

Biological Analysis Report

NE-DIST-2018-04-26-02

Florida Department of Environmental Protection
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Event Description: **LSJR East 1**
Request ID: **RQ-2018-04-16-36**
Customer: **NE-DIST**
Project ID: **SMP**

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Date Certified: 06-JUN-2018 11:20



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: GREENFIELD CREEK AT ATLANTIC BLVD.

Collection Date/Time: 04/25/2018 09:50

Field ID: 20030657

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1987885	SM 10200 H (mod.)	Chlorophyll-a, Corrected	1.8		ug/L	P344933	RPD
		Phaeophytin-a	0.83	I	ug/L	P344933	
		Chlorophyll-a, Uncorrected	2.3		ug/L	P344933	RPD
1987895	SM 9223 B	Escherichia Coli-Quanti-Tray**	771		MPN/100 mL		
1987901	SOP-PCR-1.0	HF183-qPCR**	140	U	GEU/100 mL	P345263	
	SOP-PCR-1.2	GULL2-qPCR**	8.4E+03	U	TSC/100 mL	P345263	LCS
	SOP-PCR-1.3	GFD-purified-qPCR**	170	U	TSC/100 mL	P346102	LCS, MS
	SOP-PCR-1.4	BacR-qPCR**	1.5E+03	UJ	TSC/100 mL	P345263	RPD
	SOP-PCR-4.0	HF183 - Human Source Marker**	Above Threshold				

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.

SOP-PCR-1.0: No amplification of HF183 marker.

SOP-PCR-1.4: Quality control failure(s) observed. See QA report for details.

Sample Location: GREENFIELD CR. AT HODGES RD.

Collection Date/Time: 04/25/2018 10:15

Field ID: G2NE1145

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1987897	SM 9223 B	Escherichia Coli-Quanti-Tray**	6130		MPN/100 mL		
1987903	SOP-PCR-1.0	HF183-qPCR**	71	U	GEU/100 mL	P345263	
	SOP-PCR-1.2	GULL2-qPCR**	4.2E+03	U	TSC/100 mL	P345263	LCS
	SOP-PCR-1.3	GFD-purified-qPCR**	84	U	TSC/100 mL	P346102	LCS, MS
	SOP-PCR-1.4	BacR-qPCR**	760	U	TSC/100 mL	P345263	RPD
	SOP-PCR-4.0	HF183 - Human Source Marker**	Above Threshold				

Ref. Method and Comment:

SOP-PCR-1.0: No amplification of HF183 marker.

Sample Location: NEWCASTLE CR @ FT CAROLINE HILLS RD

Collection Date/Time: 04/25/2018 10:45

Field ID: 20030872

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1987886	SM 10200 H (mod.)	Chlorophyll-a, Corrected	0.55	U	ug/L	P344933	RPD
		Phaeophytin-a	0.40	U	ug/L	P344933	
		Chlorophyll-a, Uncorrected	0.42	I	ug/L	P344933	RPD
1987896	SM 9223 B	Escherichia Coli-Quanti-Tray**	355		MPN/100 mL		
1987902	SOP-PCR-4.0	HF183 - Human Source Marker**	Below Threshold				

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: NEWCASTLE CR @ MILLCREST DR

Collection Date/Time: 04/25/2018 11:15

Field ID: 20030805

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1987898	SM 9223 B	Escherichia Coli-Quanti-Tray**	489		MPN/100 mL		
1987904	SOP-PCR-1.0	HF183-qPCR**	71	U	GEU/100 mL	P345263	
	SOP-PCR-1.2	GULL2-qPCR**	4.2E+03	U	TSC/100 mL	P345263	LCS

Field ID: 20030805

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1987904	SOP-PCR-1.3	GFD-purified-qPCR**	120	I	TSC/100 mL	P346102	LCS, MS
	SOP-PCR-1.4	BacR-qPCR**	760	U	TSC/100 mL	P345263	RPD
	SOP-PCR-4.0	HF183 - Human Source Marker**	Above Threshold				

Ref. Method and Comment:
 SOP-PCR-1.0: No amplification of HF183 marker.

