

Chemical Analysis Report

SO-DIST-2015-06-04-01

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

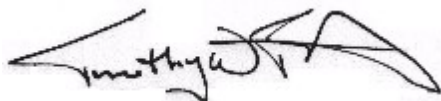
Event Description: **Algal Bloom Response - As needed**
Request ID: **RQ-2015-06-01-68**
Customer: **SO-DIST**
Project ID: **BLOOM-RESP**

Send Reports to:
FL Dept. of Environmental Protection
FLDEP South District Office
2295 Victoria Ave. Suite 364
Fort Myers, FL 33901-3381
Attn: Kirby Wolfe

For additional information please contact
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Certified by: Timothy Fitzpatrick, Program Administrator

Date Certified: 09-JUN-2015 11:29

A handwritten signature in black ink, appearing to read 'Timothy W. Fitzpatrick', with a stylized flourish at the end.

Abbreviations and data remark codes

CERT # - NELAP (National Environmental Laboratory Accreditation Program) Certification Number of the laboratory that performed the analysis.
LCS – Laboratory Control Sample; in the QC Failures column, this notation indicates a batch recovery failure.
MS – Matrix Spike; in the QC Failures column, this notation indicates a batch recovery failure.
RPD – Relative Percent Difference; in the QC Failures column, this notation indicates a batch failure for precision.
CCV – Continuing Calibration Verification; in the QC Failures column, this notation indicates a failure of the calibration verification check sample.
SUR – Surrogate; in the QC Failures column, this notation indicates a recovery failure for the associated surrogate.
RSD – Relative Standard Deviation expressed as a percentage.
SMP – Sample.
** - The laboratory is not NELAP certified for this analyte/method, or certification is not applicable.

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).

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.

Precision is reported as relative percent difference unless otherwise noted.

Uncertainty associated with the analytical results contained in this report can be estimated from the reported quality assurance results and from published test performance acceptance criteria.

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.

All sample collection performed by Bureau of Laboratories staff followed the field Standard Operating Procedures adopted by reference in Rule 62-160 FAC unless otherwise noted.

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.

Results for NELAP accredited tests contained in this report meet the requirements specified by the National Environmental Laboratory Accreditation Conference (NELAC). All samples received were in acceptable condition and met NELAC requirements unless otherwise noted. Results generated in this report pertain to the samples collected and submitted for analysis.

All times in this report are adjusted to the applicable Eastern Time Zone (EST or EDT).

Job: TLH-2015-06-04-14	Group: Pesticides
Job: TLH-2015-06-04-15	Group: Nutrients

Sample Location: Algal 1-Below Franklin Locks

Collection Date/Time: 06/03/2015 13:15

Field ID: Algal 1-Below Franklin Locks

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Failures
1708291	DEP SOP LC-038-1 (based on EPA 8321B)	Microcystin LR**	1.0	U	ug/L	P286093	
1708293	EPA 350.1 Rev. 2.0	Ammonia-N	0.016		mg N/L	P286091	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.4		mg N/L	P286139	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.12		mg N/L	P286135	
	EPA 365.1 Rev. 2.0	Total-P	0.15		mg P/L	P286148	
1708295	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.072		mg P/L	P286059	

Ref. Method and Comment:

EPA 365.1 Rev. 2.0: Total-P: Matrix spike recovery data is unavailable due to high analyte concentration in the QC sample.

Sample Location: Algal 2-Above Franklin Locks

Collection Date/Time: 06/03/2015 14:40

Field ID: Algal 2-Above Franklin Locks

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Failures
1708292	DEP SOP LC-038-1 (based on EPA 8321B)	Microcystin LR**	1.0	U	ug/L	P286093	
1708294	EPA 350.1 Rev. 2.0	Ammonia-N	0.017		mg N/L	P286091	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.3		mg N/L	P286139	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.18		mg N/L	P286135	
	EPA 365.1 Rev. 2.0	Total-P	0.12		mg P/L	P286148	
1708296	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.066		mg P/L	P286059	

Ref. Method and Comment:

EPA 365.1 Rev. 2.0: Total-P: Matrix spike recovery data is unavailable due to high analyte concentration in the QC sample.

