Biological Analysis Report

SO-DIST-2019-04-23-01

Florida Department of Environmental Protection
Central Laboratory
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DOH Accreditation E31780

Overflow Analyses Performed By:
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DOH Accreditation E85086

Event Description: **Sara Tidal**
Request ID: **RQ-2019-04-22-16**
Customer: **SO-DIST**
Project ID: **SMP**

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Certified by: Cheryl A. Swanson, Program Administrator

Date Certified: 17-MAY-2019 15:19

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: Curry(Tidal)@AlbeeFarm **Collection Date/Time: 04/22/2019 10:00**

Field ID: G3SD0066 Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2079959	SM 10200 H (mod.)	Chlorophyll-a, Corrected	6.7		ug/L	P363337	
		Phaeophytin-a	2.1	I	ug/L	P363337	
		Chlorophyll-a, Uncorrected	8.2		ug/L	P363337	
2079963	Enterolert/QT	Enterococci-Quanti-Tray	135		MPN/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: Hatchett@PinebrookRd **Collection Date/Time: 04/22/2019 10:15**

Field ID: G3SD0103 Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2079964	SM 9223 Quanti-Tray	Escherichia Coli-Quanti-Tray	216		MPN/100 mL		

Sample Location: Alligator @ Jacaranda **Collection Date/Time: 04/22/2019 10:30**

Field ID: G2SD0026 Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2079960	SM 10200 H (mod.)	Chlorophyll-a, Corrected	34		ug/L	P363337	
		Phaeophytin-a	6.7		ug/L	P363337	
		Chlorophyll-a, Uncorrected	39		ug/L	P363337	
2079966	SM 9223 Quanti-Tray	Escherichia Coli-Quanti-Tray	75		MPN/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: WoodmereCreek@HeronRd **Collection Date/Time: 04/22/2019 11:00**

Field ID: G2SD0027 Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2079961	SOP-PCR-1.0	HF183-qPCR**	94	U	GEU/100 mL	P362662	
2079967	Enterolert/QT	Enterococci-Quanti-Tray	332		MPN/100 mL		

Sample Location: UnnamedDitch@IndianaAve **Collection Date/Time: 04/22/2019 11:15**

Field ID: G2SD0022 Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2079965	SM 9223 Quanti-Tray	Escherichia Coli-Quanti-Tray	20		MPN/100 mL		

Sample Location: Gottfried@DeerCkMobile **Collection Date/Time: 04/22/2019 11:40**

Field ID: G2SD0028 Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2079962	SOP-PCR-4.0	HF183 - Human Source Marker**	Below Threshold			P362063	
2079968	Enterolert/QT	Enterococci-Quanti-Tray	20		MPN/100 mL		

Quality Assurance Report
Method Blank Results

Reference Method: SM 10200 H (mod.)
Batch ID: P363337

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: P362662

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: P363337

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Chlorophyll-a, Corrected	95.2		P	84 - 116

Reference Method: SOP-PCR-1.0
Batch ID: P362662

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
HF183-qPCR	105	128	P/P	50 - 175

Quality Assurance Report
Matrix Spike Accuracy

Reference Method: SOP-PCR-1.0
Batch ID: P362662

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2079961	HF183-qPCR	97.7		P	50 - 175
2080144	HF183-qPCR	109	106	P/P	50 - 175
2080145	HF183-qPCR	113		P	50 - 175
2080146	HF183-qPCR	107		P	50 - 175
2080147	HF183-qPCR	86.0		P	50 - 175
2080247	HF183-qPCR	88.3		P	50 - 175
2080248	HF183-qPCR	75.2		P	50 - 175
2080386	HF183-qPCR	104		P	50 - 175
2080387	HF183-qPCR	97.1		P	50 - 175
2080388	HF183-qPCR	96.8		P	50 - 175
2081275	HF183-qPCR	102		P	50 - 175
2081276	HF183-qPCR	106		P	50 - 175
2081376	HF183-qPCR	113		P	50 - 175

Quality Assurance Report
Precision

Quality Assurance Report
Precision

Reference Method: SM 10200 H (mod.)
Batch ID: P363337

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2079908	Chlorophyll-a, Corrected	0.871	Sample	P	0 - 25
2079908	Chlorophyll-a, Uncorrected	0.808	Sample	P	0 - 25

Reference Method: SOP-PCR-1.0
Batch ID: P362662

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2080144	HF183-qPCR	2.75	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: 2079961
Field Sample ID: G2SD0027

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
SOP-PCR-1.0	SKETA-qPCR	88.0	P	50 - 300

Quality Assurance Report
Summary

Ref. Method	Analyte	LCS % Recovery	MS % Recovery	Precision		
				LCS	SMP	MS
SM 10200 H (mod.)	Chlorophyll-a, Corrected	95.2			0.871	
	Chlorophyll-a, Uncorrected				0.808	
SOP-PCR-1.0	HF183-qPCR	128 105	97.7 109 106 113			2.75

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
Enterolert/QT / E85086	Enterococci by Enterolert Quanti-Tray method by Benchmark EA South in North Port	2079963, 2079967, 2079968
SM 10200 H (mod.) / E31780	Phytoplankton chlorophyll-a corrected, uncorrected, and phaeophytin by spectrophotometry	2079959, 2079960
SM 9223 Quanti-Tray / E85086	Escherichia coli by Colilert 18 Quanti-Tray method by Benchmark EA South in North Port	2079964, 2079965, 2079966
SOP-PCR-1.0 / E31780	Detection and quantification of human-specific HF183 Bacteroides genetic marker with quantitative polymerase chain reaction	2079961
SOP-PCR-4.0 / E31780	Preparation of Samples by Filtration and held for qPCR Analysis	2079962

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
Enterolert/QT	04/22/2019	04/22/2019 14:02		04/23/2019 15:51	Benchmark EnviroAnalytical in North Port	2079963, 2079967, 2079968
SM 10200 H (mod.)	04/23/2019	04/23/2019 14:01	Jennifer Mihalic	05/01/2019 10:22	Carina A. Tull	2079959, 2079960
SM 9223 Quanti-Tray	04/22/2019	04/22/2019 13:52		04/23/2019 14:45	Benchmark EnviroAnalytical in North Port	2079964, 2079965, 2079966
SOP-PCR-1.0	04/23/2019	04/23/2019 14:30	Angela Smith	05/03/2019 08:10	Sarah Menz	2079961
SOP-PCR-4.0	04/23/2019	04/23/2019 14:30	Angela Smith	05/13/2019 08:33	Sarah Menz	2079962