Chemical Analysis Report

WQAP-2019-06-25-02

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

Event Description: **Algal Bloom Response - as needed**
Request ID: **RQ-2019-07-01-36**
Customer: **WQAP**
Project ID: **BLOOM-RESP**

Send Reports to:
FL Dept. of Environmental Protection
13051 N. Telecom Parkway
Temple Terrace, FL 33637
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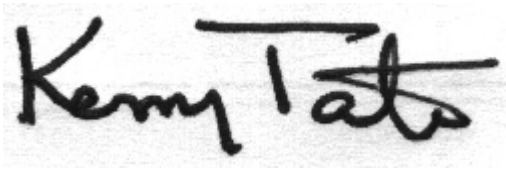
Date Certified: 03-JUL-2019 12:47



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: CYPRESS CREEK ESTATES-MANATEE RIVER **Collection Date/Time: 06/24/2019 11:15**

Field ID: CYPRESS CREEK ESTATES-MANATEE Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2097973	EPA 8321B	Anatoxin-a**	0.25	U	ug/L	P366211	
		Cylindrospermopsin**	0.25	U	ug/L	P366211	
		Microcystin LA**	0.25	U	ug/L	P366211	
		Microcystin LF**	0.25	U	ug/L	P366211	
		Microcystin LR**	0.25	U	ug/L	P366211	
		Microcystin LY**	0.25	U	ug/L	P366211	
		Microcystin RR**	0.25	U	ug/L	P366211	
		Microcystin YR**	0.25	U	ug/L	P366211	
		Saxitoxin**	0.25	UJ	ug/L	P366211	MS

Ref. Method and Comment:
EPA 8321B: Method validation for saxitoxin is still in progress. Second source was not analyzed.

Sample Location: I-75 BRIDGE-MANATEE RIVER **Collection Date/Time: 06/24/2019 11:50**

Field ID: I-75 BRIDGE-MANATEE RIVER Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2097974	EPA 8321B	Anatoxin-a**	0.25	U	ug/L	P366211	
		Cylindrospermopsin**	0.25	U	ug/L	P366211	
		Microcystin LA**	0.25	U	ug/L	P366211	
		Microcystin LF**	0.25	U	ug/L	P366211	
		Microcystin LR**	0.25	U	ug/L	P366211	
		Microcystin LY**	0.25	U	ug/L	P366211	
		Microcystin RR**	0.25	U	ug/L	P366211	
		Microcystin YR**	0.25	U	ug/L	P366211	
		Saxitoxin**	0.25	UJ	ug/L	P366211	MS

Ref. Method and Comment:
EPA 8321B: Method validation for saxitoxin is still in progress. Second source was not analyzed.

Sample Location: RIVERPOINT DR- MANATEE RIVER **Collection Date/Time: 06/24/2019 12:20**

Field ID: RIVERPOINT DR- MANATEE RIVER Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2097975	EPA 8321B	Anatoxin-a**	0.25	U	ug/L	P366211	
		Cylindrospermopsin**	0.25	U	ug/L	P366211	
		Microcystin LA**	0.25	U	ug/L	P366211	
		Microcystin LF**	0.25	U	ug/L	P366211	
		Microcystin LR**	0.25	U	ug/L	P366211	
		Microcystin LY**	0.25	U	ug/L	P366211	
		Microcystin RR**	0.25	U	ug/L	P366211	
		Microcystin YR**	0.25	U	ug/L	P366211	
		Saxitoxin**	0.25	UJ	ug/L	P366211	MS

Ref. Method and Comment:
EPA 8321B: Method validation for saxitoxin is still in progress. Second source was not analyzed.

Sample Location: RIVIERA DUNES MARINA- MANATEE RIVER **Collection Date/Time: 06/24/2019 12:45**

Field ID: RIVIERA DUNES MARINA- MANATEE Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2097976	EPA 8321B	Anatoxin-a**	0.25	U	ug/L	P366211	
		Cylindrospermopsin**	0.25	U	ug/L	P366211	
		Microcystin LA**	0.25	U	ug/L	P366211	
		Microcystin LF**	0.25	U	ug/L	P366211	
		Microcystin LR**	0.25	U	ug/L	P366211	
		Microcystin LY**	0.25	U	ug/L	P366211	
		Microcystin RR**	0.25	U	ug/L	P366211	
		Microcystin YR**	0.25	U	ug/L	P366211	
		Saxitoxin**	0.25	UJ	ug/L	P366211	MS

Ref. Method and Comment:
EPA 8321B: Method validation for saxitoxin is still in progress. Second source was not analyzed.