Quality Assurance Report Method Blank Results

Reference Method: DEP SOP LC-038-1 (based on EPA 8321B)
Batch ID: P286093

Component	Result	Code	Units
Microcystin LR	1.0	U	ug/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P286091

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P286139

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P286135

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

Quality Assurance Report Method Blank Results

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P286148

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P286059

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

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: DEP SOP LC-038-1 (based on EPA 8321B)
Batch ID: P286093

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Microcystin LR	97.2	106	P/P	50 - 150

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P286091

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P286139

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Kjeldahl Nitrogen	99.4		P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P286135

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: P286148

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: P286059

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

Quality Assurance Report Matrix Spike Accuracy

Quality Assurance Report Matrix Spike Accuracy

Reference Method: DEP SOP LC-038-1 (based on EPA 8321B)
Batch ID: P286093

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1707414	Microcystin LR	98.2	110	P/P	50 - 150

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P286091

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1707549	Ammonia-N	100	102	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P286139

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1707241	Kjeldahl Nitrogen	93.1	96.8	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P286135

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1707981	NO2NO3-N	102	104	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P286059

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1708008	O-Phosphate-P	103	106	P/P	90 - 110

Quality Assurance Report Precision

Reference Method: DEP SOP LC-038-1 (based on EPA 8321B)
Batch ID: P286093

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1707414	Microcystin LR	10.1	Spike	P	0 - 30
LFB	Microcystin LR	8.66	LCS	P	0 - 30

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P286091

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1707549	Ammonia-N	1.47	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P286139

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1707241	Kjeldahl Nitrogen	1.93	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P286135

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1707981	NO2NO3-N	1.34	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P286148

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1707477	Total-P	1.54	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P286059

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1708008	O-Phosphate-P	2.07	Spike	P	0 - 20

* 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 Calibration Verification

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Run ID: A63008
Included Lab Sample IDs: 1708295, 1708296

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	98.1	97.7	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Run ID: A63013
Included Lab Sample IDs: 1708293, 1708294

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

Reference Method: EPA 353.2 Rev. 2.0
Run ID: A63025
Included Lab Sample IDs: 1708293, 1708294

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
NO2NO3-N	100	104	P/P	90 - 110

Reference Method: DEP SOP LC-038-1 (based on EPA 8321B)
Run ID: A63042
Included Lab Sample IDs: 1708291, 1708292

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Microcystin LR	98.6	82.1	P/P	60 - 160

Quality Assurance Report Calibration Verification

Reference Method: EPA 365.1 Rev. 2.0
Run ID: A63054
Included Lab Sample IDs: 1708293, 1708294

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	100	99.0	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Run ID: A63081
Included Lab Sample IDs: 1708293, 1708294

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	95.2	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	LCS	Precision SMP	MS
DEP SOP LC-038-1 (based on EPA 8321B)	Microcystin LR	97.2 106	98.2 110	8.66		10.1
EPA 350.1 Rev. 2.0	Ammonia-N	101	100 102			1.47
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	99.4	93.1 96.8			1.93
EPA 353.2 Rev. 2.0	NO2NO3-N	104	102 104			1.34
EPA 365.1 Rev. 2.0	Total-P	104				1.54
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	103	103 106			2.07

Reference Method Descriptions

Method / NELAC Cert. #	Description	Associated Samples
DEP SOP LC-038-1 (based on EPA 8321B) / E31780	Microcystins in water matrices by HPLC/MS/MS	1708291, 1708292
EPA 350.1 Rev. 2.0 / E31780	Ammonia in aqueous matrices as mg N/L	1708293, 1708294
EPA 351.2 Rev. 2.0 / E31780	Total Kjeldahl Nitrogen in aqueous matrices	1708293, 1708294
EPA 353.2 Rev. 2.0 / E31780	Nitrite/Nitrate in aqueous matrices as mg N/L	1708293, 1708294
EPA 365.1 Rev. 2.0 / E31780	Total Phosphorus in aqueous matrices as mg P/L	1708293, 1708294
EPA 365.1 Rev. 2.0 dissolved / E31780	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	1708295, 1708296

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
DEP SOP LC-038-1 (based on EPA 8321B)	06/04/2015	06/05/2015	Mohammad Ghaffari	06/05/2015	Mohammad Ghaffari	1708291, 1708292
EPA 350.1 Rev. 2.0	06/04/2015			06/04/2015	Diana M. Turner	1708293, 1708294
EPA 351.2 Rev. 2.0	06/04/2015	06/05/2015	Christopher Armour	06/08/2015	Bryan A. Werth	1708293, 1708294
EPA 353.2 Rev. 2.0	06/04/2015			06/04/2015	Peter D. Kaus	1708293, 1708294
EPA 365.1 Rev. 2.0	06/04/2015	06/05/2015	Christopher Armour	06/05/2015	Lipi Saha	1708293, 1708294
EPA 365.1 Rev. 2.0 dissolved	06/04/2015			06/04/2015 11:19	Bryan A. Werth	1708295
	06/04/2015			06/04/2015 11:20	Bryan A. Werth	1708296