

Biological Analysis Report

WQAP-2017-07-18-01

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

Overflow Analyses Performed By:
Advanced Environmental Laboratories - Tampa
9610 Princess Palm Avenue
Tampa, Florida 33619
DOH Accreditation E84589

Event Description: **RUN 15**
Request ID: **RQ-2017-07-17-26**
Customer: **WQAP**
Project ID: **SMP**

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Certified by: Cheryl A. Swanson, Environmental Manager

Date Certified: 01-SEP-2017 12:02



Report Comments:

Correction made to field ID for site Sims Branch from G2SW0056 to G1SW0056.

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: Wares Tidal

Collection Date/Time: 07/17/2017 11:25

Field ID: G2SW0029

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1913973	SM 10200 H (mod.)	Chlorophyll-a, Corrected	3.3	A	ug/L	P328933	
		Phaeophytin-a	0.40	U	ug/L	P328933	
		Chlorophyll/Phaeophytin Ratio	1.7	A		P328933	
		Chlorophyll-a, Uncorrected	3.5	A	ug/L	P328933	

Ref. Method and Comment:

SM 10200 H (mod.): Laboratory duplicate result is 0.40 U for Phaeophytin-a. Precision data is unavailable due to the small amount of analyte in the QC sample.

Sample Location: Wares Tidal

Collection Date/Time: 07/17/2017 11:25

Field ID: G2SW0029

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1913978	SM 9230 C	Enterococci-Membrane Filter	1600	B	cfu/100 mL		

Sample Location: Wares Tidal

Collection Date/Time: 07/17/2017 11:25

Field ID: G2SW0029

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1913977	SOP-PCR-1.0	HF183-qPCR**	49	T	GEU/100 mL	P328630	RPD
	SOP-PCR-4.0	HF183 - Human Source Marker**	Above Threshold				

Sample Location: Sims Branch

Collection Date/Time: 07/17/2017 12:30

Field ID: G1SW0056

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1913974	SM 10200 H (mod.)	Chlorophyll-a, Corrected	6.3		ug/L	P328933	
		Phaeophytin-a	0.58	I	ug/L	P328933	
		Chlorophyll/Phaeophytin Ratio	1.6			P328933	
		Chlorophyll-a, Uncorrected	6.8		ug/L	P328933	

Ref. Method and Comment:

SM 10200 H (mod.): Precision data is not available for at least one component due to the small amount of analyte in the QC sample. Refer to QA report for available precision data.

Sample Location: Sims Branch

Collection Date/Time: 07/17/2017 12:30

Field ID: G1SW0056

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1913976	SOP-PCR-1.0	HF183-qPCR**	50	T	GEU/100 mL	P330613	LCS
	SOP-PCR-4.0	HF183 - Human Source Marker**	Above Threshold				
1913979	SM 9230 C	Enterococci-Membrane Filter	140	B	cfu/100 mL		

Quality Assurance Report Method Blank Results

Reference Method: SM 10200 H (mod.)
 Batch ID: P328933

Component	Result	Code	Units
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Quality Assurance Report Method Blank Results

Reference Method: SM 10200 H (mod.)
 Batch ID: P328933

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: P328630

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

Reference Method: SOP-PCR-1.0
 Batch ID: P330613

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: P328933

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Chlorophyll-a, Corrected	107		P	84 - 116

Reference Method: SOP-PCR-1.0
 Batch ID: P328630

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
HF183-qPCR	153	98.2	P/P	50 - 175
HF183-qPCR	146	88.7	P/P	50 - 175

Reference Method: SOP-PCR-1.0
 Batch ID: P330613

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
HF183-qPCR	117	3.57	P/F	50 - 175

Quality Assurance Report Matrix Spike Accuracy

Reference Method: SOP-PCR-1.0
 Batch ID: P328630

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1913828	HF183-qPCR	68.2	78.8	P/P	50 - 175
1913829	HF183-qPCR	86.2		P	50 - 175
1913830	HF183-qPCR	84.6		P	50 - 175
1913977	HF183-qPCR	64.4		P	50 - 175
1914092	HF183-qPCR	66.8		P	50 - 175

