

Biological Analysis Report

SE-DIST-2019-12-13-01

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

Overflow Analyses Performed By:
Florida Spectrum Environmental Services, Inc.
1460 West McNab Rd
Ft. Lauderdale, FL 33309
DOH Accreditation E86006

Event Description: **SMP-Greasy**
Request ID: **RQ-2019-12-09-59**
Customer: **SE-DIST**
Project ID: **SMP**

Send Reports to:
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Certified by: Puja Jasrotia, Environmental Manager

Date Certified: 06-JAN-2020 12:00



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 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: New River @ NW 27th

Collection Date/Time: 12/12/2019 11:45

Field ID: G4SE0085

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2143845	SM 10200 H (mod.)	Chlorophyll-a, Corrected	8.3		ug/L	P376265	
		Phaeophytin-a	5.3		ug/L	P376265	
		Chlorophyll-a, Uncorrected	12		ug/L	P376265	
2143849	SOP-PCR-1.0	HF183-qPCR**	86	I	GEU/100 mL	P375820	
	SOP-PCR-1.4	BacR-qPCR**	760	U	TSC/100 mL	P375820	
	SOP-PCR-1.5	DG3-qPCR**	1.3E+03	U	TSC/100 mL	P375820	LCS
2143852	EPA 1600 (MF)	Enterococci-Membrane Filter	6000	Z	cfu/100 mL		

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.

EPA 1600 (MF): All Quanti-Tray wells were positive. Result may be higher than reported.

Sample Location: North Fork New River @ Sistrunk

Collection Date/Time: 12/12/2019 12:50

Field ID: G4SEB064

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2143846	SM 10200 H (mod.)	Chlorophyll-a, Corrected	8.1		ug/L	P376266	
		Phaeophytin-a	3.3		ug/L	P376266	
		Chlorophyll-a, Uncorrected	10		ug/L	P376266	
2143850	SOP-PCR-1.0	HF183-qPCR**	71	U	GEU/100 mL	P375820	
	SOP-PCR-1.2	GULL2-qPCR**	4.2E+03	U	TSC/100 mL	P375820	
	SOP-PCR-1.3	GFD-purified-qPCR**	340	I	TSC/100 mL	P376042	LCS, MS
	SOP-PCR-1.4	BacR-qPCR**	760	U	TSC/100 mL	P375820	
	SOP-PCR-1.5	DG3-qPCR**	1.3E+03	U	TSC/100 mL	P375820	LCS
2143853	EPA 1600 (MF)	Enterococci-Membrane Filter	16700	B	cfu/100 mL		

Sample Location: Middle River @ US 1

Collection Date/Time: 12/12/2019 13:45

Field ID: G4SE0113

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2143854	EPA 1600 (MF)	Enterococci-Membrane Filter	1350	B	cfu/100 mL		

Sample Location: North Fork Middle River @ NE 16th Ave.

Collection Date/Time: 12/12/2019 14:00

Field ID: G4SE0121

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2143855	EPA 1600 (MF)	Enterococci-Membrane Filter	3400		cfu/100 mL		

Sample Location: Cypress @ 441 Margate

Collection Date/Time: 12/12/2019 14:30

Field ID: G4SE0038

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2143844	SM 10200 H (mod.)	Chlorophyll-a, Corrected	3.5		ug/L	P376265	
		Phaeophytin-a	2.5	I	ug/L	P376265	
		Chlorophyll-a, Uncorrected	5.2		ug/L	P376265	
2143851	EPA 1603	Escherichia coli-Membrane Filter	1400	B	cfu/100 mL		

Field ID: G4SE0038

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
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.							

Quality Assurance Report
Method Blank Results

Reference Method: SM 10200 H (mod.)
Batch ID: P376265

Component	Result	Code	Units
Chlorophyll-a, Corrected	0.82	U	ug/L
Chlorophyll-a, Uncorrected	0.60	U	ug/L
Phaeophytin-a	0.90	U	ug/L

Reference Method: SM 10200 H (mod.)
Batch ID: P376266

Component	Result	Code	Units
Chlorophyll-a, Corrected	0.82	U	ug/L
Chlorophyll-a, Uncorrected	0.60	U	ug/L
Phaeophytin-a	0.90	U	ug/L

Reference Method: SOP-PCR-1.0
Batch ID: P375820

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

Reference Method: SOP-PCR-1.2
Batch ID: P375820

Component	Result	Code	Units
GULL2-qPCR	1.7E+04	U	TSC/100 mL

Reference Method: SOP-PCR-1.3
Batch ID: P376042

Component	Result	Code	Units
GFD-purified-qPCR	340	U	TSC/100 mL

Reference Method: SOP-PCR-1.4
Batch ID: P375820

Component	Result	Code	Units
BacR-qPCR	3.0E+03	U	TSC/100 mL

Reference Method: SOP-PCR-1.5
Batch ID: P375820

Component	Result	Code	Units
DG3-qPCR	2.6E+03	U	TSC/100 mL

Quality Assurance Report
Laboratory Control Sample Accuracy

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: SM 10200 H (mod.)
Batch ID: P376265