Sample Location: POINT PLEASANT AVE- MANATEE RIVER **Collection Date/Time: 06/24/2019 13:15**

Field ID: POINT PLEASANT AVE- MANATEE RI Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2097977	EPA 8321B	Anatoxin-a**	0.25	U	ug/L	P366211	
		Cylindrospermopsin**	0.25	U	ug/L	P366211	
		Microcystin LA**	0.25	U	ug/L	P366211	
		Microcystin LF**	0.25	U	ug/L	P366211	
		Microcystin LR**	0.25	U	ug/L	P366211	
		Microcystin LY**	0.25	U	ug/L	P366211	
		Microcystin RR**	0.25	U	ug/L	P366211	
		Microcystin YR**	0.25	U	ug/L	P366211	
		Saxitoxin**	0.25	UJ	ug/L	P366211	MS

Ref. Method and Comment:
EPA 8321B: Method validation for saxitoxin is still in progress. Second source was not analyzed.

Sample Location: POINSETTIA AVE- MANATEE RIVER **Collection Date/Time: 06/24/2019 14:00**

Field ID: POINSETTIA AVE- MANATEE RIVER Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2097978	EPA 8321B	Anatoxin-a**	0.25	U	ug/L	P366211	
		Cylindrospermopsin**	0.25	U	ug/L	P366211	
		Microcystin LA**	0.25	U	ug/L	P366211	
		Microcystin LF**	0.25	U	ug/L	P366211	
		Microcystin LR**	0.25	U	ug/L	P366211	
		Microcystin LY**	0.25	U	ug/L	P366211	
		Microcystin RR**	0.25	U	ug/L	P366211	
		Microcystin YR**	0.25	U	ug/L	P366211	
		Saxitoxin**	0.25	UJ	ug/L	P366211	MS

Ref. Method and Comment:
EPA 8321B: Method validation for saxitoxin is still in progress. Second source was not analyzed.

Sample Location: CYPRESS CREEK ESTATES-MANATEE RIVER **Collection Date/Time: 06/24/2019 11:15**

Field ID: CYPRESS CREEK ESTATES-MANATEE Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2097979	EPA 350.1 Rev. 2.0	Ammonia-N	0.006		mg N/L	P366279	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	3.4		mg N/L	P366343	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P366317	
	EPA 365.1 Rev. 2.0	Total-P	0.37		mg P/L	P366340	
2097985	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.083		mg P/L	P366293	

Sample Location: I-75 BRIDGE-MANATEE RIVER **Collection Date/Time: 06/24/2019 11:50**

Field ID: I-75 BRIDGE-MANATEE RIVER Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2097980	EPA 350.1 Rev. 2.0	Ammonia-N	0.007		mg N/L	P366279	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	3.2		mg N/L	P366343	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P366317	
	EPA 365.1 Rev. 2.0	Total-P	0.25		mg P/L	P366340	
2097986	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.039		mg P/L	P366293	

Sample Location: RIVERPOINT DR- MANATEE RIVER **Collection Date/Time: 06/24/2019 12:20**

Field ID: RIVERPOINT DR- MANATEE RIVER Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2097981	EPA 350.1 Rev. 2.0	Ammonia-N	0.005	I	mg N/L	P366279	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	2.0		mg N/L	P366343	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P366317	
	EPA 365.1 Rev. 2.0	Total-P	0.20		mg P/L	P366340	
2097987	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.058		mg P/L	P366293	

Sample Location: RIVIERA DUNES MARINA- MANATEE RIVER **Collection Date/Time: 06/24/2019 12:45**

Field ID: RIVIERA DUNES MARINA- MANATEE Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2097982	EPA 350.1 Rev. 2.0	Ammonia-N	0.006		mg N/L	P366279	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.9		mg N/L	P366343	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.005	I	mg N/L	P366317	
	EPA 365.1 Rev. 2.0	Total-P	0.14		mg P/L	P366340	
2097988	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.029		mg P/L	P366293	

Sample Location: POINT PLEASANT AVE- MANATEE RIVER **Collection Date/Time: 06/24/2019 13:15**

Field ID: POINT PLEASANT AVE- MANATEE RI Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2097983	EPA 350.1 Rev. 2.0	Ammonia-N	0.005		mg N/L	P366279	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.4		mg N/L	P366343	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P366317	
	EPA 365.1 Rev. 2.0	Total-P	0.18		mg P/L	P366340	
2097989	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.063		mg P/L	P366293	

