

Biological Analysis Report

SO-DIST-2017-10-19-01

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

Overflow Analyses Performed By:
Sanders Laboratories
10090 Bavaria Road
Ft. Myers, FL 33913
DOH Accreditation E85457

Event Description: **Sarasota Streams**
Request ID: **RQ-2017-09-18-28**
Customer: **SO-DIST**
Project ID: **SMP**

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

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: Cheryl A. Swanson, Program Administrator

Date Certified: 07-DEC-2017 16:22



NON-CONFORMANCE REPORT INCLUDED

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, 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: Indian Creek @ Fruitville Rd.

Collection Date/Time: 10/18/2017 10:55

Field ID: G2SD101817-2

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1938665	SM 10200 H (mod.)	Chlorophyll-a, Corrected	1.5	I	ug/L	P334211	
		Phaeophytin-a	0.98	I	ug/L	P334211	
		Chlorophyll-a, Uncorrected	2.1		ug/L	P334211	

Sample Location: Howard Creek N.E. Branch Lot 185

Collection Date/Time: 10/18/2017 11:45

Field ID: G2SD101817-3

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1938666	SM 10200 H (mod.)	Chlorophyll-a, Corrected	1.4	I	ug/L	P334396	
		Phaeophytin-a	1.1	I	ug/L	P334396	
		Chlorophyll-a, Uncorrected	2.2		ug/L	P334396	

Sample Location: North Creek by Oaks Creek Ct.

Collection Date/Time: 10/18/2017 12:40

Field ID: G2SD101817-4

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1938667	SM 10200 H (mod.)	Chlorophyll-a, Corrected	2.9		ug/L	P334396	
		Phaeophytin-a	2.0		ug/L	P334396	
		Chlorophyll-a, Uncorrected	4.2		ug/L	P334396	

Sample Location: North Creek by Oaks Creek Ct.

Collection Date/Time: 10/18/2017 12:40

Field ID: G2SD101817-4

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1938668	SOP-PCR-1.0	HF183-qPCR**	240	I	GEU/100 mL	P335726	LCS
	SOP-PCR-4.0	HF183 - Human Source Marker**	Above Threshold				
1938669	SM 9223 Quanti-Tray	Escherichia Coli-Quanti-Tray**	866.4		MPN/100 mL		

Sample Location: Walker Creek at 32nd Street

Collection Date/Time: 10/18/2017 10:04

Field ID: G2SD101817-1

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1938891	SM 10200 H (mod.)	Chlorophyll-a, Corrected	1.7	Q	ug/L	P334396	
		Phaeophytin-a	0.62	IQ	ug/L	P334396	
		Chlorophyll-a, Uncorrected	2.2	Q	ug/L	P334396	

Ref. Method and Comment:

SM 10200 H (mod.): See nonconformance report #6701.

Sample Location: Walker Creek at 32nd Street

Collection Date/Time: 10/18/2017 10:04

Field ID: G2SD101817-1

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1938892	SOP-PCR-1.0	HF183-qPCR**	8.8	TQ	GEU/100 mL	P335726	LCS
	SOP-PCR-4.0	HF183 - Human Source Marker**	Above Threshold	Q			
1938893	SM 9223 Quanti-Tray	Escherichia Coli-Quanti-Tray**	2419.6	J	MPN/100 mL		

Ref. Method and Comment:

SM 9223 Quanti-Tray: All Quanti-Tray wells were positive. Result may be higher than reported

Non-Conformance Report

NCR ID: 6701

<u>Event(s)</u>	<u>Job(s)</u>	<u>Sample(s)</u>	<u>Test(s)</u>
SO-DIST-2017-10-19-01	TLH-2017-10-20-07		
SO-DIST-2017-10-19-01	TLH-2017-10-20-08		
SO-DIST-2017-10-19-01	TLH-2017-10-20-09		

NCR Type: SHIPPING/RECEIVING

NCR Category: Samples arrived late

Observation: Samples arrived one day late,by common carrier.

Resolution: Customer contacted, email correspondence attached to sample submittal forms. Samples will be qualified as appropriate.

