

Biological Analysis Report

SO-DIST-2018-01-31-01

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: **SFM**
Request ID: **RQ-2018-01-29-51**
Customer: **SO-DIST**
Project ID: **SMP**

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FLDEP South District Office
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Certified by: Puja Jasrotia, Environmental Manager

Date Certified: 18-OCT-2018 16:31



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: Imperial River Near US41

Collection Date/Time: 01/30/2018 11:20

Field ID: G1SD0057

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1963104	SM 10200 H (mod.)	Chlorophyll-a, Corrected	39		ug/L	P339482	
		Phaeophytin-a	9.7		ug/L	P339482	
		Chlorophyll-a, Uncorrected	46		ug/L	P339482	

Sample Location: Oak Creek @ Oak Crk Preserve

Collection Date/Time: 01/30/2018 12:10

Field ID: G1SD0050

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1963102	SM 10200 H (mod.)	Chlorophyll-a, Corrected	1.8		ug/L	P339482	
		Phaeophytin-a	0.40	U	ug/L	P339482	
		Chlorophyll-a, Uncorrected	2.1		ug/L	P339482	
1964293	SM 9223 Quanti-Tray	Escherichia Coli-Quanti-Tray**	980		MPN/100 mL		

Sample Location: Hendry Crk @ Old Gladiolus

Collection Date/Time: 01/30/2018 10:15

Field ID: G1SD0062

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1963105	SM 10200 H (mod.)	Chlorophyll-a, Corrected	32		ug/L	P339482	
		Phaeophytin-a	4.5		ug/L	P339482	
		Chlorophyll-a, Uncorrected	36		ug/L	P339482	

Sample Location: Winkler Canal @ Princeton

Collection Date/Time: 01/30/2018 09:30

Field ID: G3SD0055

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1963103	SM 10200 H (mod.)	Chlorophyll-a, Corrected	1.7		ug/L	P339482	
		Phaeophytin-a	1.3		ug/L	P339482	
		Chlorophyll-a, Uncorrected	2.6		ug/L	P339482	

Sample Location: Winkler Canal @ Princeton

Collection Date/Time: 01/30/2018 09:30

Field ID: G3SD0055

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1963115	SOP-PCR-1.0	HF183-qPCR**	97	T	GEU/100 mL	P340022	
	SOP-PCR-4.0	HF183 - Human Source Marker**	Above Threshold				

Sample Location: Manuel Branch @ Broadway

Collection Date/Time: 01/30/2018 09:00

Field ID: G3SD0078

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1963116	SOP-PCR-1.0	HF183-qPCR**	330	I	GEU/100 mL	P340022	
	SOP-PCR-4.0	HF183 - Human Source Marker**	Above Threshold				
1964292	SM 9223 Quanti-Tray	Escherichia Coli-Quanti-Tray**	816		MPN/100 mL		

Sample Location: Winkler Canal @ Princeton St

Collection Date/Time: 01/30/2018 09:30

Field ID: G3SD0055

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1964294	SM 9223 Quanti-Tray	Escherichia Coli-Quanti-Tray**	921		MPN/100 mL		

Quality Assurance Report
Method Blank Results

Reference Method: SM 10200 H (mod.)
Batch ID: P339482

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: P340022

Component	Result	Code	Units
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: P339482

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Chlorophyll-a, Corrected	111		P	84 - 116

Reference Method: SOP-PCR-1.0
Batch ID: P340022

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
HF183-qPCR	117	124	P/P	50 - 175
HF183-qPCR	110	111	P/P	50 - 175

Quality Assurance Report
Matrix Spike Accuracy

Reference Method: SOP-PCR-1.0
Batch ID: P340022

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1959971	HF183-qPCR	111		P	50 - 175
1961507	HF183-qPCR	103		P	50 - 175
1961508	HF183-qPCR	109		P	50 - 175
1961601	HF183-qPCR	121		P	50 - 175
1961840	HF183-qPCR	104		P	50 - 175
1961841	HF183-qPCR	99.5		P	50 - 175
1962102	HF183-qPCR	72.9		P	50 - 175
1962103	HF183-qPCR	92.8		P	50 - 175
1962106	HF183-qPCR	87.9		P	50 - 175
1963115	HF183-qPCR	94.8		P	50 - 175
1963116	HF183-qPCR	101		P	50 - 175

Quality Assurance Report Matrix Spike Accuracy

Reference Method: SOP-PCR-1.0
 Batch ID: P340022

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1968122	HF183-qPCR	98.0		P	50 - 175
1968560	HF183-qPCR	98.7	118	P/P	50 - 175

Quality Assurance Report Precision

Reference Method: SM 10200 H (mod.)
 Batch ID: P339482

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1963111	Chlorophyll-a, Corrected	9.79	Sample	P	0 - 25
1963111	Chlorophyll-a, Uncorrected	9.26	Sample	P	0 - 25
1963111	Phaeophytin-a	7.26	Sample	P	0 - 25

Reference Method: SOP-PCR-1.0
 Batch ID: P340022

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1968560	HF183-qPCR	17.8	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: 1963115
 Field Sample ID: G3SD0055

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
SOP-PCR-1.0	SKETA-qPCR	113	P	50 - 300

Lab Sample ID: 1963116
 Field Sample ID: G3SD0078

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
SOP-PCR-1.0	SKETA-qPCR	100	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	111							9.79	
	Chlorophyll-a, Uncorrected								9.26	
	Phaeophytin-a								7.26	
SOP-PCR-1.0	HF183-qPCR	117	111	110	98.0	111	103			17.8
		124			109					

Reference Method Descriptions

Method / DoH Cert #	Description	<u>Associated Samples</u>
SM 10200 H (mod.) / E31780	Phytoplankton chlorophyll-a corrected, uncorrected, and phaeophytin by spectrophotometry	1963102, 1963103, 1963104, 1963105
SM 9223 Quanti-Tray / E85457	Escherichia coli by Colilert 18 Quanti-Tray method by Sanders Laboratories for South District	1964292, 1964293, 1964294
SOP-PCR-1.0 / E31780	Detection and quantification of human-specific HF183 Bacteroides genetic marker with quantitative polymerase chain reaction	1963115, 1963116
SOP-PCR-4.0 / E31780	Preparation of Samples by Filtration and held for qPCR Analysis	1963115, 1963116

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
SM 10200 H (mod.)	01/31/2018	01/31/2018 12:27	Cathy Sherrer	02/06/2018 10:35	Kim M. Spencer	1963102, 1963103, 1963104, 1963105
SM 9223 Quanti-Tray	01/30/2018	01/30/2018 15:02		01/31/2018 09:38	Sanders-Fort Myers	1964292, 1964293, 1964294
SOP-PCR-1.0	01/31/2018	01/31/2018 14:15	Angela Smith	02/21/2018 12:21	Sarah Menz	1963115, 1963116
SOP-PCR-4.0	01/31/2018	01/31/2018 14:15	Avril Wood	02/20/2018 10:59	Puja Jasrotia	1963115, 1963116