

Biological Analysis Report

SE-DIST-2017-03-28-01

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

Overflow Analyses Performed By:
Advanced Environmental Labs - Miami
10200 USA Today Way
Mirimar, FL 33025
DOH Accreditation E82535

Event Description: **SMP- Dade Purple Run**
Request ID: **RQ-2017-03-27-20**
Customer: **SE-DIST**
Project ID: **SMP**

Send Reports to:
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Date Certified: 15-MAY-2017 16:17



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, Microbiology, 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: C-6 Miami Can

Collection Date/Time: 03/27/2017 12:15

Field ID: C-6 Miami Can

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1883877	SM 10200 H (mod.)	Chlorophyll-a, Corrected	1.6	I	ug/L	P322588	
		Phaeophytin-a	0.40	U	ug/L	P322588	
		Chlorophyll/Phaeophytin Ratio	1.7			P322588	
		Chlorophyll-a, Uncorrected	1.7		ug/L	P322588	
1883883	SOP-PCR-4.0	HF183 - Human Source Marker**	Below Threshold				
1883888	EPA 1603	Escherichia coli-Membrane Filter**	31	B	cfu/100 mL		

Sample Location: C-6 Miami Can (Miami-Dade MR01)

Collection Date/Time: 03/27/2017 11:00

Field ID: C-6 Miami Can (Miami-Dade MR01)

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1883878	SM 10200 H (mod.)	Chlorophyll-a, Corrected	1.9		ug/L	P322588	
		Phaeophytin-a	0.40	U	ug/L	P322588	
		Chlorophyll/Phaeophytin Ratio	1.7			P322588	
		Chlorophyll-a, Uncorrected	2.0		ug/L	P322588	
1883884	SOP-PCR-4.0	HF183 - Human Source Marker**	Below Threshold				
1883889	EPA 1600	Enterococci-Membrane Filter	43	B	cfu/100 mL		

Sample Location: Wagner Creek (WC-02 Miami-D)

Collection Date/Time: 03/27/2017 11:20

Field ID: Wagner Creek (WC-02 Miami-D)

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1883879	SM 10200 H (mod.)	Chlorophyll-a, Corrected	1.4	I	ug/L	P322683	
		Phaeophytin-a	0.40	U	ug/L	P322683	
		Chlorophyll/Phaeophytin Ratio	1.6			P322683	
		Chlorophyll-a, Uncorrected	1.6		ug/L	P322683	
1883885	SOP-PCR-1.0	HF183-qPCR**	620		GEU/100 mL	P324457	
	SOP-PCR-4.0	HF183 - Human Source Marker**	Above Threshold				
1883890	EPA 1600	Enterococci-Membrane Filter	460		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.

Sample Location: Miami Can @ S26 Structure

Collection Date/Time: 03/27/2017 11:45

Field ID: Miami Can @ S26 Structure

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1883880	SM 10200 H (mod.)	Chlorophyll-a, Corrected	1.4	I	ug/L	P322683	
		Phaeophytin-a	0.42	U	ug/L	P322683	
		Chlorophyll/Phaeophytin Ratio	1.7			P322683	
		Chlorophyll-a, Uncorrected	1.4		ug/L	P322683	
1883886	SOP-PCR-4.0	HF183 - Human Source Marker**	Below Threshold				
1883891	EPA 1600	Enterococci-Membrane Filter	26	B	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.

Sample Location: C-7 Little River / LR-10

Collection Date/Time: 03/27/2017 12:45

Field ID: C-7 Little River / LR-10

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1883881	SM 10200 H (mod.)	Chlorophyll-a, Corrected	3.4		ug/L	P322683	
		Phaeophytin-a	0.40	U	ug/L	P322683	
		Chlorophyll/Phaeophytin Ratio	1.7			P322683	
		Chlorophyll-a, Uncorrected	3.4		ug/L	P322683	
1883887	SOP-PCR-4.0	HF183 - Human Source Marker**	Below Threshold				
1883892	EPA 1603	Escherichia coli-Membrane Filter**	231		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.

Sample Location: Field Blank

Collection Date/Time: 03/27/2017 13:15

Field ID: Field Blank

Matrix: W-FIELD-BK

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1883882	Enterolert/QT	Enterococci-Quanti-Tray	1.0	UQ	MPN/100 mL	P322601	

Quality Assurance Report Method Blank Results

Reference Method: Enterolert/QT

Batch ID: P322601

Component	Result	Code	Units
Enterococci-Quanti-Tray	1.0	U	MPN/100 mL

Reference Method: SM 10200 H (mod.)

