

Biological Analysis Report

NE-DIST-2017-10-18-02

Florida Department of Environmental Protection
Central Laboratory
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DOH Accreditation E31780

Overflow Analyses Performed By:
ALS Environmental - Jacksonville
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Jacksonville, FL 32256
DOH Accreditation E82502

Event Description: **LSJR SW**
Request ID: **RQ-2017-10-09-07**
Customer: **NE-DIST**
Project ID: **SMP**

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Certified by: Jennifer Walters, Environmental Manager

Date Certified: 06-DEC-2017 16:40



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: ST.JOHNS RIVER @ ALPINE GROVE DOCK

Collection Date/Time: 10/17/2017 08:35

Field ID: G2NE1129 10172017

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1937843	SM 10200 H (mod.)	Chlorophyll-a, Corrected	7.7		ug/L	P334112	
		Phaeophytin-a	11		ug/L	P334112	
		Chlorophyll-a, Uncorrected	15		ug/L	P334112	

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: GREEN CREEK @ SR 315 (SHARON RD)

Collection Date/Time: 10/17/2017 09:40

Field ID: G2NE0253 10172017

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1937846	SM 9223 B	Escherichia Coli-Quanti-Tray**	414		MPN/100 mL		
1937849	SOP-PCR-1.0	HF183-purified-qPCR**	7.0	TJ	GEU/100 mL	P334951	LCS, SUR
	SOP-PCR-1.3	GFD-purified-qPCR**	170	U	TSC/100 mL	P333651	LCS
	SOP-PCR-4.0	HF183 - Human Source Marker**	Above Threshold				

Ref. Method and Comment:

SOP-PCR-1.0: Quality control failure(s) observed. See QA report for details. Precision data unavailable.

SOP-PCR-1.3: No amplification of GFD marker.

Sample Location: PETERS CREEK @ SR 16

Collection Date/Time: 10/17/2017 10:05

Field ID: G2NE0719 10172017

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1937844	SM 9223 B	Escherichia Coli-Quanti-Tray**	288		MPN/100 mL		
1937847	SOP-PCR-1.0	HF183-qPCR**	28	T	GEU/100 mL	P333482	
	SOP-PCR-4.0	HF183 - Human Source Marker**	Below Threshold				

Sample Location: GROG BRANCH @ LONG BRANCH RD

Collection Date/Time: 10/17/2017 12:20

Field ID: G2NE0841 10172017

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1937842	SM 10200 H (mod.)	Chlorophyll-a, Corrected	1.6	I	ug/L	P334112	
		Phaeophytin-a	0.80	U	ug/L	P334112	
		Chlorophyll-a, Uncorrected	1.4	I	ug/L	P334112	

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: GROG BRANCH @ LONG BRANCH RD

Collection Date/Time: 10/17/2017 12:20

Field ID: G2NE0841 10172017

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1937845	SM 9223 B	Escherichia Coli-Quanti-Tray**	410		MPN/100 mL		
1937848	SOP-PCR-1.0	HF183-qPCR**	86	T	GEU/100 mL	P334675	
	SOP-PCR-4.0	HF183 - Human Source Marker**	Above Threshold				

Quality Assurance Report

Method Blank Results

Quality Assurance Report Method Blank Results

Reference Method: SM 10200 H (mod.)
Batch ID: P334112

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: P333482

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

Reference Method: SOP-PCR-1.0
Batch ID: P334675

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

Reference Method: SOP-PCR-1.0
Batch ID: P334951

Component	Result	Code	Units
HF183-purified-qPCR	47	U	GEU/100 mL

Reference Method: SOP-PCR-1.3
Batch ID: P333651

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

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: SM 10200 H (mod.)
Batch ID: P334112

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Chlorophyll-a, Corrected	107		P	84 - 116

Reference Method: SOP-PCR-1.0
Batch ID: P333482

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
HF183-qPCR	116	131	P/P	50 - 175

Reference Method: SOP-PCR-1.0
Batch ID: P334675

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
HF183-qPCR	82.6	107	P/P	50 - 175
HF183-qPCR	81.7	95.7	P/P	50 - 175

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: SOP-PCR-1.0
 Batch ID: P334951

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
HF183-purified-qPCR	95.7	8.51	P/F	50 - 175

Reference Method: SOP-PCR-1.3
 Batch ID: P333651

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
GFD-purified-qPCR	93.3	1.78	P/F	50 - 175

Quality Assurance Report Matrix Spike Accuracy

Reference Method: SOP-PCR-1.0
 Batch ID: P333482

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1932386	HF183-qPCR	113		P	50 - 175
1937040	HF183-qPCR	91.5		P	50 - 175
1937041	HF183-qPCR	100		P	50 - 175
1937042	HF183-qPCR	107		P	50 - 175
1937043	HF183-qPCR	114	91.2	P/P	50 - 175
1937053	HF183-qPCR	102		P	50 - 175
1937847	HF183-qPCR	94.6		P	50 - 175
1938090	HF183-qPCR	96.2		P	50 - 175
1938091	HF183-qPCR	104		P	50 - 175
1938788	HF183-qPCR	74.9		P	50 - 175
1938789	HF183-qPCR	106		P	50 - 175
1938838	HF183-qPCR	87.3		P	50 - 175
1938839	HF183-qPCR	86.9		P	50 - 175