Sample Location: STRAWBERRY CR AT END OF BOWLAN RD. Collection Date/Time: 04/25/2018 12:00

Field ID: 20030579

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1987887	SM 10200 H (mod.)	Chlorophyll-a, Corrected	0.57	I	ug/L	P344933	RPD
		Phaeophytin-a	0.40	U	ug/L	P344933	
		Chlorophyll-a, Uncorrected	0.61	I	ug/L	P344933	RPD
1987899	SM 9223 B	Escherichia Coli-Quanti-Tray**	563		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: PUNCHEON BR @ DEERWOOD PK BLVD Collection Date/Time: 04/25/2018 09:10

Field ID: 20030866

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1987888	SM 10200 H (mod.)	Chlorophyll-a, Corrected	0.89	I	ug/L	P344933	RPD
		Phaeophytin-a	1.6		ug/L	P344933	
		Chlorophyll-a, Uncorrected	1.9		ug/L	P344933	RPD
1987900	SM 9223 B	Escherichia Coli-Quanti-Tray**	185		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.

Quality Assurance Report Method Blank Results

**Reference Method: SM 10200 H (mod.)
 Batch ID: P344933**

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

**Reference Method: SOP-PCR-1.2
 Batch ID: P345263**

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

Quality Assurance Report Method Blank Results

Reference Method: SOP-PCR-1.2
Batch ID: P345263

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

Reference Method: SOP-PCR-1.3
Batch ID: P346102

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

Reference Method: SOP-PCR-1.4
Batch ID: P345263

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

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: SM 10200 H (mod.)
Batch ID: P344933

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Chlorophyll-a, Corrected	91.4		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

Reference Method: SOP-PCR-1.2
Batch ID: P345263

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
GULL2-qPCR	151	92.0	P/P	50 - 300
GULL2-qPCR	46.8	138	F/P	50 - 300

Reference Method: SOP-PCR-1.3
Batch ID: P346102

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
GFD-purified-qPCR	131	37.2	P/F	50 - 175

Reference Method: SOP-PCR-1.4
Batch ID: P345263

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
BacR-qPCR	155	92.3	P/P	50 - 175
BacR-qPCR	74.4	119	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	92.7	P	50 - 175
1981929	HF183-qPCR	116		P	50 - 175
1986942	HF183-qPCR	101		P	50 - 175
1987901	HF183-qPCR	110		P/P	50 - 175
1987903	HF183-qPCR	110		P	50 - 175
1987904	HF183-qPCR	113		P	50 - 175
1988267	HF183-qPCR	110	92.7	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

Reference Method: SOP-PCR-1.2

Batch ID: P345263

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1986379	GULL2-qPCR	84.6	106	P	50 - 300
1987901	GULL2-qPCR	108		P/P	50 - 300
1987903	GULL2-qPCR	120		P	50 - 300
1987904	GULL2-qPCR	117		P	50 - 300

Reference Method: SOP-PCR-1.3

Batch ID: P346102

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1985267	GFD-purified-qPCR	0.0	141	F	50 - 175
1987901	GFD-purified-qPCR	160		P/P	50 - 175
1987903	GFD-purified-qPCR	160		P	50 - 175
1987904	GFD-purified-qPCR	152		P	50 - 175
1988864	GFD-purified-qPCR	131		P	50 - 175
1988870	GFD-purified-qPCR	73.0	141	P	50 - 175
1988959	GFD-purified-qPCR	115		P	50 - 175

Reference Method: SOP-PCR-1.4

Batch ID: P345263

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1986379	BacR-qPCR	72.7	113	P	50 - 175
1987901	BacR-qPCR	84.6		P/P	50 - 175
1987903	BacR-qPCR	121		P	50 - 175
1987904	BacR-qPCR	111		P	50 - 175
1988267	BacR-qPCR	93.2		P	50 - 175

Quality Assurance Report Precision

Quality Assurance Report Precision

Reference Method: SM 10200 H (mod.)
Batch ID: P344933

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1987569	Chlorophyll-a, Corrected	49.4	Sample	F	0 - 25
1987569	Chlorophyll-a, Uncorrected	57.7	Sample	F	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

Reference Method: SOP-PCR-1.2
Batch ID: P345263

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1987901	GULL2-qPCR	1.94	Spike	P	0 - 25

Reference Method: SOP-PCR-1.3
Batch ID: P346102

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1987901	GFD-purified-qPCR	12.6	Spike	P	0 - 25