Sample Location: POINSETTIA AVE- MANATEE RIVER **Collection Date/Time: 06/24/2019 14:00**

Field ID: POINSETTIA AVE- MANATEE RIVER Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2097984	EPA 350.1 Rev. 2.0	Ammonia-N	0.007		mg N/L	P366279	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	3.4		mg N/L	P366343	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P366317	
	EPA 365.1 Rev. 2.0	Total-P	0.25		mg P/L	P366340	
2097990	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.026		mg P/L	P366293	

Quality Assurance Report
Method Blank Results

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P366279

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P366343

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P366317

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P366340

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P366293

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

Reference Method: EPA 8321B
Batch ID: P366211

Component	Result	Code	Units
Anatoxin-a	0.25	U	ug/L
Cylindrospermopsin	0.25	U	ug/L
Microcystin LA	0.25	U	ug/L
Microcystin LF	0.25	U	ug/L
Microcystin LR	0.25	U	ug/L
Microcystin LY	0.25	U	ug/L
Microcystin RR	0.25	U	ug/L
Microcystin YR	0.25	U	ug/L
Saxitoxin	0.25	U	ug/L

Quality Assurance Report
Laboratory Control Sample Accuracy

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P366279

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P366343

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P366317

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: P366340

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P366293

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

Reference Method: EPA 8321B
Batch ID: P366211

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Anatoxin-a	98.8		P	40 - 140
Cylindrospermopsin	99.9		P	40 - 140
Microcystin LA	99.8		P	40 - 140
Microcystin LF	112		P	40 - 140
Microcystin LR	85.2		P	40 - 140
Microcystin LY	103		P	40 - 140
Microcystin RR	109		P	40 - 140
Microcystin YR	82.5		P	40 - 140
Saxitoxin	132		P	40 - 140

Quality Assurance Report
Matrix Spike Accuracy

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P366279

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2096474	Ammonia-N	102	104	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P366343

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2098019	Kjeldahl Nitrogen	101	99.5	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P366317

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2097358	NO2NO3-N	105	104	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P366340

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2098019	Total-P	97.4	99.8	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P366293

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2097988	O-Phosphate-P	95.5	96.8	P/P	90 - 110

Reference Method: EPA 8321B
Batch ID: P366211

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2097279	Anatoxin-a	87.9	96.1	P/P	40 - 140
2097279	Cylindrospermopsin	84.1	86.7	P/P	40 - 140
2097279	Microcystin LA	75.0	86.9	P/P	40 - 140
2097279	Microcystin LF	98.1	98.1	P/P	40 - 140
2097279	Microcystin LR	75.2	81.9	P/P	40 - 140
2097279	Microcystin LY	77.0	99.0	P/P	40 - 140
2097279	Microcystin RR	102	104	P/P	40 - 140
2097279	Microcystin YR	70.8	78.6	P/P	40 - 140
2097279	Saxitoxin	20.7	22.7	F/F	40 - 140

Quality Assurance Report
Precision

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P366279

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2096474	Ammonia-N	1.52	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P366343

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2098019	Kjeldahl Nitrogen	1.56	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P366317

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2097358	NO2NO3-N	1.44	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P366340

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2098019	Total-P	2.29	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P366293

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2097988	O-Phosphate-P	1.04	Spike	P	0 - 20

Reference Method: EPA 8321B
Batch ID: P366211

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2097279	Anatoxin-a	8.93	Spike	P	0 - 30
2097279	Cylindrospermopsin	2.98	Spike	P	0 - 30
2097279	Microcystin LA	14.7	Spike	P	0 - 30
2097279	Microcystin LF	0.0207	Spike	P	0 - 30
2097279	Microcystin LR	8.59	Spike	P	0 - 30
2097279	Microcystin LY	25.0	Spike	P	0 - 30
2097279	Microcystin RR	2.08	Spike	P	0 - 30
2097279	Microcystin YR	10.4	Spike	P	0 - 30
2097279	Saxitoxin	9.25	Spike	P	0 - 30

* Sample, spike and/or laboratory control sample precision (LCS) is reported.
Replicate spike precision may be reported when sample results are below quantifiable levels.

