

Biological Analysis Report

CEN-DIST-2017-11-16-01

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

Overflow Analyses Performed By:
Flowers Chemical Laboratories Inc. - Altamonte
Springs
481 Newburyport Avenue
Altamonte Springs, Florida 32701
DOH Accreditation E83018

Event Description: **Little Wekiva (west)+SCI**
Request ID: **RQ-2017-11-13-68**
Customer: **CEN-DIST**
Project ID: **SMP**

Send Reports to:
FL Dept. of Environmental Protection
FL Dept. of Environmental Protection
3319 Maguire Blvd., Suite 232
Orlando, FL 32803-3767
Attn: Mike Linger

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

Certified by: Jennifer Walters, Environmental Manager

Date Certified: 06-FEB-2018 13:41



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, InvertZool, Molecular and Overflow.

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 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: Little Wekiva (west) @ 50 m US of Northwestern Ave

Collection Date/Time: 11/15/2017 12:35

Field ID: G2CE0099

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1946997	SM 9223 Quanti-Tray	Escherichia Coli-Quanti-Tray	56.5		MPN/100 mL		
1946998	SM 10200 H (mod.)	Chlorophyll-a, Corrected	11		ug/L	P336301	
		Phaeophytin-a	9.5		ug/L	P336301	
		Chlorophyll-a, Uncorrected	17		ug/L	P336301	
1947000	SOP-PCR-1.0	HF183-qPCR**	23	T	GEU/100 mL	P335385	
	SOP-PCR-4.0	HF183 - Human Source Marker**	Below Threshold				

Sample Location: Little Wekiva (west) @ 50 m US of Northwestern Ave

Collection Date/Time: 11/15/2017 12:00

Field ID: G2CE0099

Matrix: BIOLOGICAL

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1946999	SOP-IZ06	Stream Condition Index (SCI)**	29	A	Points		
		Macroinvert-FW-Qual-DipnetX20-#Taxa-Rep2**	17		# Taxa		

Quality Assurance Report Method Blank Results

Reference Method: SM 10200 H (mod.)

Batch ID: P336301

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: SOP-PCR-1.0

Batch ID: P335385

Component	Result	Code	Units
HF183-qPCR	280	U	GEU/100 mL

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: SM 10200 H (mod.)

Batch ID: P336301

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Chlorophyll-a, Corrected	106		P	84 - 116

Reference Method: SOP-PCR-1.0

Batch ID: P335385

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
HF183-qPCR	89.0	92.6	P/P	50 - 175

Quality Assurance Report Matrix Spike Accuracy

Quality Assurance Report Matrix Spike Accuracy

Reference Method: SOP-PCR-1.0
 Batch ID: P335385

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1946706	HF183-qPCR	64.9	87.3	P	50 - 175
1946707	HF183-qPCR	76.3		P/P	50 - 175
1946906	HF183-qPCR	68.6		P	50 - 175
1946944	HF183-qPCR	79.8		P	50 - 175
1946945	HF183-qPCR	62.1		P	50 - 175
1946946	HF183-qPCR	82.0		P	50 - 175
1946947	HF183-qPCR	77.8		P	50 - 175
1946948	HF183-qPCR	63.8		P	50 - 175
1947000	HF183-qPCR	57.2		P	50 - 175
1947028	HF183-qPCR	72.0		P	50 - 175
1947029	HF183-qPCR	82.0		P	50 - 175
1947174	HF183-qPCR	85.2		P	50 - 175
1948227	HF183-qPCR	66.9		P	50 - 175

Quality Assurance Report Precision

Reference Method: SM 10200 H (mod.)
 Batch ID: P336301

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1947018	Chlorophyll-a, Corrected	4.65	Sample	P	0 - 25
1947018	Chlorophyll-a, Uncorrected	4.82	Sample	P	0 - 25
1947018	Phaeophytin-a	8.45	Sample	P	0 - 25

Reference Method: SOP-PCR-1.0
 Batch ID: P335385

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1946707	HF183-qPCR	13.4	Spike	P	0 - 25

* 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: 1947000
 Field Sample ID: G2CE0099

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
SOP-PCR-1.0	SKETA-qPCR	83.9	P	50 - 300

Quality Assurance Report Summary

Ref. Method	Analyte	LCS % Recovery	MS % Recovery	Precision	MS
				LCS SMP	

Quality Assurance Report Summary

Ref. Method	Analyte	LCS % Recovery		MS % Recovery			LCS	Precision	MS
								SMP	
SM 10200 H (mod.)	Chlorophyll-a, Corrected	106						4.65	
	Chlorophyll-a, Uncorrected							4.82	
	Phaeophytin-a							8.45	
SOP-PCR-1.0	HF183-qPCR	92.6	89.0	64.9	76.3	87.3			13.4
				79.8					

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
SM 10200 H (mod.) / E31780	Phytoplankton chlorophyll-a corrected, uncorrected, and phaeophytin by spectrophotometry	1946998
SM 9223 Quanti-Tray / E83018	Escherichia coli by Colilert 18 Quanti-Tray method by FlowersOverflow Laboratory for Central District	1946997
SOP-IZ06 / E31780	No. Taxa of FW macroinverts, qual samp, 20 dipnets.	1946999
SOP-PCR-1.0 / E31780	Detection and quantification of human-specific HF183 Bacteroides genetic marker with quantitative polymerase chain reaction	1947000
SOP-PCR-4.0 / E31780	Preparation of Samples by Filtration and held for qPCR Analysis	1947000

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
SM 10200 H (mod.)	11/16/2017	11/16/2017 13:23	Cathy Sherrer	12/04/2017	Kim M. Spencer	1946998
SM 9223 Quanti-Tray	11/15/2017	11/15/2017 15:00		11/16/2017 10:00	Flowers - Altamonte Springs	1946997
SOP-IZ06	11/16/2017	01/10/2018	Cathy Sherrer	01/25/2018	Michael Heyn	1946999
	11/16/2017	01/10/2018	Cathy Sherrer	01/31/2018	Michael Heyn	1946999
SOP-PCR-1.0	11/16/2017	11/16/2017 13:00	Sarah Menz	12/01/2017	Sarah Menz	1947000
SOP-PCR-4.0	11/16/2017	11/16/2017 13:00	Sarah Menz	12/12/2017	Puja Jasrotia	1947000