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Chlorophyll-a, Corrected	93.0		P	84 - 116

Reference Method: SM 10200 H (mod.)
Batch ID: P376266

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Chlorophyll-a, Corrected	92.3		P	84 - 116

Reference Method: SOP-PCR-1.0
Batch ID: P375820

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
HF183-qPCR	129	73.8	P/P	50 - 175

Reference Method: SOP-PCR-1.2
Batch ID: P375820

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
GULL2-qPCR	79.3	73.9	P/P	50 - 300

Reference Method: SOP-PCR-1.3
Batch ID: P376042

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
GFD-purified-qPCR	131	38.5	P/F	50 - 175

Reference Method: SOP-PCR-1.4
Batch ID: P375820

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
BacR-qPCR	110	81.4	P/P	50 - 175

Reference Method: SOP-PCR-1.5
Batch ID: P375820

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
DG3-qPCR	106	213	P/F	50 - 175

Quality Assurance Report Matrix Spike Accuracy

Reference Method: SOP-PCR-1.0
Batch ID: P375820

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2143849	HF183-qPCR	111		P	50 - 175
2143850	HF183-qPCR	103		P	50 - 175
2144030	HF183-qPCR	99.9		P	50 - 175
2144160	HF183-qPCR	88.3		P	50 - 175
2144161	HF183-qPCR	114		P	50 - 175
2144203	HF183-qPCR	126		P	50 - 175

Quality Assurance Report Matrix Spike Accuracy

Reference Method: SOP-PCR-1.0

Batch ID: P375820

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2144204	HF183-qPCR	117		P	50 - 175
2144205	HF183-qPCR	114		P	50 - 175
2144206	HF183-qPCR	114		P	50 - 175
2144308	HF183-qPCR	113		P	50 - 175
2144309	HF183-qPCR	108		P	50 - 175
2144310	HF183-qPCR	133		P	50 - 175
2144311	HF183-qPCR	133	124	P/P	50 - 175

Reference Method: SOP-PCR-1.2

Batch ID: P375820

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2143850	GULL2-qPCR	59.6		P	50 - 300
2144308	GULL2-qPCR	71.4		P	50 - 300
2144309	GULL2-qPCR	69.6		P	50 - 300
2144310	GULL2-qPCR	65.6		P	50 - 300
2144311	GULL2-qPCR	72.4	66.1	P/P	50 - 300

Reference Method: SOP-PCR-1.3

Batch ID: P376042

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2140112	GFD-purified-qPCR	234		F	50 - 175
2143850	GFD-purified-qPCR	146		P	50 - 175
2144382	GFD-purified-qPCR	170		P	50 - 175
2144383	GFD-purified-qPCR	160		P	50 - 175
2144384	GFD-purified-qPCR	170	173	P/P	50 - 175
2145194	GFD-purified-qPCR	224		F	50 - 175
2145195	GFD-purified-qPCR	164		P	50 - 175
2145274	GFD-purified-qPCR	205		F	50 - 175
2146108	GFD-purified-qPCR	199		F	50 - 175
2146109	GFD-purified-qPCR	184		F	50 - 175
2146110	GFD-purified-qPCR	190		F	50 - 175
2146111	GFD-purified-qPCR	184		F	50 - 175

Reference Method: SOP-PCR-1.4

Batch ID: P375820

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2143849	BacR-qPCR	81.1		P	50 - 175
2143850	BacR-qPCR	95.2		P	50 - 175
2144030	BacR-qPCR	69.9		P	50 - 175
2144308	BacR-qPCR	95.1		P	50 - 175
2144309	BacR-qPCR	81.7		P	50 - 175
2144310	BacR-qPCR	103		P	50 - 175
2144311	BacR-qPCR	94.7	95.7	P/P	50 - 175

Reference Method: SOP-PCR-1.5

Batch ID: P375820

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2143849	DG3-qPCR	117		P	50 - 175

Quality Assurance Report Matrix Spike Accuracy

Reference Method: SOP-PCR-1.5
 Batch ID: P375820

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2143850	DG3-qPCR	87.5		P	50 - 175
2144308	DG3-qPCR	81.0		P	50 - 175
2144309	DG3-qPCR	78.6		P	50 - 175
2144310	DG3-qPCR	81.5		P	50 - 175
2144311	DG3-qPCR	86.4	87.1	P/P	50 - 175

Quality Assurance Report Precision

Reference Method: SM 10200 H (mod.)
 Batch ID: P376266

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2144019	Chlorophyll-a, Corrected	2.67	Sample	P	0 - 25
2144019	Chlorophyll-a, Uncorrected	1.56	Sample	P	0 - 25
2144019	Phaeophytin-a	6.35	Sample	P	0 - 25

Reference Method: SOP-PCR-1.0
 Batch ID: P375820

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2144311	HF183-qPCR	7.21	Spike	P	0 - 25