Authorized by/Date: Joshua Ayres 10/24/2017

The Non-Conformance Report details exceptions or problems encountered with the events/jobs/samples/test.
Please address questions to:

Chemistry Colin Wright (850) 245-8085
Biology Cheryl Swanson (850) 245-8177

Quality Assurance Report Method Blank Results

Reference Method: SM 10200 H (mod.)
Batch ID: P334211

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: P334396

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: P335726

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

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: SM 10200 H (mod.)
Batch ID: P334211

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Chlorophyll-a, Corrected	110		P	84 - 116

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: SM 10200 H (mod.)
Batch ID: P334396

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Chlorophyll-a, Corrected	102		P	84 - 116

Reference Method: SOP-PCR-1.0
Batch ID: P335726

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
HF183-qPCR	41.5	127	F/P	50 - 175
HF183-qPCR	124	124	P/P	50 - 175
HF183-qPCR	65.9	72.4	P/P	50 - 175

Quality Assurance Report Matrix Spike Accuracy

Reference Method: SOP-PCR-1.0
Batch ID: P335726

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1938668	HF183-qPCR	86.8		P	50 - 175
1938753	HF183-qPCR	94.9		P	50 - 175
1938892	HF183-qPCR	98.0		P	50 - 175
1940025	HF183-qPCR	54.0		P	50 - 175
1940311	HF183-qPCR	86.3		P	50 - 175
1940312	HF183-qPCR	83.3		P	50 - 175
1948201	HF183-qPCR	105	97.6	P/P	50 - 175
1948202	HF183-qPCR	100		P	50 - 175
1948230	HF183-qPCR	99.9		P	50 - 175

Quality Assurance Report Precision

Reference Method: SM 10200 H (mod.)
Batch ID: P334211

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1938538	Chlorophyll-a, Corrected	11.0	Sample	P	0 - 25
1938538	Chlorophyll-a, Uncorrected	10.8	Sample	P	0 - 25
1938538	Phaeophytin-a	9.36	Sample	P	0 - 25

Reference Method: SM 10200 H (mod.)
Batch ID: P334396

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1938905	Chlorophyll-a, Corrected	3.12	Sample	P	0 - 25
1938905	Chlorophyll-a, Uncorrected	3.26	Sample	P	0 - 25
1938905	Phaeophytin-a	3.48	Sample	P	0 - 25

Quality Assurance Report Precision

Reference Method: SOP-PCR-1.0
Batch ID: P335726

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1948201	HF183-qPCR	7.07	Spike	P	0 - 25
1948201	HF183-qPCR	7.07	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: 1938668
Field Sample ID: G2SD101817-4

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
SOP-PCR-1.0	SKETA-qPCR	55.1	P	50 - 300

Lab Sample ID: 1938892
Field Sample ID: G2SD101817-1

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
SOP-PCR-1.0	SKETA-qPCR	59.3	P	50 - 300

Quality Assurance Report Summary

Ref. Method	Analyte	LCS % Recovery			MS % Recovery			LCS	Precision SMP	MS
SM 10200 H (mod.)	Chlorophyll-a, Corrected	110							11.0	
	Chlorophyll-a, Corrected	102							3.12	
	Chlorophyll-a, Uncorrected								10.8	
	Chlorophyll-a, Uncorrected								3.26	
	Phaeophytin-a								9.36	
SOP-PCR-1.0	Phaeophytin-a								3.48	
	HF183-qPCR	41.5	127	72.4	54.0	94.9	105			7.07
		124			97.6					7.07

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
SM 10200 H (mod.) / E31780	Phytoplankton chlorophyll-a corrected, uncorrected, and phaeophytin by spectrophotometry	1938665, 1938666, 1938667, 1938891
SM 9223 Quanti-Tray / E85457	Escherichia coli by Colilert 18 Quanti-Tray method by Sanders Laboratories for South District	1938669, 1938893
SOP-PCR-1.0 / E31780	Detection and quantification of human-specific HF183 Bacteroides genetic marker with quantitative polymerase chain reaction	1938668, 1938892
SOP-PCR-4.0 / E31780	Preparation of Samples by Filtration and held for qPCR Analysis	1938668, 1938892

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
SM 10200 H (mod.)	10/19/2017	10/19/2017 14:25	Herbert Johnson	10/27/2017	Kim M. Spencer	1938665
	10/19/2017	10/19/2017 14:25	Herbert Johnson	10/31/2017	Kim M. Spencer	1938666, 1938667
	10/20/2017	10/20/2017 14:45	Carina A. Tull	10/31/2017	Kim M. Spencer	1938891
SM 9223 Quanti-Tray	10/18/2017	10/18/2017 15:00		10/19/2017 09:35	Sanders-Fort Myers	1938669, 1938893
SOP-PCR-1.0	10/19/2017	10/19/2017 13:45	Sarah Menz	11/28/2017	Sarah Menz	1938668
	10/20/2017	10/20/2017 12:30	Sarah Menz	11/28/2017	Sarah Menz	1938892
SOP-PCR-4.0	10/19/2017	10/19/2017 13:45	Sarah Menz	11/21/2017	Puja Jasrotia	1938668
	10/20/2017	10/20/2017 12:30	Sarah Menz	11/21/2017	Puja Jasrotia	1938892