Quality Assurance Report
Surrogates

Lab Sample ID: 2097973
Field Sample ID: CYPRESS CREEK ESTATES-MANATEE

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	Carbamazepine-d10	87.3	P	30 - 165

Lab Sample ID: 2097974
Field Sample ID: I-75 BRIDGE-MANATEE RIVER

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	Carbamazepine-d10	79.7	P	30 - 165

Lab Sample ID: 2097975
Field Sample ID: RIVERPOINT DR- MANATEE RIVER

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	Carbamazepine-d10	50.5	P	30 - 165

Lab Sample ID: 2097976
Field Sample ID: RIVIERA DUNES MARINA- MANATEE

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	Carbamazepine-d10	87.3	P	30 - 165

Lab Sample ID: 2097977
Field Sample ID: POINT PLEASANT AVE- MANATEE RI

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	Carbamazepine-d10	85.0	P	30 - 165

Lab Sample ID: 2097978
Field Sample ID: POINSETTIA AVE- MANATEE RIVER

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	Carbamazepine-d10	84.3	P	30 - 165

Quality Assurance Report
Calibration Verification

Reference Method: EPA 350.1 Rev. 2.0
Run ID: A92337
Included Lab Sample IDs: 2097979, 2097980, 2097981, 2097982, 2097983, 2097984

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	103	104	P/P	90 - 110
Ammonia-N	104	102	P/P	90 - 110

Reference Method: EPA 8321B
Run ID: A92338
Included Lab Sample IDs: 2097973, 2097974, 2097975, 2097976, 2097977, 2097978

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Anatoxin-a	92.4	89.0	P/P	50 - 160
Anatoxin-a	98.9	92.4	P/P	50 - 160
Cylindrospermopsin	95.5	89.6	P/P	60 - 160
Cylindrospermopsin	98.3	95.5	P/P	60 - 160
Microcystin LA	78.5	74.7	P/P	50 - 160
Microcystin LA	85.8	78.5	P/P	50 - 160
Microcystin LF	75.8	82.8	P/P	60 - 160
Microcystin LF	94.9	75.8	P/P	60 - 160
Microcystin LR	64.1	68.6	P/P	60 - 160
Microcystin LR	76.0	64.1	P/P	60 - 160
Microcystin LY	101	87.4	P/P	60 - 160
Microcystin LY	87.4	80.8	P/P	60 - 160
Microcystin RR	101	97.9	P/P	60 - 160
Microcystin RR	97.9	96.1	P/P	60 - 160
Microcystin YR	70.0	67.8	P/P	60 - 160
Microcystin YR	73.9	70.0	P/P	60 - 160
Saxitoxin	112	116	P/P	60 - 160
Saxitoxin	116	109	P/P	60 - 160

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Run ID: A92347
Included Lab Sample IDs: 2097985, 2097986, 2097987, 2097988, 2097989, 2097990

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	98.1	98.9	P/P	90 - 110
O-Phosphate-P	98.5	99.0	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Run ID: A92358
Included Lab Sample IDs: 2097979, 2097980, 2097981, 2097982, 2097983, 2097984

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
NO2NO3-N	101	102	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Run ID: A92389
Included Lab Sample IDs: 2097979, 2097980, 2097981, 2097982, 2097983, 2097984

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	97.9	100	P/P	90 - 110

Quality Assurance Report
Calibration Verification

Reference Method: EPA 351.2 Rev. 2.0
Run ID: A92418
Included Lab Sample IDs: 2097979, 2097980, 2097981, 2097982, 2097983, 2097984

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	101	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	MS
EPA 350.1 Rev. 2.0	Ammonia-N	103	104	102			1.52
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	107	101	99.5			1.56
EPA 353.2 Rev. 2.0	NO2NO3-N	103	105	104			1.44
EPA 365.1 Rev. 2.0	Total-P	104	97.4	99.8			2.29
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	97.3	95.5	96.8			1.04
EPA 8321B	Anatoxin-a	98.8	87.9	96.1			8.93
	Cylindrospermopsin	99.9	84.1	86.7			2.98
	Microcystin LA	99.8	75.0	86.9			14.7
	Microcystin LF	112	98.1	98.1			0.0207
	Microcystin LR	85.2	75.2	81.9			8.59
	Microcystin LY	103	77.0	99.0			25.0
	Microcystin RR	109	102	104			2.08
	Microcystin YR	82.5	70.8	78.6			10.4
	Saxitoxin	132	20.7	22.7			9.25

