

Biological Analysis Report

SW-DIST-2018-04-24-02

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: **Cockroach & Lil Manatee**
Request ID: **RQ-2018-04-23-02**
Customer: **SW-DIST**
Project ID: **SMP**

Send Reports to:
FL Dept. of Environmental Protection
FL Dept. of Environmental Protection
13051 N. Telecom Parkway
Temple Terrace, FL 33637-0926
Attn: Judy Ashton

For additional information please contact
Cheryl Swanson - Administrator
J. Marshall Faircloth - Aquatic Toxicology
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Certified by: Puja Jasrotia, Environmental Manager

Date Certified: 05-JUN-2018 11:34



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: Cockroach Bay at Boat Ramp

Collection Date/Time: 04/23/2018 09:00

Field ID: G1SW0089

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1986938	SM 10200 H (mod.)	Chlorophyll-a, Corrected	2.5		ug/L	P344914	
		Phaeophytin-a	0.43	I	ug/L	P344914	
		Chlorophyll-a, Uncorrected	2.8		ug/L	P344914	
1986944	SM 9222 D	Fecal Coliforms-Membrane Filter	4	U	cfu/100 mL		
	SM 9230 C	Enterococci-Membrane Filter	20	B	cfu/100 mL		

Sample Location: Cockroach Bay at Boat Ramp_DUP

Collection Date/Time: 04/23/2018 09:10

Field ID: G1SW0089

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1986939	SM 10200 H (mod.)	Chlorophyll-a, Corrected	2.4		ug/L	P344914	
		Phaeophytin-a	0.51	I	ug/L	P344914	
		Chlorophyll-a, Uncorrected	2.8		ug/L	P344914	
1986945	SM 9222 D	Fecal Coliforms-Membrane Filter	4	U	cfu/100 mL		
	SM 9230 C	Enterococci-Membrane Filter	36	B	cfu/100 mL		

Sample Location: BLANK_04232018

Collection Date/Time: 04/23/2018 10:50

Field ID: BLANK

Matrix: W-FIELD-BK

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1986940	SM 10200 H (mod.)	Chlorophyll-a, Corrected	0.62	U	ug/L	P344914	
		Phaeophytin-a	0.45	U	ug/L	P344914	
		Chlorophyll-a, Uncorrected	0.45	U	ug/L	P344914	

Sample Location: Piney Pt Creek @ County Line Rd

Collection Date/Time: 04/23/2018 10:00

Field ID: G1SW0091

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1986942	SOP-PCR-1.0	HF183-qPCR**	33	T	GEU/100 mL	P345263	
	SOP-PCR-4.0	HF183 - Human Source Marker**	Above Threshold				
1986948	SM 9230 C	Enterococci-Membrane Filter	4400		cfu/100 mL		

Sample Location: Little Manatee River at SP Boat Ramp

Collection Date/Time: 04/23/2018 10:30

Field ID: G2SW0037

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1986937	SM 10200 H (mod.)	Chlorophyll-a, Corrected	0.97	I	ug/L	P344914	
		Phaeophytin-a	0.81	I	ug/L	P344914	
		Chlorophyll-a, Uncorrected	1.5		ug/L	P344914	
1986943	EPA 1603	Escherichia coli-Membrane Filter**	64	B	cfu/100 mL		

Sample Location: Cockroach Bay at Dockage

Collection Date/Time: 04/23/2018 09:20

Field ID: G1SW0090

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
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Field ID: G1SW0090

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1986941	SM 10200 H (mod.)	Chlorophyll-a, Corrected	9.7	A	ug/L	P344914	
		Phaeophytin-a	2.5	A	ug/L	P344914	
		Chlorophyll-a, Uncorrected	12	A	ug/L	P344914	
1986947	SM 9222 D	Fecal Coliforms-Membrane Filter	12	B	cfu/100 mL		
	SM 9230 C	Enterococci-Membrane Filter	4	U	cfu/100 mL		

Non-Conformance Report

NCR ID: 6994

Event(s)

SW-DIST-2018-04-24-02

Job(s)

TLH-2018-04-24-78

Sample(s)

1986954

Test(s)

NCR Type: SHIPPING/RECEIVING

NCR Category: Sample Integrity

Observation: Sample received with cracked cap.

Resolution: Cracked cap replaced in lab. Note written on container in red ink.

Authorized by/Date: Joshua Ayres 4/27/2018

NCR ID: 7005

Event(s)

SW-DIST-2018-04-24-02

Job(s)

TLH-2018-04-24-74

Sample(s)

1986929

Test(s)

NCR Type: SHIPPING/RECEIVING

NCR Category: Preservation Not Intact

Observation: Sample not preserved to pH < 2.