Quality Assurance Report Matrix Spike Accuracy

Reference Method: SOP-PCR-1.0
 Batch ID: P328630

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1914093	HF183-qPCR	54.7		P	50 - 175
1914094	HF183-qPCR	51.3		P	50 - 175
1914834	HF183-qPCR	68.9		P	50 - 175
1915007	HF183-qPCR	69.6		P	50 - 175
1915110	HF183-qPCR	62.9		P	50 - 175

Reference Method: SOP-PCR-1.0
 Batch ID: P330613

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1913976	HF183-qPCR	102		P	50 - 175
1915406	HF183-qPCR	93.5		P	50 - 175
1915693	HF183-qPCR	95.2		P	50 - 175
1922795	HF183-qPCR	75.9		P	50 - 175
1922796	HF183-qPCR	92.0		P	50 - 175
1922809	HF183-qPCR	58.9		P	50 - 175
1923589	HF183-qPCR	108		P	50 - 175
1923590	HF183-qPCR	74.6		P	50 - 175
1923820	HF183-qPCR	83.5		P	50 - 175
1923821	HF183-qPCR	90.4		P	50 - 175
1923822	HF183-qPCR	73.8	68.0	P/P	50 - 175
1924464	HF183-qPCR	115		P	50 - 175

Quality Assurance Report Precision

Reference Method: SM 10200 H (mod.)
 Batch ID: P328933

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1913973	Chlorophyll/Phaeophytin Ratio	0.0	Sample	P	0 - 25
1913973	Chlorophyll-a, Corrected	10.3	Sample	P	0 - 25
1913973	Chlorophyll-a, Uncorrected	8.20	Sample	P	0 - 25

Reference Method: SOP-PCR-1.0
 Batch ID: P328630

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1913828	HF183-qPCR	14.3	Spike	P	0 - 25
1915209	HF183-qPCR	10000	Spike	F	0 - 25

Reference Method: SOP-PCR-1.0
 Batch ID: P330613

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1923822	HF183-qPCR	8.22	Spike	P	0 - 25

Quality Assurance Report Precision

* 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: 1913976
Field Sample ID: G1SW0056

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
SOP-PCR-1.0	SKETA-qPCR	98.3	P	50 - 300

Lab Sample ID: 1913977
Field Sample ID: G2SW0029

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
SOP-PCR-1.0	SKETA-qPCR	104	P	50 - 300

Quality Assurance Report Summary

Ref. Method	Analyte	LCS % Recovery	MS % Recovery	LCS	Precision SMP	MS
SM 10200 H (mod.)	Chlorophyll/Phaeophytin Ratio				0.0	
	Chlorophyll-a, Corrected	107			10.3	
	Chlorophyll-a, Uncorrected				8.20	
SOP-PCR-1.0	HF183-qPCR	153 88.7 146	68.2 78.8 86.2			14.3
		98.2	84.6			10000
	HF183-qPCR	3.57 117	75.9 92.0 58.9			8.22
			108			

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
SM 10200 H (mod.) / E31780	Phytoplankton chlorophyll-a corrected, uncorrected, and phaeophytin by spectrophotometry	1913973, 1913974
SM 9230 C / E84589	Enterococci by membrane filter method by Advanced Environmental Overflow Laboratories for SWD	1913978, 1913979
SOP-PCR-1.0 / E31780	Detection and quantification of human-specific HF183 Bacteroides genetic marker with quantitative polymerase chain reaction	1913976, 1913977
SOP-PCR-4.0 / E31780	Preparation of Samples by Filtration and held for qPCR Analysis	1913976, 1913977

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
SM 10200 H (mod.)	07/18/2017	07/18/2017 12:50	Morgan Lane	07/20/2017	Jennifer Mihalic	1913973, 1913974
SM 9230 C	07/17/2017			07/17/2017	AEL - Tampa	1913978, 1913979
SOP-PCR-1.0	07/18/2017	07/18/2017 14:00	Avril Wood	07/27/2017	Puja Jasrotia	1913977
	07/18/2017	07/18/2017 14:00	Puja Jasrotia	08/28/2017	Puja Jasrotia	1913976
SOP-PCR-4.0	07/18/2017	07/18/2017 14:00	Avril Wood	08/25/2017	Puja Jasrotia	1913976
	07/18/2017	07/18/2017 14:00	Sarah Menz	08/25/2017	Puja Jasrotia	1913977