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 350.1 Rev. 2.0 / E31780	Ammonia in aqueous matrices as mg N/L	2097979, 2097980, 2097981, 2097982, 2097983, 2097984
EPA 351.2 Rev. 2.0 / E31780	Total Kjeldahl Nitrogen in aqueous matrices	2097979, 2097980, 2097981, 2097982, 2097983, 2097984
EPA 353.2 Rev. 2.0 / E31780	Nitrite/Nitrate in aqueous matrices as mg N/L	2097979, 2097980, 2097981, 2097982, 2097983, 2097984
EPA 365.1 Rev. 2.0 / E31780	Total Phosphorus in aqueous matrices as mg P/L	2097979, 2097980, 2097981, 2097982, 2097983, 2097984
EPA 365.1 Rev. 2.0 dissolved / E31780	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	2097985, 2097986, 2097987, 2097988, 2097989, 2097990
EPA 8321B / E31780	Microcystins in water matrices by HPLC/MS/MS	2097973, 2097974, 2097975, 2097976, 2097977, 2097978

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	06/25/2019			06/25/2019 13:32	Ping Hua	2097979
	06/25/2019			06/25/2019 13:33	Ping Hua	2097980
	06/25/2019			06/25/2019 13:35	Ping Hua	2097981
	06/25/2019			06/25/2019 13:36	Ping Hua	2097982
	06/25/2019			06/25/2019 13:38	Ping Hua	2097983
	06/25/2019			06/25/2019 13:45	Ping Hua	2097984
EPA 351.2 Rev. 2.0	06/25/2019	06/26/2019 11:25	Sima Feizi	06/28/2019 09:16	Joseph Suarez	2097979
	06/25/2019	06/26/2019 11:25	Sima Feizi	06/28/2019 09:17	Joseph Suarez	2097980
	06/25/2019	06/26/2019 11:25	Sima Feizi	06/28/2019 09:19	Joseph Suarez	2097981
	06/25/2019	06/26/2019 11:25	Sima Feizi	06/28/2019 09:20	Joseph Suarez	2097982
	06/25/2019	06/26/2019 11:25	Sima Feizi	06/28/2019 09:22	Joseph Suarez	2097983
	06/25/2019	06/26/2019 11:25	Sima Feizi	06/28/2019 09:23	Joseph Suarez	2097984
EPA 353.2 Rev. 2.0	06/25/2019			06/26/2019 09:08	Beverly Y. Sanders	2097979
	06/25/2019			06/26/2019 09:09	Beverly Y. Sanders	2097980
	06/25/2019			06/26/2019 09:10	Beverly Y. Sanders	2097981
	06/25/2019			06/26/2019 09:11	Beverly Y. Sanders	2097982
	06/25/2019			06/26/2019 09:13	Beverly Y. Sanders	2097983
	06/25/2019			06/26/2019 09:14	Beverly Y. Sanders	2097984
EPA 365.1 Rev. 2.0	06/25/2019	06/26/2019 12:15	Sima Feizi	06/27/2019 12:21	Lipi Saha	2097979
	06/25/2019	06/26/2019 12:15	Sima Feizi	06/27/2019 12:22	Lipi Saha	2097980
	06/25/2019	06/26/2019 12:15	Sima Feizi	06/27/2019 12:23	Lipi Saha	2097981
	06/25/2019	06/26/2019 12:15	Sima Feizi	06/27/2019 12:24	Lipi Saha	2097982
	06/25/2019	06/26/2019 12:15	Sima Feizi	06/27/2019 12:25	Lipi Saha	2097983
	06/25/2019	06/26/2019 12:15	Sima Feizi	06/27/2019 12:26	Lipi Saha	2097984
EPA 365.1 Rev. 2.0 dissolved	06/25/2019			06/25/2019 15:05	Jhamieka S. Greenwood	2097988
	06/25/2019			06/25/2019 15:32	Jhamieka S. Greenwood	2097985
	06/25/2019			06/25/2019 15:33	Jhamieka S. Greenwood	2097986, 2097987
	06/25/2019			06/25/2019 15:34	Jhamieka S. Greenwood	2097989
	06/25/2019			06/25/2019 15:35	Jhamieka S. Greenwood	2097990
EPA 8321B	06/25/2019	06/25/2019 12:00	Juyoung Kim	06/25/2019 16:23	Juyoung Kim	2097973
	06/25/2019	06/25/2019 12:00	Juyoung Kim	06/25/2019 16:56	Juyoung Kim	2097974
	06/25/2019	06/25/2019 12:00	Juyoung Kim	06/25/2019 17:12	Juyoung Kim	2097975
	06/25/2019	06/25/2019 12:00	Juyoung Kim	06/25/2019 17:29	Juyoung Kim	2097976
	06/25/2019	06/25/2019 12:00	Juyoung Kim	06/25/2019 17:46	Juyoung Kim	2097977
	06/25/2019	06/25/2019 12:00	Juyoung Kim	06/25/2019 18:02	Juyoung Kim	2097978