

Biological Analysis Report

WAS-SECT-2017-11-29-01

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

Event Description: **NE Tallahassee Lakes**

Request ID: **RQ-2017-11-27-26**

Customer: **WAS-SECT**

Project ID: **SMP**

Send Reports to:
FL Dept. of Environmental Protection
2600 Blair Stone Rd
Tallahassee, FL 32399
Attn: Curtis Musson

For additional information please contact
Cheryl Swanson - Administrator
J. Marshall Faircloth - Aquatic Toxicology
Jacqueline Savage - Bench Biology
Jacqueline Savage - Microbiology
Puja Jasrotia, Ph.D. - Molecular Biology
Jennifer Walters - Taxonomy (Invertebrate & Algal)
Thekkekalathil Chandrasekhar, Ph.D, QA Officer
Phone (850) 245-8177

This Report replaces the previous Report Serial Number: 0101223

Report Comment: Removed I-qualifier on microbiology results reported at the MDL = PQL to assist with WIN database cleanup.

Revision certified by: Cheryl A. Swanson, Program Administrator

Date Certified: 05-NOV-2020 16:52



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: Chlorophyll/Grain Size/BOD and Microbiology.

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: LAKE MONKEY BUSINESS MIDDLE

Collection Date/Time: 11/29/2017 08:42

Field ID: G1WA0036

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1949365	SM 10200 H (mod.)	Chlorophyll-a, Corrected	19		ug/L	P336829	
		Phaeophytin-a	1.0	U	ug/L	P336829	
		Chlorophyll-a, Uncorrected	20		ug/L	P336829	

Sample Location: UPPER DIANNE LAKE MIDDLE

Collection Date/Time: 11/29/2017 09:45

Field ID: G1WA0041

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1949366	SM 10200 H (mod.)	Chlorophyll-a, Corrected	13		ug/L	P336829	
		Phaeophytin-a	1.5		ug/L	P336829	
		Chlorophyll-a, Uncorrected	14		ug/L	P336829	

Sample Location: LOWER DIANNE LAKE MIDDLE

Collection Date/Time: 11/29/2017 10:45

Field ID: G1WA0040

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1949367	SM 10200 H (mod.)	Chlorophyll-a, Corrected	1.8	U	ug/L	P336829	
		Phaeophytin-a	6.0		ug/L	P336829	
		Chlorophyll-a, Uncorrected	5.0		ug/L	P336829	

Sample Location: PETTY GULF LAKE MIDDLE

Collection Date/Time: 11/29/2017 11:40

Field ID: G1WA0022

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1949368	SM 10200 H (mod.)	Chlorophyll-a, Corrected	4.0		ug/L	P336829	
		Phaeophytin-a	1.2		ug/L	P336829	
		Chlorophyll-a, Uncorrected	4.9		ug/L	P336829	

Sample Location: PINE HILL LAKE MIDDLE

Collection Date/Time: 11/29/2017 12:20

Field ID: G1WA0054

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1949369	SM 10200 H (mod.)	Chlorophyll-a, Corrected	6.8		ug/L	P336829	
		Phaeophytin-a	1.3		ug/L	P336829	
		Chlorophyll-a, Uncorrected	7.8		ug/L	P336829	

Sample Location: LAKE TOM JOHN MIDDLE

Collection Date/Time: 11/29/2017 13:45

Field ID: G1WA0043

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1949370	SM 10200 H (mod.)	Chlorophyll-a, Corrected	1.9		ug/L	P336830	
		Phaeophytin-a	0.40	U	ug/L	P336830	
		Chlorophyll-a, Uncorrected	2.1		ug/L	P336830	

Sample Location: LAKE MONKEY BUSINESS MIDDLE

Collection Date/Time: 11/29/2017 08:42

Field ID: G1WA0036						Matrix: W-SURF-FRH		
Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes	
1949371	SM 9223 Quanti-Tray	Escherichia Coli-Quanti-Tray	14.4		MPN/100 mL	P336765		

Sample Location: UPPER DIANNE LAKE MIDDLE Collection Date/Time: 11/29/2017 09:45

Field ID: G1WA0041						Matrix: W-SURF-FRH		
Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes	
1949372	SM 9223 Quanti-Tray	Escherichia Coli-Quanti-Tray	1.0		MPN/100 mL	P336765		

Sample Location: LOWER DIANNE LAKE MIDDLE Collection Date/Time: 11/29/2017 10:45

Field ID: G1WA0040						Matrix: W-SURF-FRH		
Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes	
1949373	SM 9223 Quanti-Tray	Escherichia Coli-Quanti-Tray	11.0		MPN/100 mL	P336765		