Batch ID: P322588

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: P322683

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: P324457

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

Quality Assurance Report Laboratory Control Sample Accuracy

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: SM 10200 H (mod.)
Batch ID: P322588

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Chlorophyll-a, Corrected	88.0		P	84 - 116

Reference Method: SM 10200 H (mod.)
Batch ID: P322683

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Chlorophyll-a, Corrected	86.1		P	84 - 116

Reference Method: SOP-PCR-1.0
Batch ID: P324457

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
HF183-qPCR	88.1	88.3	P/P	50 - 175

Quality Assurance Report Matrix Spike Accuracy

Reference Method: SOP-PCR-1.0
Batch ID: P324457

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1883885	HF183-qPCR	91.5		P	50 - 175
1883996	HF183-qPCR	86.4		P	50 - 175
1888887	HF183-qPCR	120		P	50 - 175
1889571	HF183-qPCR	108		P	50 - 175
1889648	HF183-qPCR	96.6		P	50 - 175
1889649	HF183-qPCR	102		P	50 - 175
1890371	HF183-qPCR	84.0		P	50 - 175
1895510	HF183-qPCR	120	109	P/P	50 - 175
1895511	HF183-qPCR	150		P	50 - 175
1895737	HF183-qPCR	97.5		P	50 - 175

Quality Assurance Report Precision

Reference Method: Enterolert/QT
Batch ID: P322601

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1883765	Enterococci-Quanti-Tray	17.1	Sample	P	0 - 80

Reference Method: SM 10200 H (mod.)
Batch ID: P322588

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1883763	Chlorophyll/Phaeophytin Ratio	0.0	Sample	P	0 - 25
1883763	Chlorophyll-a, Corrected	1.72	Sample	P	0 - 25
1883763	Chlorophyll-a, Uncorrected	6.98	Sample	P	0 - 25
1883763	Phaeophytin-a	13.1	Sample	P	0 - 25

Quality Assurance Report Precision

Reference Method: SM 10200 H (mod.)
Batch ID: P322683

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1883973	Chlorophyll/Phaeophytin Ratio	0.0	Sample	P	0 - 25
1883973	Chlorophyll-a, Corrected	4.64	Sample	P	0 - 25
1883973	Chlorophyll-a, Uncorrected	7.22	Sample	P	0 - 25

Reference Method: SOP-PCR-1.0
Batch ID: P324457

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1895510	HF183-qPCR	9.73	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: 1883885
Field Sample ID: Wagner Creek (WC-02 Miami-D)

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
SOP-PCR-1.0	SKETA-qPCR	95.4	P	50 - 300

Quality Assurance Report Summary

Ref. Method	Analyte	LCS % Recovery		MS % Recovery		LCS	Precision SMP	MS
Enterolert/QT SM 10200 H (mod.)	Enterococci-Quanti-Tray						17.1	
	Chlorophyll/Phaeophytin Ratio						0.0	
	Chlorophyll/Phaeophytin Ratio						0.0	
	Chlorophyll-a, Corrected	88.0					1.72	
	Chlorophyll-a, Corrected	86.1					4.64	
	Chlorophyll-a, Uncorrected						6.98	
	Chlorophyll-a, Uncorrected						7.22	
SOP-PCR-1.0	Phaeophytin-a						13.1	
	HF183-qPCR	88.3	88.1	120	108	96.6		9.73
				102				

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
Enterolert/QT / E31780	Enterococci by Enterolert Quanti-Tray method - non-chlorinated water systems	1883882
EPA 1600 / E82535	Enterococci by membrane filter method by Advanced Environmental Miami Overflow Laboratories for SED	1883889, 1883890, 1883891
EPA 1603 / E82535	Escherichia coli by membrane filter method using modified mTEC by Advanced Environmental Miami Overflow Laboratories for SED	1883888, 1883892
SM 10200 H (mod.) / E31780	Phytoplankton chlorophyll-a corrected, uncorrected, phaeophytin and ratio by spectrophotometry	1883877, 1883878, 1883879, 1883880, 1883881

Reference Method Descriptions

Method / DoH Cert #	Description	<u>Associated Samples</u>
SOP-PCR-1.0 / E31780	Detection and quantification of human-specific HF183 Bacteroides genetic marker with quantitative polymerase chain reaction	1883885
SOP-PCR-4.0 / E31780	Preparation of Samples by Filtration and held for qPCR Analysis	1883883, 1883884, 1883885, 1883886, 1883887

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
Enterolert/QT	03/28/2017	03/28/2017 15:05	Morgan Lane	03/29/2017 15:10	Morgan Lane	1883882
EPA 1600	03/27/2017			03/27/2017 14:35	AEL - Mirimar	1883889, 1883890, 1883891
EPA 1603	03/27/2017			03/27/2017 12:55	AEL - Mirimar	1883888, 1883892
SM 10200 H (mod.)	03/28/2017	03/28/2017 13:50	Carina A. Tull	03/31/2017	Brian Cumbie	1883877, 1883878
	03/28/2017	03/28/2017 13:50	Carina A. Tull	04/03/2017	Brian Cumbie	1883879, 1883880, 1883881
SOP-PCR-1.0	03/28/2017	03/28/2017 14:18	Puja Jasrotia	05/08/2017	Puja Jasrotia	1883885
SOP-PCR-4.0	03/28/2017	03/28/2017 14:18	Sarah Menz	05/05/2017	Puja Jasrotia	1883883, 1883884, 1883885, 1883886, 1883887