Reference Method: SOP-PCR-1.4
Batch ID: P345263

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1987901	BacR-qPCR	28.7	Spike	F	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: 1987901
Field Sample ID: 20030657

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
SOP-PCR-1.0	SKETA-qPCR	104	P	50 - 300
SOP-PCR-1.2	SKETA-qPCR	95.9	P	50 - 300
SOP-PCR-1.4	SKETA-qPCR	111	P	50 - 300

Lab Sample ID: 1987903
Field Sample ID: G2NE1145

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
SOP-PCR-1.0	SKETA-qPCR	102	P	50 - 300

Quality Assurance Report Surrogates

Lab Sample ID: 1987903
Field Sample ID: G2NE1145

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
SOP-PCR-1.2	SKETA-qPCR	110	P	50 - 300
SOP-PCR-1.4	SKETA-qPCR	129	P	50 - 300

Lab Sample ID: 1987904
Field Sample ID: 20030805

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
SOP-PCR-1.0	SKETA-qPCR	112	P	50 - 300
SOP-PCR-1.2	SKETA-qPCR	109	P	50 - 300
SOP-PCR-1.4	SKETA-qPCR	124	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	91.4							49.4	
	Chlorophyll-a, Uncorrected								57.7	
SOP-PCR-1.0	HF183-qPCR	114	129		110	113	110			16.9
					98.8					
SOP-PCR-1.2	GULL2-qPCR	151	138	46.8	108	106	120			1.94
		92.0			117					
SOP-PCR-1.3	GFD-purified-qPCR	37.2	131		0.0	160	141			12.6
					160					
SOP-PCR-1.4	BacR-qPCR	155	119	74.4	84.6	113	121			28.7
		92.3			111					

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
SM 10200 H (mod.) / E31780	Phytoplankton chlorophyll-a corrected, uncorrected, and phaeophytin by spectrophotometry	1987885, 1987886, 1987887, 1987888
SM 9223 B / E82502	Escherichia coli by Colilert Quanti-Tray method by ALS Environmental Overflow Laboratory for Northeast District	1987895, 1987896, 1987897, 1987898, 1987899, 1987900
SOP-PCR-1.0 / E31780	Detection and quantification of human-specific HF183 Bacteroides genetic marker with quantitative polymerase chain reaction	1987901, 1987903, 1987904
SOP-PCR-1.2 / E31780	Detection and quantification of coastal bird specific Catellicoccus marimammalium Gull2 genetic marker with quantitative polymerase chain reaction	1987901, 1987903, 1987904
SOP-PCR-1.3 / E31780	Detection and quantification of bird specific Helicobacter GFD genetic marker with quantitative polymerase chain reaction	1987901, 1987903, 1987904
SOP-PCR-1.4 / E31780	Detection and quantification of Ruminant specific Bacteroidetes BacR genetic marker with quantitative polymerase chain reaction	1987901, 1987903, 1987904
SOP-PCR-4.0 / E31780	Preparation of Samples by Filtration and held for qPCR Analysis	1987901, 1987902, 1987903, 1987904

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
SM 10200 H (mod.)	04/26/2018	04/26/2018 13:50	Peterson Janvier	05/03/2018 08:40	Carina A. Tull	1987885, 1987886, 1987887, 1987888
SM 9223 B	04/25/2018	04/25/2018 15:04		04/26/2018 16:25	ALS Environmental, Jax	1987895, 1987896, 1987897, 1987898, 1987899, 1987900
SOP-PCR-1.0	04/26/2018	04/26/2018 12:35	Puja Jasrotia	05/16/2018 14:24	Mailin Lopez	1987901, 1987903, 1987904
SOP-PCR-1.2	04/26/2018	04/26/2018 12:35	Puja Jasrotia	05/29/2018 16:30	Mailin Lopez	1987901, 1987903, 1987904
SOP-PCR-1.3	04/26/2018	04/26/2018 12:35	Mailin Lopez	05/31/2018 09:23	Sarah Menz	1987901, 1987903, 1987904
SOP-PCR-1.4	04/26/2018	04/26/2018 12:35	Puja Jasrotia	05/24/2018 14:30	Mailin Lopez	1987901, 1987903, 1987904
SOP-PCR-4.0	04/26/2018	04/26/2018 12:35	Angela Smith	05/14/2018 15:47	Puja Jasrotia	1987901, 1987902, 1987903, 1987904