Sample Location: PETTY GULF LAKE MIDDLE Collection Date/Time: 11/29/2017 11:40

Field ID: G1WA0022						Matrix: W-SURF-FRH		
Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes	
1949374	SM 9223 Quanti-Tray	Escherichia Coli-Quanti-Tray	1.0		MPN/100 mL	P336765		

Sample Location: PINE HILL LAKE MIDDLE Collection Date/Time: 11/29/2017 12:20

Field ID: G1WA0054						Matrix: W-SURF-FRH		
Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes	
1949375	SM 9223 Quanti-Tray	Escherichia Coli-Quanti-Tray	3.0		MPN/100 mL	P336765		

Sample Location: LAKE TOM JOHN MIDDLE Collection Date/Time: 11/29/2017 13:45

Field ID: G1WA0043						Matrix: W-SURF-FRH		
Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes	
1949376	SM 9223 Quanti-Tray	Escherichia Coli-Quanti-Tray	1.0		MPN/100 mL	P336765		

Quality Assurance Report
Method Blank Results

Reference Method: SM 10200 H (mod.)
Batch ID: P336829

Component	Result	Code	Units
Chlorophyll-a, Corrected	0.55	U	ug/L
Chlorophyll-a, Uncorrected	0.40	U	ug/L
Phaeophytin-a	0.40	U	ug/L

Reference Method: SM 10200 H (mod.)
Batch ID: P336830

Component	Result	Code	Units
Chlorophyll-a, Corrected	0.55	U	ug/L
Chlorophyll-a, Uncorrected	0.40	U	ug/L
Phaeophytin-a	0.40	U	ug/L

Quality Assurance Report Method Blank Results

Reference Method: SM 9223 Quanti-Tray
 Batch ID: P336765

Component	Result	Code	Units
Escherichia Coli-Quanti-Tray	1.0	U	MPN/100 mL

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: SM 10200 H (mod.)
 Batch ID: P336829

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Chlorophyll-a, Corrected	114		P	84 - 116

Reference Method: SM 10200 H (mod.)
 Batch ID: P336830

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Chlorophyll-a, Corrected	105		P	84 - 116

Quality Assurance Report Precision

Reference Method: SM 10200 H (mod.)
 Batch ID: P336829

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1949231	Chlorophyll-a, Corrected	7.10	Sample	P	0 - 25
1949231	Chlorophyll-a, Uncorrected	7.62	Sample	P	0 - 25
1949231	Phaeophytin-a	16.7	Sample	P	0 - 25

Reference Method: SM 10200 H (mod.)
 Batch ID: P336830

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1949389	Chlorophyll-a, Corrected	4.59	Sample	P	0 - 25
1949389	Chlorophyll-a, Uncorrected	1.17	Sample	P	0 - 25
1949389	Phaeophytin-a	19.3	Sample	P	0 - 25

Reference Method: SM 9223 Quanti-Tray
 Batch ID: P336765

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1949252	Escherichia Coli-Quanti-Tray	5.65	Sample	P	0 - 80

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

Quality Assurance Report Summary

Ref. Method	Analyte	LCS % Recovery	MS % Recovery	Precision		
				LCS	SMP	MS
SM 10200 H (mod.)	Chlorophyll-a, Corrected	114			7.10	
	Chlorophyll-a, Corrected	105			4.59	
	Chlorophyll-a, Uncorrected				7.62	
	Chlorophyll-a, Uncorrected				1.17	
	Phaeophytin-a				16.7	
	Phaeophytin-a				19.3	
SM 9223 Quanti-Tray	Escherichia Coli-Quanti-Tray				5.65	

Reference Method Descriptions

Method	Description	<u>Associated Samples</u>
SM 10200 H (mod.)	Phytoplankton chlorophyll-a corrected, uncorrected, and phaeophytin by spectrophotometry	1949365, 1949366, 1949367, 1949368, 1949369, 1949370
SM 9223 Quanti-Tray	Escherichia coli by Colilert 18 Quanti-Tray method - non-chlorinated water systems	1949371, 1949372, 1949373, 1949374, 1949375, 1949376

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
SM 10200 H (mod.)	11/29/2017	11/29/2017 15:37	Cathy Sherrer	12/12/2017 06:25	Kim M. Spencer	1949365, 1949366, 1949367, 1949368, 1949369
	11/29/2017	11/29/2017 15:37	Cathy Sherrer	12/12/2017 07:00	Kim M. Spencer	1949370
SM 9223 Quanti-Tray	11/29/2017	11/29/2017 15:40	Carina A. Tull	11/30/2017 11:25	Carina A. Tull	1949371, 1949372, 1949373, 1949374, 1949375, 1949376