

Biological Analysis Report

NE-DIST-2018-03-02-01

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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DOH Accreditation E82502

Event Description: **LSJR East 1_2018**

Request ID: **RQ-2018-02-26-09**

Customer: **NE-DIST**

Project ID: **SMP**

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Date Certified: 03-MAY-2018 14:32



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: BIG POTTSBURG CR AT BELFORT RD

Collection Date/Time: 03/01/2018 14:10

Field ID: 20030064

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1971415	SM 10200 H (mod.)	Chlorophyll-a, Corrected	5.4		ug/L	P341183	
		Phaeophytin-a	0.40	U	ug/L	P341183	
		Chlorophyll-a, Uncorrected	5.8		ug/L	P341183	
1971421	SM 9223 B	Escherichia Coli-Quanti-Tray**	20		MPN/100 mL		
1971428	SOP-PCR-4.0	HF183 - Human Source Marker**	Below Threshold				

Sample Location: BIG POTTSBURG CR ~ 200 M N BOWDEN RD

Collection Date/Time: 03/01/2018 14:50

Field ID: 20030068

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1971416	SM 10200 H (mod.)	Chlorophyll-a, Corrected	0.99	I	ug/L	P341183	
		Phaeophytin-a	1.8		ug/L	P341183	
		Chlorophyll-a, Uncorrected	2.1		ug/L	P341183	
1971422	SM 9223 B	Escherichia Coli-Quanti-Tray**	148		MPN/100 mL		
1971429	SOP-PCR-4.0	HF183 - Human Source Marker**	Below Threshold				

Sample Location: NEW CASTLE CR @ FT CAROLINE HILLS RD

Collection Date/Time: 03/01/2018 11:55

Field ID: 20030872

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1971413	SM 10200 H (mod.)	Chlorophyll-a, Corrected	0.81	I	ug/L	P341183	
		Phaeophytin-a	0.40	U	ug/L	P341183	
		Chlorophyll-a, Uncorrected	0.94	I	ug/L	P341183	
1971419	SM 9223 B	Escherichia Coli-Quanti-Tray**	650		MPN/100 mL		
1971426	SOP-PCR-1.0	HF183-qPCR**	140	U	GEU/100 mL	P342094	RPD
	SOP-PCR-1.2	GULL2-qPCR**	8.4E+03	U	TSC/100 mL	P342094	
	SOP-PCR-1.3	GFD-purified-qPCR**	230	I	TSC/100 mL	P342214	LCS, MS
	SOP-PCR-1.4	BacR-qPCR**	1.5E+03	U	TSC/100 mL	P342094	LCS
	SOP-PCR-4.0	HF183 - Human Source Marker**	Above Threshold				

Ref. Method and Comment:

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

SOP-PCR-1.2: No amplification of GULL2 marker. Precision data unavailable for Analysis Batch A82936.

SOP-PCR-1.4: No amplification of BACR marker. Precision data unavailable for Analysis Batch A82935.

Sample Location: GREENFIELD CREEK AT ATLANTIC BLVD

Collection Date/Time: 03/01/2018 09:30

Field ID: 20030657

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1971414	SM 10200 H (mod.)	Chlorophyll-a, Corrected	1.2	I	ug/L	P341183	
		Phaeophytin-a	1.9		ug/L	P341183	
		Chlorophyll-a, Uncorrected	2.4		ug/L	P341183	
1971420	SM 9223 B	Escherichia Coli-Quanti-Tray**	279		MPN/100 mL		
1971427	SOP-PCR-4.0	HF183 - Human Source Marker**	Below Threshold				

Sample Location: GREENFIELD CR. AT HODGES RD

Collection Date/Time: 03/01/2018 10:00

Field ID: G2NE1145

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1971423	SM 9223 B	Escherichia Coli-Quanti-Tray**	1150		MPN/100 mL		
1971430	SOP-PCR-1.0	HF183-qPCR**	94	U	GEU/100 mL	P342094	RPD
	SOP-PCR-1.2	GULL2-qPCR**	5.6E+03	U	TSC/100 mL	P342094	
	SOP-PCR-1.3	GFD-purified-qPCR**	49	TJ	TSC/100 mL	P342214	LCS, MS
	SOP-PCR-1.4	BacR-qPCR**	1.0E+03	U	TSC/100 mL	P342094	LCS
	SOP-PCR-4.0	HF183 - Human Source Marker**	Above Threshold				

Ref. Method and Comment:

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

SOP-PCR-1.2: No amplification of GULL2 marker. Precision data unavailable for Analysis Batch A82936.