Reference Method: SOP-PCR-1.0
 Batch ID: P334675

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1935252	HF183-qPCR	79.2		P	50 - 175
1936509	HF183-qPCR	93.5		P	50 - 175
1936510	HF183-qPCR	93.3		P	50 - 175
1936867	HF183-qPCR	73.4		P	50 - 175
1936920	HF183-qPCR	61.3		P	50 - 175
1937848	HF183-qPCR	75.7		P	50 - 175
1942953	HF183-qPCR	91.2	81.5	P/P	50 - 175
1943020	HF183-qPCR	92.1		P	50 - 175
1944326	HF183-qPCR	79.1		P	50 - 175
1944327	HF183-qPCR	76.5		P	50 - 175
1944328	HF183-qPCR	79.3		P	50 - 175
1944330	HF183-qPCR	90.1		P	50 - 175

Reference Method: SOP-PCR-1.0
 Batch ID: P334951

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1937849	HF183-purified-qPCR	83.8		P	50 - 175

Quality Assurance Report Matrix Spike Accuracy

Reference Method: SOP-PCR-1.3
Batch ID: P333651

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1937849	GFD-purified-qPCR	157		P	50 - 175
1938722	GFD-purified-qPCR	76.0	89.1	P/P	50 - 175
1938723	GFD-purified-qPCR	82.9		P	50 - 175
1938724	GFD-purified-qPCR	51.3		P	50 - 175
1938725	GFD-purified-qPCR	114		P	50 - 175
1938726	GFD-purified-qPCR	88.0		P	50 - 175
1938727	GFD-purified-qPCR	72.7		P	50 - 175
1938728	GFD-purified-qPCR	70.8		P	50 - 175
1938729	GFD-purified-qPCR	76.6		P	50 - 175
1938730	GFD-purified-qPCR	136		P	50 - 175
1938731	GFD-purified-qPCR	89.0		P	50 - 175
1938753	GFD-purified-qPCR	111		P	50 - 175
1939011	GFD-purified-qPCR	143		P	50 - 175

Quality Assurance Report Precision

Reference Method: SOP-PCR-1.0
Batch ID: P333482

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1937043	HF183-qPCR	22.5	Spike	P	0 - 25

Reference Method: SOP-PCR-1.0
Batch ID: P334675

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1942953	HF183-qPCR	11.2	Spike	P	0 - 25

Reference Method: SOP-PCR-1.3
Batch ID: P333651

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1938722	GFD-purified-qPCR	15.8	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: 1937847
Field Sample ID: G2NE0719 10172017

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
SOP-PCR-1.0	SKETA-qPCR	78.1	P	50 - 300

Quality Assurance Report Surrogates

Lab Sample ID: 1937848
Field Sample ID: G2NE0841 10172017

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
SOP-PCR-1.0	SKETA-qPCR	77.3	P	50 - 300

Lab Sample ID: 1937849
Field Sample ID: G2NE0253 10172017

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
SOP-PCR-1.0	SKETA-qPCR	7.29	F	30 - 300

Quality Assurance Report Summary

Ref. Method	Analyte	LCS % Recovery	MS % Recovery	LCS	Precision SMP	MS
SM 10200 H (mod.) SOP-PCR-1.0	Chlorophyll-a, Corrected	107				
	HF183-purified-qPCR	8.51 95.7	83.8			
	HF183-qPCR	131 116	91.5 100 107			22.5
			114			
	HF183-qPCR	82.6 95.7 81.7	61.3 91.2 81.5			11.2
		107	92.1			
SOP-PCR-1.3	GFD-purified-qPCR	1.78 93.3	76.0 89.1 157			15.8
			82.9			

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
SM 10200 H (mod.) / E31780	Phytoplankton chlorophyll-a corrected, uncorrected, and phaeophytin by spectrophotometry	1937842, 1937843
SM 9223 B / E82502	Escherichia coli by Colilert Quanti-Tray method by ALS Environmental Overflow Laboratory for Northeast District	1937844, 1937845, 1937846
SOP-PCR-1.0 / E31780	Detection and quantification of human-specific HF183 Bacteroides genetic marker with quantitative polymerase chain reaction	1937847, 1937848
SOP-PCR-1.0 / E31780	Detection and quantification of human-specific HF183 Bacteroides genetic marker with quantitative polymerase chain reaction	1937849
SOP-PCR-1.3 / E31780	Detection and quantification of bird specific Helicobacter GFD genetic marker with quantitative polymerase chain reaction	1937849
SOP-PCR-4.0 / E31780	Preparation of Samples by Filtration and held for qPCR Analysis	1937847, 1937848, 1937849

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
SM 10200 H (mod.)	10/18/2017	10/18/2017 14:23	Cathy Sherrer	10/26/2017	Kim M. Spencer	1937842, 1937843
SM 9223 B	10/17/2017	10/17/2017 15:28		10/18/2017 17:00	ALS Environmental, Jax	1937844, 1937845, 1937846
SOP-PCR-1.0	10/18/2017	10/18/2017 13:30	Avril Wood	11/15/2017	Sarah Menz	1937848
	10/18/2017	10/18/2017 13:30	Sarah Menz	10/23/2017	Sarah Menz	1937847
	10/18/2017	10/18/2017 13:30	Sarah Menz	11/21/2017	Sarah Menz	1937849
SOP-PCR-1.3	10/18/2017	10/18/2017 13:30	Avril Wood	11/03/2017	Sarah Menz	1937849
SOP-PCR-4.0	10/18/2017	10/18/2017 13:30	Avril Wood	11/14/2017	Puja Jasrotia	1937847, 1937848, 1937849