Resolution: Sample preserved in the laboratory with sulfuric acid.
H2SO4 Lot# SA 7163030 | Expiration Date: 06/12/2018

Authorized by/Date: Joshua Ayres 4/27/2018

NCR ID: 7006

Event(s)

SW-DIST-2018-04-24-02

Job(s)

TLH-2018-04-24-80

Sample(s)

1986964

Test(s)

NCR Type: SHIPPING/RECEIVING

NCR Category: Preservation Not Intact

Observation: Sample not preserved to pH < 2.

Resolution: Sample preserved in the laboratory with nitric acid 04/24/2018 at 11:30.
HNO3 Lot# NA7226050 | Expiration Date: 08/14/2018

Authorized by/Date: Joshua Ayres 6/1/2018

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

Quality Assurance Report Method Blank Results

Reference Method: SM 10200 H (mod.)
Batch ID: P344914

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: P345263

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: P344914

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Chlorophyll-a, Corrected	88.2		P	84 - 116

Reference Method: SOP-PCR-1.0
Batch ID: P345263

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
HF183-qPCR	129	114	P/P	50 - 175

Quality Assurance Report Matrix Spike Accuracy

Reference Method: SOP-PCR-1.0
Batch ID: P345263

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1981928	HF183-qPCR	107		P	50 - 175
1981929	HF183-qPCR	116		P	50 - 175
1986942	HF183-qPCR	101		P	50 - 175
1987901	HF183-qPCR	110	92.7	P/P	50 - 175
1987903	HF183-qPCR	110		P	50 - 175
1987904	HF183-qPCR	113		P	50 - 175
1988267	HF183-qPCR	110		P	50 - 175
1988268	HF183-qPCR	98.8		P	50 - 175
1992703	HF183-qPCR	113		P	50 - 175
1992704	HF183-qPCR	108		P	50 - 175
1992705	HF183-qPCR	108		P	50 - 175
1992706	HF183-qPCR	93.3		P	50 - 175
1992707	HF183-qPCR	113		P	50 - 175

Quality Assurance Report Precision

Quality Assurance Report Precision

Reference Method: SM 10200 H (mod.)
 Batch ID: P344914

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1986941	Chlorophyll-a, Corrected	3.72	Sample	P	0 - 25
1986941	Chlorophyll-a, Uncorrected	2.85	Sample	P	0 - 25
1986941	Phaeophytin-a	3.05	Sample	P	0 - 25

Reference Method: SOP-PCR-1.0
 Batch ID: P345263

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1987901	HF183-qPCR	16.9	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: 1986942
 Field Sample ID: G1SW0091

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
SOP-PCR-1.0	SKETA-qPCR	123	P	50 - 300

Quality Assurance Report Summary

Ref. Method	Analyte	LCS % Recovery		MS % Recovery			Precision SMP	MS
				LCS				
SM 10200 H (mod.)	Chlorophyll-a, Corrected	88.2					3.72	
	Chlorophyll-a, Uncorrected						2.85	
	Phaeophytin-a						3.05	
SOP-PCR-1.0	HF183-qPCR	114	129	110	113	110		16.9
				98.8				

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 1603 / E84589	Escherichia coli by membrane filter method using modified mTEC by Advanced Environmental Tampa Lab for SWD	1986943
SM 10200 H (mod.) / E31780	Phytoplankton chlorophyll-a corrected, uncorrected, and phaeophytin by spectrophotometry	1986937, 1986938, 1986939, 1986940, 1986941
SM 9222 D / E84589	Fecal coliforms by membrane filter method by Advanced Environmental Overflow Laboratories for SWD	1986944, 1986945, 1986947
SM 9230 C / E84589	Enterococci by membrane filter method by Advanced Environmental Overflow Laboratories for SWD	1986944, 1986945, 1986947, 1986948
SOP-PCR-1.0 / E31780	Detection and quantification of human-specific HF183 Bacteroides genetic marker with quantitative polymerase chain reaction	1986942
SOP-PCR-4.0 / E31780	Preparation of Samples by Filtration and held for qPCR Analysis	1986942

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
EPA 1603	04/23/2018	04/23/2018 15:00		04/24/2018 14:00	AEL - Tampa	1986943
SM 10200 H (mod.)	04/24/2018	04/24/2018 14:16	Mariam Hanna	05/01/2018 08:20	Carina A. Tull	1986937, 1986938, 1986939, 1986940, 1986941
SM 9222 D	04/23/2018	04/23/2018 14:55		04/24/2018 13:00	AEL - Tampa	1986944, 1986945, 1986947
SM 9230 C	04/23/2018	04/23/2018 16:50		04/24/2018 15:00	AEL - Tampa	1986944, 1986945, 1986947, 1986948
SOP-PCR-1.0	04/24/2018	04/24/2018 14:45	Puja Jasrotia	05/16/2018 14:24	Mailin Lopez	1986942
SOP-PCR-4.0	04/24/2018	04/24/2018 14:45	Angela Smith	05/14/2018 15:47	Puja Jasrotia	1986942