SOP-PCR-1.3: Quality control failure(s) observed. See QA report for details.

SOP-PCR-1.4: No amplification of BACR marker. Precision data unavailable for Analysis Batch A82935.

Sample Location: PUNCHEON BR @ GATE PKWY N

Collection Date/Time: 03/01/2018 13:10

Field ID: 20030867

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1971417	SM 10200 H (mod.)	Chlorophyll-a, Corrected	1.5	I	ug/L	P341183	
		Phaeophytin-a	1.9		ug/L	P341183	
		Chlorophyll-a, Uncorrected	2.7		ug/L	P341183	
1971424	SM 9223 B	Escherichia Coli-Quanti-Tray**	345		MPN/100 mL		

Sample Location: STRAWBERRY CR AT LONE STAR ROAD

Collection Date/Time: 03/01/2018 10:50

Field ID: 20030754

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1971418	SM 10200 H (mod.)	Chlorophyll-a, Corrected	1.9		ug/L	P341183	
		Phaeophytin-a	1.1	I	ug/L	P341183	
		Chlorophyll-a, Uncorrected	2.6		ug/L	P341183	
1971425	SM 9223 B	Escherichia Coli-Quanti-Tray**	134		MPN/100 mL		

Quality Assurance Report Method Blank Results

Reference Method: SM 10200 H (mod.)

Batch ID: P341183

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: P342094

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

Reference Method: SOP-PCR-1.2

Batch ID: P342094

Component	Result	Code	Units
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Quality Assurance Report Method Blank Results

Reference Method: SOP-PCR-1.2
Batch ID: P342094

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

Reference Method: SOP-PCR-1.3
Batch ID: P342214

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

Reference Method: SOP-PCR-1.4
Batch ID: P342094

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: P341183

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Chlorophyll-a, Corrected	103		P	84 - 116

Reference Method: SOP-PCR-1.0
Batch ID: P342094

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
HF183-qPCR	108	102	P/P	50 - 175

Reference Method: SOP-PCR-1.2
Batch ID: P342094

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
GULL2-qPCR	86.1	106	P/P	50 - 300

Reference Method: SOP-PCR-1.3
Batch ID: P342214

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
GFD-purified-qPCR	103	11.8	P/F	50 - 175

Reference Method: SOP-PCR-1.4
Batch ID: P342094

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
BacR-qPCR	222	67.4	F/P	50 - 175
BacR-qPCR	133	105	P/P	50 - 175

Quality Assurance Report Matrix Spike Accuracy

Quality Assurance Report Matrix Spike Accuracy

Reference Method: SOP-PCR-1.0
Batch ID: P342094

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1970976	HF183-qPCR	98.3		P	50 - 175
1970977	HF183-qPCR	86.0		P	50 - 175
1970978	HF183-qPCR	83.8		P	50 - 175
1971125	HF183-qPCR	96.6		P	50 - 175
1971126	HF183-qPCR	95.4		P	50 - 175
1971127	HF183-qPCR	96.3		P	50 - 175
1971128	HF183-qPCR	97.4		P	50 - 175
1971129	HF183-qPCR	101		P	50 - 175
1971426	HF183-qPCR	101		P	50 - 175
1971430	HF183-qPCR	95.4		P	50 - 175
1972701	HF183-qPCR	87.4		P	50 - 175
1972726	HF183-qPCR	76.3		P	50 - 175
1977971	HF183-qPCR	69.7	84.8	P/P	50 - 175

Reference Method: SOP-PCR-1.2
Batch ID: P342094

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1971426	GULL2-qPCR	79.8		P	50 - 300
1971430	GULL2-qPCR	74.6		P	50 - 300
1972726	GULL2-qPCR	78.5		P	50 - 300

Reference Method: SOP-PCR-1.3
Batch ID: P342214

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1969180	GFD-purified-qPCR	140		P	50 - 175
1969348	GFD-purified-qPCR	144	132	P/P	50 - 175
1971426	GFD-purified-qPCR	158		P	50 - 175
1971430	GFD-purified-qPCR	177		F	50 - 175

Reference Method: SOP-PCR-1.4
Batch ID: P342094

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1971426	BacR-qPCR	66.5		P	50 - 175
1971430	BacR-qPCR	56.9		P	50 - 175
1972726	BacR-qPCR	64.2		P	50 - 175

