Y. Sanders	2427676
	08/01/2023	08/02/2023 14:24	Alexis Price	08/03/2023 09:49	James L Waggeberby	2427674
EPA 365.1 Rev. 2.0	08/01/2023	08/02/2023 14:24	Alexis Price	08/03/2023 09:51	James L Waggeberby	2427676
	08/01/2023	08/02/2023 14:24	Alexis Price	08/03/2023 11:29	James L Waggeberby	2427675
	08/01/2023			08/01/2023 16:35	Elise M. Gillis	2427679
EPA 365.1 Rev. 2.0 dissolved	08/01/2023			08/01/2023 16:39	Elise M. Gillis	2427677
	08/01/2023			08/01/2023 16:44	Elise M. Gillis	2427678
	08/01/2023	08/02/2023 12:00	Tae K Lee	08/02/2023 14:41	Hana Lee	2427681
EPA 8321B	08/01/2023	08/02/2023 12:00	Tae K Lee	08/02/2023 14:57	Hana Lee	2427682
	08/01/2023	08/02/2023 12:00	Tae K Lee	08/02/2023 15:14	Hana Lee	2427683
	08/01/2023	08/02/2023 12:00	Tae K Lee	08/03/2023 14:46	Hana Lee	2427681
	08/01/2023	08/02/2023 12:00	Tae K Lee	08/03/2023 15:00	Hana Lee	2427682
	08/01/2023	08/02/2023 12:00	Tae K Lee	08/03/2023 15:14	Hana Lee	2427683
	08/01/2023	08/02/2023 12:00	Tae K Lee			