Reference Method: SOP-PCR-1.2
 Batch ID: P375820

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2144311	GULL2-qPCR	9.16	Spike	P	0 - 25

Reference Method: SOP-PCR-1.3
 Batch ID: P376042

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2144384	GFD-purified-qPCR	1.88	Spike	P	0 - 25

Reference Method: SOP-PCR-1.4
 Batch ID: P375820

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2144311	BacR-qPCR	1.06	Spike	P	0 - 25

Reference Method: SOP-PCR-1.5
 Batch ID: P375820

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
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Quality Assurance Report Precision

Reference Method: SOP-PCR-1.5
Batch ID: P375820

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2144311	DG3-qPCR	0.734	Spike	P	0 - 25

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

Quality Assurance Report Surrogates

Lab Sample ID: 2143849
Field Sample ID: G4SE0085

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
SOP-PCR-1.0	SKETA-qPCR	58.5	P	50 - 300
SOP-PCR-1.4	SKETA-qPCR	62.9	P	50 - 300
SOP-PCR-1.5	SKETA-qPCR	64.5	P	50 - 300

Lab Sample ID: 2143850
Field Sample ID: G4SEB064

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
SOP-PCR-1.0	SKETA-qPCR	61.4	P	50 - 300
SOP-PCR-1.2	SKETA-qPCR	57.4	P	50 - 300
SOP-PCR-1.4	SKETA-qPCR	65.9	P	50 - 300
SOP-PCR-1.5	SKETA-qPCR	61.0	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	93.0							
	Chlorophyll-a, Corrected	92.3						2.67	
	Chlorophyll-a, Uncorrected							1.56	
	Phaeophytin-a							6.35	
SOP-PCR-1.0	HF183-qPCR	73.8	129	111	103	99.9			7.21
SOP-PCR-1.2	GULL2-qPCR	73.9	79.3	59.6	71.4	69.6			9.16
				65.6					
SOP-PCR-1.3	GFD-purified-qPCR	38.5	131	170	160	170			1.88
SOP-PCR-1.4	BacR-qPCR	81.4	110	81.1	95.2	69.9			1.06
				95.1					
SOP-PCR-1.5	DG3-qPCR	213	106	117	87.5	81.0			0.734
				78.6					

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 1600 (MF) / E86006	Enterococci by MF by Florida Spectrum in Fort Lauderdale	2143852, 2143853, 2143854, 2143855
EPA 1603 / E86006	E. coli by MF by Florida Spectrum in Ft. Lauderdale	2143851

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
SM 10200 H (mod.) / E31780	Phytoplankton chlorophyll-a corrected, uncorrected, and phaeophytin by spectrophotometry	2143844, 2143845, 2143846
SOP-PCR-1.0 / E31780	Detection and quantification of human-specific HF183 Bacteroides genetic marker with quantitative polymerase chain reaction	2143849, 2143850
SOP-PCR-1.2 / E31780	Detection and quantification of coastal bird specific Catellicoccus marimammalium Gull2 genetic marker with quantitative polymerase chain reaction	2143850
SOP-PCR-1.3 / E31780	Detection and quantification of bird specific Helicobacter GFD genetic marker with quantitative polymerase chain reaction	2143850
SOP-PCR-1.4 / E31780	Detection and quantification of Ruminant specific Bacteroidetes BacR genetic marker with quantitative polymerase chain reaction	2143849, 2143850
SOP-PCR-1.5 / E31780	Detection and quantification of canine-specific DG3 Bacteroides genetic marker with quantitative polymerase chain reaction	2143849, 2143850

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
EPA 1600 (MF)	12/12/2019	12/12/2019 15:30		12/13/2019 15:40	Florida Spectrum-Ft. Lauderdale	2143852, 2143853, 2143854, 2143855
EPA 1603	12/12/2019	12/12/2019 15:30		12/13/2019 15:40	Florida Spectrum-Ft. Lauderdale	2143851
SM 10200 H (mod.)	12/13/2019	12/13/2019 13:15	Jessica Fetgatter	12/20/2019 09:11	Yuliya Danyuk	2143844, 2143845
	12/13/2019	12/13/2019 13:15	Jessica Fetgatter	12/20/2019 09:50	Yuliya Danyuk	2143846
SOP-PCR-1.0	12/13/2019	12/13/2019 15:30	Angela Smith	12/18/2019 09:46	Lauren Campbell	2143849, 2143850
SOP-PCR-1.2	12/13/2019	12/13/2019 15:30	Angela Smith	12/18/2019 14:08	Mailin Lopez	2143850
SOP-PCR-1.3	12/13/2019	12/13/2019 15:30	Angela Smith	12/23/2019 12:16	Mailin Lopez	2143850
SOP-PCR-1.4	12/13/2019	12/13/2019 15:30	Angela Smith	12/18/2019 11:35	Lauren Campbell	2143849, 2143850
SOP-PCR-1.5	12/13/2019	12/13/2019 15:30	Angela Smith	12/18/2019 16:04	Lauren Campbell	2143849, 2143850