Quality Assurance Report Precision

Reference Method: SM 10200 H (mod.)
Batch ID: P341183

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1971281	Chlorophyll-a, Corrected	17.5	Sample	P	0 - 25
1971281	Chlorophyll-a, Uncorrected	16.3	Sample	P	0 - 25
1971281	Phaeophytin-a	12.8	Sample	P	0 - 25

Quality Assurance Report Precision

Reference Method: SOP-PCR-1.0
Batch ID: P342094

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1977971	HF183-qPCR	25.2	Spike	F	0 - 25

Reference Method: SOP-PCR-1.3
Batch ID: P342214

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1969348	GFD-purified-qPCR	8.28	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: 1971426
Field Sample ID: 20030872

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
SOP-PCR-1.0	SKETA-qPCR	112	P	50 - 300
SOP-PCR-1.2	SKETA-qPCR	104	P	50 - 300
SOP-PCR-1.4	SKETA-qPCR	113	P	50 - 300

Lab Sample ID: 1971430
Field Sample ID: G2NE1145

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
SOP-PCR-1.0	SKETA-qPCR	103	P	50 - 300
SOP-PCR-1.2	SKETA-qPCR	96.7	P	50 - 300
SOP-PCR-1.4	SKETA-qPCR	108	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	103							17.5	
	Chlorophyll-a, Uncorrected								16.3	
	Phaeophytin-a								12.8	
SOP-PCR-1.0	HF183-qPCR	102	108		98.3	86.0	83.8			25.2
					96.6					
SOP-PCR-1.2	GULL2-qPCR	106	86.1		79.8	74.6	78.5			
SOP-PCR-1.3	GFD-purified-qPCR	11.8	103		158	177	140			8.28
					144					
SOP-PCR-1.4	BacR-qPCR	222	105	133	64.2	66.5	56.9			
		67.4								

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
SM 10200 H (mod.) / E31780	Phytoplankton chlorophyll-a corrected, uncorrected, and phaeophytin by spectrophotometry	1971413, 1971414, 1971415, 1971416, 1971417, 1971418
SM 9223 B / E82502	Escherichia coli by Colilert Quanti-Tray method by ALS Environmental Overflow Laboratory for Northeast District	1971419, 1971420, 1971421, 1971422, 1971423, 1971424, 1971425
SOP-PCR-1.0 / E31780	Detection and quantification of human-specific HF183 Bacteroides genetic marker with quantitative polymerase chain reaction	1971426, 1971430
SOP-PCR-1.2 / E31780	Detection and quantification of coastal bird specific Catellicoccus marimammalium Gull2 genetic marker with quantitative polymerase chain reaction	1971426, 1971430
SOP-PCR-1.3 / E31780	Detection and quantification of bird specific Helicobacter GFD genetic marker with quantitative polymerase chain reaction	1971426, 1971430
SOP-PCR-1.4 / E31780	Detection and quantification of Ruminant specific Bacteroidetes BacR genetic marker with quantitative polymerase chain reaction	1971426, 1971430
SOP-PCR-4.0 / E31780	Preparation of Samples by Filtration and held for qPCR Analysis	1971426, 1971427, 1971428, 1971429, 1971430

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
SM 10200 H (mod.)	03/02/2018	03/02/2018 14:21	Mariam Hanna	03/07/2018 14:00	Carina A. Tull	1971413, 1971414, 1971415, 1971416, 1971417, 1971418
SM 9223 B	03/01/2018	03/01/2018 16:51		03/02/2018 18:15	ALS Environmental, Jax	1971419, 1971420, 1971421, 1971422, 1971423, 1971424, 1971425
SOP-PCR-1.0	03/02/2018	03/02/2018 13:00	Puja Jasrotia	03/28/2018 14:34	Sarah Menz	1971426, 1971430
SOP-PCR-1.2	03/02/2018	03/02/2018 13:00	Puja Jasrotia	03/29/2018 12:49	Sarah Menz	1971426, 1971430
SOP-PCR-1.3	03/02/2018	03/02/2018 13:00	Sarah Menz	04/02/2018 11:01	Sarah Menz	1971426, 1971430
SOP-PCR-1.4	03/02/2018	03/02/2018 13:00	Puja Jasrotia	03/29/2018 09:25	Sarah Menz	1971426, 1971430
SOP-PCR-4.0	03/02/2018	03/02/2018 13:00	Angela Smith	03/23/2018 10:44	Puja Jasrotia	1971426, 1971427, 1971428, 1971429, 1971430